# STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH, N.C.

# CONTRACT AND

# CONTRACT BONDS

FOR CONTRACT NO. C204498

WBS <u>35494.3.1 STATE FUNDED</u>

T.I.P NO. <u>R-2511</u>

COUNTY OFBEAUFORT, MARTINTHIS IS THEROADWAY & STRUCTURECONTRACTROUTE NUMBERUS 17LENGTH10.625 MILESLOCATIONUS-17 FROM WASHINGTON BYPASS NORTH OF NC-171 TO MULTI-LANES<br/>SOUTH OF WILLIAMSTON.

CONTRACTOR BRANCH CIVIL INC ADDRESS P.O. BOX 40004 ROANOKE, VA 24022

BIDS OPENEDAPRIL 19, 2022CONTRACT EXECUTION05/11/2022

### STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH, N.C.

# PROPOSAL

# **INCLUDES ADDENDUM No. 1 DATED 4-11-2022**

#### DATE AND TIME OF BID OPENING:

# **APRIL 19, 2022 AT 2:00 PM**

CONTRACT ID C204498 WBS 35494.3.1

FEDERAL-AID NO.	STATE FUNDED
COUNTY	BEAUFORT, MARTIN
T.I.P. NO.	R-2511
MILES	10.625
ROUTE NO.	US 17
LOCATION	US-17 FROM WASHINGTON BYPASS NORTH OF NC-171 TO MULTI-LANES SOUTH OF WILLIAMSTON.

#### TYPE OF WORK GRADING, DRAINAGE, PAVING, AND STRUCTURE.

#### NOTICE:

ALL BIDDERS SHALL COMPLY WITH ALL APPLICABLE LAWS REGULATING THE PRACTICE OF GENERAL CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA WHICH REQUIRES THE BIDDER TO BE LICENSED BY THE N.C. LICENSING BOARD FOR CONTRACTORS WHEN BIDDING ON ANY NON-FEDERAL AID PROJECT WHERE THE BID IS \$30,000 OR MORE, EXCEPT FOR CERTAIN SPECIALTY WORK AS DETERMINED BY THE LICENSING BOARD. BIDDERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOT WITHSTANDING THESE LIMITATIONS ON BIDDING, THE BIDDER WHO IS AWARDED ANY PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING, REGARDLESS OF FUNDING SOURCES.

#### BIDS WILL BE RECEIVED AS SHOWN BELOW:

#### THIS IS A <u>ROADWAY & STRUCTURE</u> PROPOSAL

#### 5% BID BOND OR BID DEPOSIT REQUIRED

\_\_\_\_\_

#### PROPOSAL FOR THE CONSTRUCTION OF

#### CONTRACT No. C204498 IN BEAUFORT AND MARTIN COUNTIES, NORTH CAROLINA

#### Date

20

#### **DEPARTMENT OF TRANSPORTATION,**

#### **RALEIGH, NORTH CAROLINA**

The Bidder has carefully examined the location of the proposed work to be known as Contract No. C204498 has carefully examined the plans and specifications, which are acknowledged to be part of the proposal, the special provisions, the proposal, the form of contract, and the forms of contract payment bond and contract performance bond; and thoroughly understands the stipulations, requirements and provisions. The undersigned bidder agrees to bound upon his execution of the bid and subsequent award to him by the Board of Transportation in accordance with this proposal to provide the necessary contract payment bond and contract performance bond within fourteen days after the written notice of award is received by him. The undersigned Bidder further agrees to provide all necessary machinery, tools, labor, and other means of construction; and to do all the work and to furnish all materials, except as otherwise noted, necessary to perform and complete the said contract in accordance with the 2018 Standard Specifications for Roads and Structures by the dates(s) specified in the Project Special Provisions and in accordance with the requirements of the Engineer, and at the unit or lump sum prices, as the case may be, for the various items given on the sheets contained herein.

The Bidder shall provide and furnish all the materials, machinery, implements, appliances and tools, and perform the work and required labor to construct and complete State Highway Contract No. C204498 in Beaufort and Martin Counties, for the unit or lump sum prices, as the case may be, bid by the Bidder in his bid and according to the proposal, plans, and specifications prepared by said Department, which proposal, plans, and specifications show the details covering this project, and hereby become a part of this contract.

The published volume entitled North Carolina Department of Transportation, Raleigh, Standard Specifications for Roads and Structures, January 2018 with all amendments and supplements thereto, is by reference incorporated into and made a part of this contract; that, except as herein modified, all the construction and work included in this contract is to be done in accordance with the specifications contained in said volume, and amendments and supplements thereto, under the direction of the Engineer.

If the proposal is accepted and the award is made, the contract is valid only when signed either by the Contract Officer or such other person as may be designated by the Secretary to sign for the Department of Transportation. The conditions and provisions herein cannot be changed except over the signature of the said Contract Officer.

The quantities shown in the itemized proposal for the project are considered to be approximate only and are given as the basis for comparison of bids. The Department of Transportation may increase or decrease the quantity of any item or portion of the work as may be deemed necessary or expedient.

An increase or decrease in the quantity of an item will not be regarded as sufficient ground for an increase or decrease in the unit prices, nor in the time allowed for the completion of the work, except as provided for the contract.

Accompanying this bid is a bid bond secured by a corporate surety, or certified check payable to the order of the Department of Transportation, for five percent of the total bid price, which deposit is to be forfeited as liquidated damages in case this bid is accepted and the Bidder shall fail to provide the required payment and performance bonds with the Department of Transportation, under the condition of this proposal, within 14 calendar days after the written notice of award is received by him, as provided in the Standard Specifications; otherwise said deposit will be returned to the Bidder.



State Contract Officer

DocuSigned by: Ronald Elton Davenport, Jr. F81B6038A47A442...

04/11/2022

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### **PROJECT SPECIAL PROVISIONS**

**G-1** 

#### **GENERAL**

#### CONTRACT TIME AND LIQUIDATED DAMAGES:

(8-15-00) (Rev. 12-18-07)

The date of availability for this contract is **July 15, 2022**, except that work in jurisdictional waters and wetlands shall not begin until a meeting between the DOT, Regulatory Agencies, and the Contractor is held as stipulated in the permits contained elsewhere in this proposal. This delay in availability has been considered in determining the contract time for this project.

The completion date for this contract is January 28, 2027.

Except where otherwise provided by the contract, observation periods required by the contract will not be a part of the work to be completed by the completion date and/or intermediate contract times stated in the contract. The acceptable completion of the observation periods that extend beyond the final completion date shall be a part of the work covered by the performance and payment bonds.

The liquidated damages for this contract are **Two Hundred Dollars (\$ 200.00)** per calendar day. These liquidated damages will not be cumulative with any liquidated damages which may become chargeable under Intermediate Contract Time Number 1.

#### INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES: (7-1-95) (Rev. 2-21-12) 108 SPI G13 A

Exact for that work required und

Except for that work required under the Project Special Provisions entitled *Planting, Reforestation* and/or *Permanent Vegetation Establishment*, included elsewhere in this proposal, the Contractor will be required to complete all work included in this contract and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is July 15, 2022.

The completion date for this intermediate contract time is August 1, 2026.

The liquidated damages for this intermediate contract time are Seven Thousand Dollars (\$ 7,000.00) per calendar day.

Upon apparent completion of all the work required to be completed by this intermediate date, a final inspection will be held in accordance with Article 105-17 and upon acceptance, the Department will assume responsibility for the maintenance of all work except *Planting, Reforestation* and/or *Permanent Vegetation Establishment*. The Contractor will be responsible for and shall make corrections of all damages to the completed roadway caused by his planting operations, whether occurring prior to or after placing traffic through the project.

108

SP1 G07 A

#### **INTERMEDIATE CONTRACT TIME NUMBER 2 AND LIQUIDATED DAMAGES:** 108

(2-20-07)

SP1 G14 B

The Contractor shall not narrow or close a lane of traffic on US 17, detain and /or alter the traffic flow on or during holiday weekends, or any other time when traffic is unusually heavy, including the following schedules:

# HOLIDAY AND HOLIDAY WEEKEND LANE CLOSURE RESTRICTIONS

- For **unexpected occurrence** that creates unusually high traffic volumes, as directed by the 1. Engineer.
- For New Year's Day, between the hours of 6:00 AM December 31st and 8:00 AM 2. January 2<sup>nd</sup>. If New Year's Day is on a Friday, Saturday, Sunday or Monday, then until **8:00 AM** the following Tuesday.
- 3. For Easter, between the hours of 6:00 AM Thursday and 8:00 AM Monday.
- For Memorial Day, between the hours of 6:00 AM Friday and 8:00 AM Tuesday. 4.
- For Independence Day, between the hours of 6:00 AM the day before Independence Day 5. and **8:00** AM the day after Independence Day.

If Independence Day is on a Friday, Saturday, Sunday or Monday, then between the hours of

6:00 AM the Thursday before Independence Day and 8:00 AM the Tuesday after Independence Day.

- 6. For Labor Day, between the hours of 6:00 AM Friday and 8:00 AM Tuesday.
- For Thanksgiving, between the hours of 6:00 AM Tuesday and 8:00 AM Monday. 7.
- 8. For Christmas, between the hours of 6:00 AM the Friday before the week of Christmas Day and 8:00 AM the following Tuesday after the week of Christmas Day.

Holidays and holiday weekends shall include New Year's, Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. The Contractor shall schedule his work so that lane closures are not required during these periods, unless otherwise directed by the Engineer.

The time of availability for this intermediate contract work shall be the time the Contractor begins to install all traffic control devices for lane closures according to the time restrictions listed herein.

The completion time for this intermediate contract work shall be the time the Contractor is required to complete the removal of all traffic control devices for lane closures according to the time restrictions stated herein and place traffic in the existing traffic pattern.

The liquidated damages are Two Fifty Dollars (\$ 250.00) per fifteen (15) minute time period.

#### **INTERMEDIATE CONTRACT TIME NUMBER 3 AND LIQUIDATED DAMAGES:**

(2-20-07) (Rev. 6-18-13)

SP1 G14 H

The Contractor shall complete the work required of Phase I, Step #4B as shown on Sheet TMP-3 and shall place and maintain traffic on same.

108

The date of availability for this intermediate contract time is the date the Contractor elects to begin the work.

The completion date for this intermediate contract time is the date which is thirty (30) consecutive calendar days after and including the date the Contractor begins this work.

The liquidated damages are One Thousand Two Hundred Fifty Dollars (\$ 1,250.00) per calendar day.

**INTERMEDIATE CONTRACT TIME NUMBER 4 AND LIQUIDATED DAMAGES:** SP1 G14 H (2-20-07) (Rev. 6-18-13)

The Contractor shall complete the work required of Phase II, Step #3A as shown on Sheet TMP-3A and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the date the Contractor elects to begin the work.

The completion date for this intermediate contract time is the date which is seventy-five (75) consecutive calendar days after and including the date the Contractor begins this work.

The liquidated damages are Seven Hundred Fifty Dollars (\$ 750.00) per calendar day.

## **INTERMEDIATE CONTRACT TIME NUMBER 5 AND LIQUIDATED DAMAGES:**

(2-20-07) (Rev. 6-18-13)

SP1 G14 H

The Contractor shall complete the work required of Phase II, Step #3B as shown on Sheet TMP-3A and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the date the Contractor elects to begin the work.

The completion date for this intermediate contract time is the date which is thirty (30) consecutive calendar days after and including the date the Contractor begins this work.

The liquidated damages are Two Hundred Fifty Dollars (\$ 250.00) per calendar day.

#### **INTERMEDIATE CONTRACT TIME NUMBER 6 AND LIQUIDATED DAMAGES:** SP1 G14 H (2-20-07) (Rev. 6-18-13)

The Contractor shall complete the work required of Phase III, Step #2 as shown on Sheet TMP-3A and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the date the Contractor elects to begin the work.

The completion date for this intermediate contract time is the date which is **thirty (30)** consecutive calendar days after and including the date the Contractor begins this work.

The liquidated damages are **One Thousand Two Hundred Fifty Dollars (\$ 1,250.00)** per calendar day.

#### **INTERMEDIATE CONTRACT TIME NUMBER 7 AND LIQUIDATED DAMAGES:**

(2-20-07) (Rev. 6-18-13)

108

SP1 G14 H

The Contractor shall complete the work required of **Phase III**, **Step #3** as shown on Sheet **TMP-3A** and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the date the Contractor elects to begin the work.

The completion date for this intermediate contract time is the date which is **thirty (30)** consecutive calendar days after and including the date the Contractor begins this work.

The liquidated damages are Seven Hundred Fifty Dollars (\$ 750.00) per calendar day.

<b>INTERMEDIATE CONTRACT</b>	TIME NUMBER 8 AND LIC	DUIDATED DAMAGES:
(2-20-07) (Rev. 6-18-13)	108	SP1 G14 H

The Contractor shall complete the work required of **Phase IV**, **Step #2B** as shown on Sheet **TMP-3A** and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the date the Contractor elects to begin the work.

The completion date for this intermediate contract time is the date which is **thirty (30)** consecutive calendar days after and including the date the Contractor begins this work.

The liquidated damages are **One Thousand Dollars (\$ 1,000.00)** per calendar day.

#### INTERMEDIATE CONTRACT TIME NUMBER 9 AND LIQUIDATED DAMAGES: (2-20-07) (Rev. 6-18-13) 108 SP1 G14 H

The Contractor shall complete the work required of **Phase IV**, **Step #4** as shown on Sheet **TMP-3B** and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the date the Contractor elects to begin the work.

The completion date for this intermediate contract time is the date which is **forty-five (45)** consecutive calendar days after and including the date the Contractor begins this work.

The liquidated damages are **One Thousand Dollars (\$ 1,000.00)** per calendar day.

#### **INTERMEDIATE CONTRACT TIME NUMBER 10 AND LIQUIDATED DAMAGES:** 108

(2-20-07) (Rev. 6-18-13)

SP1 G14 H

The Contractor shall complete the work required of Phase V, Step #1 as shown on Sheet TMP-3B and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the date the Contractor elects to begin the work.

The completion date for this intermediate contract time is the date which is forty (40) consecutive calendar days after and including the date the Contractor begins this work.

The liquidated damages are Two Hundred Fifty Dollars (\$ 250.00) per calendar day.

# INTERMEDIATE CONTRACT TIME NUMBER 11 AND LIQUIDATED DAMAGES: SPI G14 H (2-20-07) (Rev. 6-18-13)

The Contractor shall complete the work required of Phase V, Step #3 as shown on Sheet TMP-3B and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the date the Contractor elects to begin the work.

The completion date for this intermediate contract time is the date which is thirty (30) consecutive calendar days after and including the date the Contractor begins this work.

The liquidated damages are Two Hundred Fifty Dollars (\$ 250.00) per calendar day.

#### **INTERMEDIATE CONTRACT TIME NUMBER 12 AND LIQUIDATED DAMAGES:** 108 SP1 G14 H

(2-20-07) (Rev. 6-18-13)

The Contractor shall complete the work required of Phase VI, Step #3A as shown on Sheet TMP-3B and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the date the Contractor elects to begin the work.

The completion date for this intermediate contract time is the date which is thirty (30) consecutive calendar days after and including the date the Contractor begins this work.

The liquidated damages are Seven Hundred Fifty Dollars (\$ 750.00) per calendar day.

# **PERMANENT VEGETATION ESTABLISHMENT:**

(2-16-12) (Rev. 10-15-13)

SP1 G16

Establish a permanent stand of the vegetation mixture shown in the contract. During the period between initial vegetation planting and final project acceptance, perform all work necessary to establish permanent vegetation on all erodible areas within the project limits, as well as, in borrow and waste pits. This work shall include erosion control device maintenance and installation, repair seeding and mulching, supplemental seeding and mulching, mowing, and fertilizer topdressing, as directed. All work shall be performed in accordance with the applicable section of the 2018 Standard Specifications. All work required for initial vegetation planting shall be performed as a part of the work necessary for the completion and acceptance of the Intermediate Contract Time (ICT). Between the time of ICT and Final Project acceptance, or otherwise referred to as the vegetation establishment period, the Department will be responsible for preparing the required National Pollutant Discharge Elimination System (NPDES) inspection records.

Once the Engineer has determined that the permanent vegetation establishment requirement has been achieved at an 80% vegetation density (the amount of established vegetation per given area to stabilize the soil) and no erodible areas exist within the project limits, the Contractor will be notified to remove the remaining erosion control devices that are no longer needed. The Contractor will be responsible for, and shall correct any areas disturbed by operations performed in permanent vegetation establishment and the removal of temporary erosion control measures, whether occurring prior to or after placing traffic on the project.

Payment for *Response for Erosion Control*, *Seeding and Mulching, Repair Seeding, Supplemental Seeding, Mowing, Fertilizer Topdressing, Silt Excavation,* and *Stone for Erosion Control* will be made at contract unit prices for the affected items. Work required that is not represented by contract line items will be paid in accordance with Articles 104-7 or 104-3 of the 2018 Standard Specifications. No additional compensation will be made for maintenance and removal of temporary erosion control items.

# **CONSTRUCTION MORATORIUM:**

(1-19-16)

No tree cutting will be allowed when temperature is 40 degrees or less.

#### **DELAY IN RIGHT OF ENTRY:**

(7-1-95) (Rev. 7-15-14)

The Contractor will not be allowed right of entry to the following parcel(s) prior to the listed date(s) unless otherwise permitted by the Engineer.

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Parcel No.	Property Owner	Date
175A	Jody Griffin	8-15-22
178	Hugh Kennedy	4-30-22
182	Lee Leavelle	4-28-22

#### **MAJOR CONTRACT ITEMS:**

(2-19-02)

The following listed items are the major contract items for this contract (see Article 104-5 of the 2018 Standard Specifications):

104

Line #	Description
10	Borrow Excavation
61	Aggregate Base Course
66	Asphalt Conc Intermediate Course, Type I19.0C
68	Asphalt Conc Surface Course, Type S9.5C

SP1 G18C

SP1 G22

SP1 G28

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#### **SPECIALTY ITEMS:**

(7-1-95)(Rev. 7-20-21)

108-6

SP1 G37

Items listed below will be the specialty items for this contract (see Article 108-6 of the 2018 Standard Specifications).

Line # 94-104 105-107 113-121 140-144, 156-157 145 158-159 160-195 196-238 239 240 252	Description Guardrail Fencing Signing Long-Life Pavement Markings Removable Tape Permanent Pavement Markers Utility Construction Erosion Control Reforestation
240-253	Signals/ITS System

#### **FUEL PRICE ADJUSTMENT:**

(11-15-05) (Rev. 7-20-21)

109-8

SP1 G43

Revise the 2018 Standard Specifications as follows:

#### Page 1-87, Article 109-8, Fuel Price Adjustments, add the following:

The base index price for DIESEL #2 FUEL is **\$ 2.7923** per gallon. Where any of the following are included as pay items in the contract, they will be eligible for fuel price adjustment.

The pay items and the fuel factor used in calculating adjustments to be made will be as follows:

Description	Units	Fuel Usage Factor Diesel
Unclassified Excavation	Gal/CY	0.29
Borrow Excavation	Gal/CY	0.29
Class IV Subgrade Stabilization	Gal/Ton	0.55
Aggregate Base Course	Gal/Ton	0.55
Sub-Ballast	Gal/Ton	0.55
Asphalt Concrete Base Course, Type	Gal/Ton	0.90 or 2.90
Asphalt Concrete Intermediate Course, Type	Gal/Ton	0.90 or 2.90
Asphalt Concrete Surface Course, Type	Gal/Ton	0.90 or 2.90
Open-Graded Asphalt Friction Course	Gal/Ton	0.90 or 2.90
Permeable Asphalt Drainage Course, Type	Gal/Ton	0.90 or 2.90
Sand Asphalt Surface Course, Type	Gal/Ton	0.90 or 2.90
Aggregate for Cement Treated Base Course	Gal/Ton	0.55
Portland Cement for Cement Treated Base Course	Gal/Ton	0.55
Portland Cement Concrete Pavement	Gal/SY	0.245
Concrete Shoulders Adjacent to Pavement	Gal/SY	0.245

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For the asphalt items noted in the chart as eligible for fuel adjustments, the bidder may include the *Fuel Usage Factor Adjustment Form* with their bid submission if they elect to use the fuel usage factor. The *Fuel Usage Factor Adjustment Form* is found at the following link:

https://connect.ncdot.gov/letting/LetCentral/Fuel%20Usage%20Factor%20Adjustment%20Form .pdf

Select either 2.90 Gal/Ton fuel factor or 0.90 Gal/Ton fuel factor for each asphalt line item on the *Fuel Usage Factor Adjustment Form*. The selected fuel factor for each asphalt item will remain in effect for the duration of the contract.

Failure to complete the *Fuel Usage Factor Adjustment Form* will result in using 2.90 gallons per ton as the Fuel Usage Factor for Diesel for the asphalt items noted above. The contractor will not be permitted to change the Fuel Usage Factor after the bids are submitted.

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#### **PAYOUT SCHEDULE:**

(1-19-10) (Rev. 1-17-12)

Submit an Anticipated Monthly Payout Schedule prior to beginning construction. The Anticipated Monthly Payout Schedule will be used by the Department to monitor funding levels for this project. Include a monthly percentage breakdown (in terms of the total contract amount) of the work anticipated to be completed. The schedule should begin with the date the Contractor plans to begin construction and end with the anticipated completion date. Submit updates of the Anticipated Monthly Payout Schedule on March 15, June 15, September 15, and December 15 of each calendar year until project acceptance. Submit the original Anticipated Monthly Payout Schedule and all subsequent updates to the Resident Engineer with a copy to the State Construction Engineer at 1 South Wilmington Street, 1543 Mail Service Center, Raleigh, NC 27699-1543.

### **SCHEDULE OF ESTIMATED COMPLETION PROGRESS:**

(7-15-08) (Rev. 5-13-19)

108-2

SP1 G58

SP1 G57

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:

<u>Fiscal Year</u>		<b>Progress (% of Dollar Value)</b>
2023	(7/01/22 - 6/30/23)	<b>31%</b> of Total Amount Bid
2024	(7/01/23 - 6/30/24)	28% of Total Amount Bid
2025	(7/01/24 - 6/30/25)	25% of Total Amount Bid
2026	(7/01/25 - 6/30/26)	15% of Total Amount Bid
2027	(7/01/26 - 6/30/27)	1% of Total Amount Bid

The Contractor shall also furnish his own progress schedule in accordance with Article 108-2 of the *2018 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.

#### **MINORITY BUSINESS ENTERPRISE AND WOMEN BUSINESS ENTERPRISE:**

(10-16-07)(Rev. 8-17-21)

102-15(J)

SP1 G66

#### Description

The purpose of this Special Provision is to carry out the North Carolina Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts financed in whole or in part with State funds.

#### Definitions

*Additional MBE/WBE Subcontractors* - Any MBE/WBE submitted at the time of bid that will <u>not</u> be used to meet the Combined MBE /WBE Goal. No submittal of a Letter of Intent is required.

*Combined MBE/WBE Goal:* A portion of the total contract, expressed as a percentage that is to be performed by committed MBE/WBE subcontractors.

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

*Contract Goal Requirement* - The approved participation at time of award, but not greater than the advertised Combined MBE/WBE contract goal.

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

*Manufacturer* - A firm that operates or maintains a factory or establishment that produces on the premises, the materials or supplies obtained by the Contractor.

*MBE Participation (Anticipated)* - A portion of the total contract, expressed as a percentage that is anticipated to be performed by committed MBE subcontractor(s).

*Minority Business Enterprise (MBE)* - A firm certified as a Disadvantaged Minority-Owned Business Enterprise through the North Carolina Unified Certification Program.

*Regular Dealer* - A firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, 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, cement, gravel, stone, and petroleum products need not keep such products in stock, if it owns and operates distribution equipment for the products. Brokers and packagers are not regarded as manufacturers or regular dealers within the meaning of this section.

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

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*North Carolina Unified Certification Program (NCUCP)* - A program that provides comprehensive services and information to applicants for MBE/WBE certification. The MBE/WBE program follows the same regulations as the federal Disadvantaged Business Enterprise (DBE) program 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.

*WBE Participation (Anticipated)* - A portion of the total contract, expressed as a percentage, that is anticipated to be performed by committed WBE subcontractor(s).

*Women Business Enterprise (WBE)* - A firm certified as a Disadvantaged Women-Owned Business Enterprise through the North Carolina Unified Certification Program.

### Forms and Websites Referenced in this Provision

*Payment Tracking System* - On-line system in which the Contractor enters the payments made to MBE and WBE 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 MBE/WBE 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 *MBE/WBE Replacement Request Form* - Form for replacing a committed MBE or WBE. http://connect.ncdot.gov/projects/construction/Construction%20Forms/DBE%20MBE%20WBE %20Replacement%20Request%20Form.pdf

SAF *Subcontract Approval Form* - Form required for approval to sublet the contract. http://connect.ncdot.gov/projects/construction/Construction%20Forms/Subcontract%20Approval %20Form%20Rev.%202012.zip

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.

http://connect.ncdot.gov/projects/construction/Construction%20Forms/Joint%20Check%20Notif ication%20Form.pdf

*Letter of Intent* - Form signed by the Contractor and the MBE/WBE subcontractor, manufacturer or regular dealer that affirms that a portion of said contract is going to be performed by the signed MBE/WBE 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%20 a%20Subcontractor.pdf

*Listing of MBE and WBE Subcontractors Form* - Form for entering MBE/WBE subcontractors on a project that will meet the Combined MBE/WBE goal. This form is for paper bids only.

http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/09%20M BE-WBE%20Subcontractors%20(State).docx

*Subcontractor Quote Comparison Sheet* - Spreadsheet for showing all subcontractor quotes in the work areas where MBEs and WBEs 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

## **Combined MBE/WBE Goal**

The Combined MBE/WBE Goal for this project is 7.0 %

The Combined Goal was established utilizing the following anticipated participation for Minority Business Enterprises and Women Business Enterprises:

- (A) Minority Business Enterprises **3.0 %** 
  - (1) *If the anticipated MBE participation is more than zero*, the Contractor shall exercise all necessary and reasonable steps to ensure that MBEs participate in at least the percent of the contract as set forth above.
  - (2) *If the anticipated MBE participation is zero*, the Contractor shall make an effort to recruit and use MBEs during the performance of the contract. Any MBE participation obtained shall be reported to the Department.
- (B) Women Business Enterprises **4.0** %
  - (1) *If the anticipated WBE participation is more than zero*, the Contractor shall exercise all necessary and reasonable steps to ensure that WBEs participate in at least the percent of the contract as set forth above.
  - (2) *If the anticipated WBE participation is zero*, the Contractor shall make an effort to recruit and use WBEs during the performance of the contract. Any WBE participation obtained shall be reported to the Department.

The Bidder is required to submit only participation to meet the Combined MBE/WBE Goal. The Combined Goal may be met by submitting all MBE participation, all WBE participation, or a combination of MBE and WBE participation.

## **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 MBE and WBE certified shall be used to meet the Combined MBE/WBE 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 MBE/WBE Subcontractors

At the time of bid, bidders shall submit <u>all</u> MBE and WBE participation that they anticipate to use during the life of the contract. Only those identified to meet the Combined MBE/WBE Goal will be considered committed, even though the listing shall include both committed MBE/WBE subcontractors and additional MBE/WBE subcontractors. Any additional MBE/WBE subcontractor participation above the goal will follow the banking guidelines found elsewhere in this provision. All other additional MBE/WBE subcontractor participation submitted at the time of bid will be used toward the Department's overall race-neutral goals. Only those firms with current MBE and WBE certification at the time of bid opening will be acceptable for listing in the bidder's submittal of MBE and WBE participation. The Contractor shall indicate the following required information:

(A) Electronic Bids

Bidders shall submit a listing of MBE and WBE participation in the appropriate section of the electronic submittal file.

- (1) Submit the names and addresses of MBE and WBE firms identified to participate in the contract. If the bidder uses the updated listing of MBE and WBE firms shown in the electronic submittal file, the bidder may use the dropdown menu to access the name and address of the firms.
- (2) Submit the contract line numbers of work to be performed by each MBE and WBE firm. When no figures or firms are entered, the bidder will be considered to have no MBE or WBE participation.
- (3) The bidder shall be responsible for ensuring that the MBE and WBE are 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 MBE's or WBE's participation will not count towards achieving the Combined MBE/WBE goal.
- (B) Paper Bids
  - (1) If the Combined MBE/WBE Goal is more than zero,
    - (a) Bidders, at the time the bid proposal is submitted, shall submit a listing of MBE/WBE participation, including the names and addresses on *Listing of MBE and WBE 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 MBE and WBE participation for the contract.
    - (b) If bidders have no MBE or WBE participation, they shall indicate this on the *Listing of MBE and WBE Subcontractors* by entering the word "None"

or the number "0." This form shall be completed in its entirety. <u>Blank</u> forms will not be deemed to represent zero participation. Bids submitted that do not have MBE and WBE 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 MBE/WBE 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 MBE's or WBE's participation will not count towards achieving the Combined MBE/WBE Goal.
- (2) If the Combined MBE/WBE Goal is zero, entries on the Listing of MBE and WBE Subcontractors are not required for the zero goal, however any MBE or WBE participation that is achieved during the project shall be reported in accordance with requirements contained elsewhere in the special provision.

#### **MBE or WBE Prime Contractor**

When a certified MBE or WBE firm bids on a contract that contains a Combined MBE/WBE goal, the 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 MBE or WBE bidder on a contract will meet the Combined MBE/WBE Goal by virtue of the work it performs on the contract with its own forces. However, all the work that is performed by the MBE or WBE bidder and any other similarly certified subcontractors will count toward the goal. The MBE or WBE bidder shall list itself along with any MBE or WBE subcontractors, if any, in order to receive credit toward the goal.

MBE/WBE prime contractors shall also follow Sections A and B listed under *Listing of MBE/WBE Subcontractor* just as a non-MBE/WBE bidder would.

#### Written Documentation – Letter of Intent

The bidder shall submit written documentation for each MBE/WBE that will be used to meet the Combined MBE/WBE Goal of the contract, indicating the bidder's commitment to use the MBE/WBE 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 State Contractor Utilization Engineer or at DBE@ncdot.gov no later than 10:00 a.m. of the sixth calendar day following opening of bids, unless the sixth day falls on an official state holiday. In that situation, it is due in the office of the State Contractor Utilization 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 MBE and WBE to be used toward the Combined MBE/WBE Goal, or if the form is incomplete (i.e. both signatures are not present), the MBE/WBE participation will not count toward meeting the Combined MBE/WBE Goal. If the lack of this participation drops the commitment below the Combined MBE/WBE

Goal, the Contractor shall submit evidence of good faith efforts for the goal, completed in its entirety, to the State Contractor Utilization Engineer or DBE@ncdot.gov no later than 10:00 a.m. on the eighth calendar day following opening of bids, unless the eighth day falls on an official state holiday. In that situation, it is due in the office of the State Contractor Utilization Engineer no later than 10:00 a.m. on the next official state business day.

#### **Banking MBE/WBE Credit**

If the bid of the lowest responsive bidder exceeds \$500,000 and if the committed MBE/WBE participation submitted exceeds the algebraic sum of the Combined MBE /WBE Goal by \$1,000 or more, the excess will be placed on deposit by the Department for future use by the bidder. Separate accounts will be maintained for MBE and WBE participation and these may accumulate for a period not to exceed 24 months.

When the apparent lowest responsive bidder fails to submit sufficient participation by MBE and WBE firms to meet the advertised goal, as part of the good faith effort, the Department will consider allowing the bidder to withdraw funds to meet the Combined MBE/WBE Goal as long as there are adequate funds available from the bidder's MBE and WBE bank accounts.

#### **Submission of Good Faith Effort**

If the bidder fails to meet or exceed the Combined MBE/WBE Goal, the apparent lowest responsive bidder shall submit to the Department documentation of adequate good faith efforts made to reach that specific goal.

A hard copy and an electronic copy of this information shall be received in the office of the State Contractor Utilization Engineer or at DBE@ncdot.gov no later than 10:00 a.m. on the sixth calendar day following opening of bids unless the sixth day falls on an official state holiday. In that situation, it would be due in the office of the State Contractor Utilization Engineer no later than 10:00 a.m. on the next official state business day. If the contractor cannot send the information electronically, then one complete set and 5 copies of this information shall be received under the same time constraints above.

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 MBE/WBE 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 a Combined MBE/WBE Goal 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 MBE/WBE participation. Adequate good faith efforts also mean that the bidder actively and aggressively sought MBE/WBE participation. Mere *pro forma* efforts are not considered good faith efforts.

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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 goals 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 MBEs/WBEs that are also prequalified subcontractors. The bidder must solicit this interest within at least 10 days prior to bid opening to allow the MBEs/WBEs to respond to the solicitation. Solicitation shall provide the opportunity to MBEs/WBEs within the Division and surrounding Divisions where the project is located. The bidder must determine with certainty if the MBEs/WBEs are interested by taking appropriate steps to follow up initial solicitations.
- (B) Selecting portions of the work to be performed by MBEs/WBEs in order to increase the likelihood that the Combined MBE/WBE Goal will be achieved.
  - (1) Where appropriate, break out contract work items into economically feasible units to facilitate MBE/WBE 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 advertised goal when the work to be sublet includes potential for MBE/WBE participation (2<sup>nd</sup> and 3<sup>rd</sup> tier subcontractors).
- (C) Providing interested certified MBEs/WBEs that are also prequalified subcontractors 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 MBEs/WBEs. It is the bidder's responsibility to make a portion of the work available to MBE/WBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available MBE/WBE subcontractors and suppliers, so as to facilitate MBE/WBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of MBEs/WBEs 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 MBEs/WBEs to perform the work.
  - (2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including MBE/WBE subcontractors, and would take a firm's price and capabilities as well as the advertised goal into consideration. However, the fact that there may be some additional costs involved in finding and using MBEs/WBEs is not in itself sufficient reason for a bidder's failure to meet the contract 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 MBEs/WBEs if the price difference is excessive or unreasonable.

- (E) Not rejecting MBEs/WBEs 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 MBEs/WBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or bidder.
- (G) Making efforts to assist interested MBEs/WBEs 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 MBEs/WBEs. 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 MBE or WBE quotes.
- (I) Any other evidence that the bidder submits which shows that the bidder has made reasonable good faith efforts to meet the advertised 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 Combined MBE/WBE Goal.
- (2) The bidders' past performance in meeting the contract goal.
- (3) The performance of other bidders in meeting the advertised goal. For example, when the apparent successful bidder fails to meet the 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 advertised goal, but meets or exceeds the average MBE and WBE 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 Combined MBE/WBE Goal can be met or that an adequate good faith effort has been made to meet the advertised goal.

#### **Non-Good Faith Appeal**

The State Prequalification 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 State Prequalification Engineer or at DBE@ncdot.gov. The appeal shall be made within 2 business days of notification of the determination of non-good faith.

### Counting MBE/WBE Participation Toward Meeting the Combined MBE/WBE Goal

(A) Participation

The total dollar value of the participation by a committed MBE/WBE will be counted toward the contract goal requirements. The total dollar value of participation by a committed MBE/WBE will be based upon the value of work actually performed by the MBE/WBE and the actual payments to MBE/WBE firms by the Contractor.

(B) Joint Checks

Prior notification of joint check use shall be required when counting MBE/WBE 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 MBE/WBE may enter into subcontracts. Work that a MBE subcontracts to another MBE firm may be counted toward the anticipated MBE participation. The same holds true for work that a WBE subcontracts to another WBE firm. Work that a MBE/WBE subcontracts to a non-MBE/WBE firm does <u>not</u> count toward the contract goal requirement. It should be noted that every effort shall be made by MBE and WBE contractors to subcontract to the same certification (i.e., MBEs to MBEs and WBEs to WBEs), in order to fulfill the MBE or WBE participation breakdown. This, however, may not always be possible due to the limitation of firms in the area. If the MBE or WBE firm shows a good faith effort has been made to reach out to similarly certified firms, the Engineer will not hold the prime responsible for meeting the individual MBE or WBE breakdown. If a MBE or WBE contractor 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 MBE or WBE is not performing a commercially useful function.

(D) Joint Venture

When a MBE or WBE 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 MBE or WBE in the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the MBE or WBE performs with its forces.

(E) Suppliers

A contractor may count toward its MBE/ WBE requirement 60 percent of its expenditures for materials and supplies required to complete the contract and obtained from a MBE or WBE regular dealer and 100 percent of such expenditures from a MBE or WBE manufacturer.

(F) Manufacturers and Regular Dealers

A contractor may count toward its MBE/ WBE requirement the following expenditures to MBE/WBE firms that are not manufacturers or regular dealers:

- (1) The fees or commissions charged by a MBE/WBE 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 MBE/WBE, which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site (but not the cost of the materials and supplies themselves), provided the fees are determined to be reasonable and not excessive as compared with fees customarily allowed for similar services.

#### **Commercially Useful Function**

(A) MBE/WBE Utilization

The Contractor may count toward its contract goal requirement only expenditures to MBEs and WBEs that perform a commercially useful function in the work of a contract. A MBE/WBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the MBE/WBE 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 MBE/WBE 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 actually performing and the MBE/WBE credit claimed for its performance of the work, and any other relevant factors. If it is determined that a MBE or WBE is not performing a Commercially Useful Function, the contractor may present evidence to rebut this presumption to the Department.

#### (B) MBE/WBE Utilization in Trucking

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

- (1) The MBE/WBE 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 the Combined MBE/WBE Goal.
- (2) The MBE/WBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
- (3) The MBE/WBE 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 MBE may subcontract the work to another MBE firm, including an owner-operator who is certified as a MBE. The same holds true that a WBE may subcontract the work to another WBE firm, including an owner-operator who is certified as a WBE. When this occurs, the MBE or WBE who subcontracts work receives credit for the total value of the transportation services the subcontracted MBE or WBE provides on the contract. It should be noted that every effort shall be made by MBE and WBE contractors to subcontract to the same certification (i.e., MBEs to MBEs and WBEs to WBEs), in order to fulfill the participation breakdown. This, however, may not always be possible due to the limitation of firms in the area. If the MBE or WBE firm shows a good faith effort has been made to reach out to similarly certified transportation service providers and there is no interest or availability, and they can get assistance from other certified providers, the Engineer will not hold the prime responsible for meeting the individual MBE or WBE participation breakdown.
- (5) The MBE/WBE may also subcontract the work to a non-MBE/WBE firm, including from an owner-operator. The MBE/WBE who subcontracts the work to a non-MBE/WBE is entitled to credit for the total value of transportation services provided by the non-MBE/WBE subcontractor not to exceed the value of transportation services provided by MBE/WBE-owned trucks on the contract. Additional participation by non-MBE/WBE 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 MBE/WBE and the Contractor will not count towards the MBE/WBE contract requirement.
- (6) A MBE/WBE may lease truck(s) from an established equipment leasing business open to the general public. The lease must indicate that the MBE/WBE 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 MBE/WBE, so long as the lease gives the MBE/WBE absolute priority for

use of the leased truck. This type of lease may count toward the MBE/WBE's credit as long as the driver is under the MBE/WBE's payroll.

(7) Subcontracted/leased trucks shall display clearly on the dashboard the name of the MBE/WBE 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.

#### **MBE/WBE Replacement**

When a Contractor has relied on a commitment to a MBE or WBE subcontractor (or an approved substitute MBE or WBE subcontractor) to meet all or part of a contract goal requirement, the contractor shall not terminate the MBE/WBE subcontractor 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 MBE/WBE subcontractor, a non-MBE/WBE 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 MBE/WBE subcontractor, with a copy to the Engineer of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor must give the MBE/WBE subcontractor five (5) business days to respond to the Contractor's Notice of Intent to Request Termination and/or Substitution. If the MBE/WBE subcontractor objects to the intended termination/substitution, the MBE/WBE, 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 MBE/WBE subcontractor.

A committed MBE/WBE subcontractor may only be terminated after receiving the Department's written approval based upon a finding of good cause for the proposed termination and/or substitution. For purposes of this section, good cause shall include the following circumstances:

- (a) The listed MBE/WBE subcontractor fails or refuses to execute a written contract;
- (b) The listed MBE/WBE 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 MBE/WBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;
- (c) The listed MBE/WBE subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements;
- (d) The listed MBE/WBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (e) The listed MBE/WBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR Parts 180, 215 and 1,200 or applicable state law;
- (f) The listed MBE/WBE subcontractor is not a responsible contractor;
- (g) The listed MBE/WBE voluntarily withdraws from the project and provides written notice of withdrawal;
- (h) The listed MBE/WBE is ineligible to receive MBE/WBE credit for the type of work required;

- (i) A MBE/WBE owner dies or becomes disabled with the result that the listed MBE/WBE contractor is unable to complete its work on the contract;
- (j) Other documented good cause that compels the termination of the MBE/WBE subcontractor. Provided, that good cause does not exist if the prime contractor seeks to terminate a MBE/WBE it relied upon to obtain the contract so that the prime contractor can self-perform the work for which the MBE/WBE contractor was engaged or so that the prime contractor can substitute another MBE/WBE or non-MBE/WBE contractor after contract award.

The Contractor shall comply with the following for replacement of a committed MBE/WBE:

(A) Performance Related Replacement

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

If a replacement MBE/WBE is not found that can perform at least the same amount of work as the terminated MBE/WBE, 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 MBE/WBEs that their interest is solicited in contracting the work defaulted by the previous MBE/WBE or in subcontracting other items of work in the contract.
- (2) Efforts to negotiate with MBE/WBEs for specific subbids including, at a minimum:
  - (a) The names, addresses, and telephone numbers of MBE/WBEs who were contacted.
  - (b) A description of the information provided to MBE/WBEs regarding the plans and specifications for portions of the work to be performed.
- (3) A list of reasons why MBE/WBE quotes were not accepted.
- (4) Efforts made to assist the MBE/WBEs contacted, if needed, in obtaining bonding or insurance required by the Contractor.
- (B) Decertification Replacement
  - (1) When a committed MBE/WBE 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 MBE/WBE 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.

- (2) When a committed MBE/WBE is decertified prior to the Department receiving the SAF (*Subcontract Approval Form*) for the named MBE/WBE firm, the Contractor shall take all necessary and reasonable steps to replace the MBE/WBE subcontractor with another MBE/WBE subcontractor to perform at least the same amount of work to meet the Combined MBE/WBE goal requirement. If a MBE/WBE 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).
- (3) Exception: If the MBE/WBE's ineligibility is caused solely by its having exceeded the size standard during the performance of the contract, the Department will not require the Contractor to solicit replacement MBE/WBE 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 and overall goal.

All requests for replacement of a committed MBE/WBE 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 MBE/WBE, 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 MBE/WBE based upon the Contractor's commitment, the MBE/WBE shall participate in additional work to the same extent as the MBE/WBE 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 MBEs/WBEs 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 MBE/WBE, the Contractor shall seek participation by MBEs/WBEs 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 MBE/WBE, the Contractor shall seek additional participation by MBEs/WBEs equal to the reduced MBE/WBE 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 MBE/WBE subcontractor. The Department reserves the right to require copies of actual subcontract agreements involving MBE/WBE subcontractors.

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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 MBE/WBE 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 MBE/WBE credit.

### **Reporting Minority and Women Business Enterprise Participation**

The Contractor shall provide the Engineer with an accounting of payments made to all MBE/ WBE 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 MBEs/WBEs, 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 DOT projects until the required information is submitted.

Contractors reporting transportation services provided by non-MBE/WBE 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 Payment Tracking System.

#### **Failure to Meet Contract Requirements**

Failure to meet contract requirements in accordance with Subarticle 102-15(J) of the 2018 Standard Specifications may be cause to disqualify the Contractor.

**G-24** 

#### **CONTRACTOR'S LICENSE REQUIREMENTS:**

If the successful bidder does not hold the proper license to perform any plumbing, heating, air conditioning, or electrical work in this contract, he will be required to sublet such work to a contractor properly licensed in accordance with *Article 2 of Chapter 87 of the General Statutes* (licensing of heating, plumbing, and air conditioning contractors) and *Article 4 of Chapter 87* of the *General Statutes* (licensing of electrical contractors).

#### **RESTRICTIONS ON ITS EQUIPMENT AND SERVICES:**

(11-17-20)

(7-1-95)

All telecommunications, video or other ITS equipment or services installed or utilized on this project must be in conformance with UNIFORM ADMINISTRATIVE REQUIREMENTS, COST PRINCIPLES, AND AUDIT REQUIREMENTS FOR FEDERAL AWARDS 2 CFR, § 200.216 **Prohibition on certain telecommunications and video surveillance services or equipment**.

# USE OF UNMANNED AIRCRAFT SYSTEM (UAS):

(8-20-19)

The Contractor shall adhere to all Federal, State and Local regulations and guidelines for the use of Unmanned Aircraft Systems (UAS). This includes but is not limited to US 14 CFR Part 107 *Small UAS Rule*, NC GS 15A-300.2 *Regulation of launch and recovery sites*, NC GS 63-95 *Training required for the operation of unmanned aircraft systems*, NC GS 63-96 *Permit required for commercial operation of unmanned aircraft system*, and NCDOT UAS Policy. The required operator certifications include possessing a current Federal Aviation Administration (FAA) Remote Pilot Certificate, a NC UAS Operator Permit as well as operating a UAS registered with the FAA.

Prior to beginning operations, the Contractor shall complete the NCDOT UAS – Flight Operation Approval Form and submit it to the Engineer for approval. All UAS operations shall be approved by the Engineer prior to beginning the operations.

All contractors or subcontractors operating UAS shall have UAS specific general liability insurance to cover all operations under this contract.

The use of UAS is at the Contractor's discretion. No measurement or payment will be made for the use of UAS. In the event that the Department directs the Contractor to utilize UAS, payment will be in accordance with Article 104-7 Extra Work.

### **EQUIPMENT IDLING GUIDELINES:**

(1-19-21)

107

Exercise reduced fuel consumption and reduced equipment emissions during the construction of all work associated with this contract. Employees engaged in the construction of this project

SP1 G092

SP1 G096

SP01 G090

SP1 G88

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should turn off vehicles when stopped for more than thirty (30) minutes and off-highway equipment should idle no longer than fifteen (15) consecutive minutes.

These guidelines for turning off vehicles and equipment when idling do not apply to:

- 1. Idling when queuing.
- 2. Idling to verify the vehicle is in safe operating condition.
- 3. Idling for testing, servicing, repairing or diagnostic purposes.
- 4. Idling necessary to accomplish work for which the vehicle was designed (such as operating a crane, mixing concrete, etc.).
- 5. Idling required to bring the machine system to operating temperature.
- 6. Emergency vehicles, utility company, construction, and maintenance vehicles where the engines must run to perform needed work.
- 7. Idling to ensure safe operation of the vehicle.
- 8. Idling when the propulsion engine is providing auxiliary power for other than heating or air conditioning. (such as hydraulic systems for pavers)
- 9. When specific traffic, safety, or emergency situations arise.
- 10. If the ambient temperature is less than 32 degrees Fahrenheit. Limited idling to provide for the safety of vehicle occupants (e.g. to run the heater).
- 11. If the ambient temperature is greater than 90 degrees Fahrenheit. Limited idling to provide for the safety of vehicle occupants of off-highway equipment (e.g. to run the air conditioning) no more than 30 minutes.

12. Diesel powered vehicles may idle for up to 30 minutes to minimize restart problems. Any vehicle, truck, or equipment in which the primary source of fuel is natural gas or electricity

Any vehicle, truck, or equipment in which the primary source of fuel is natural gas or electricity is exempt from the idling limitations set forth in this special provision.

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### **SUBSURFACE INFORMATION:**

(7-1-95)

Subsurface information is available on the roadway and structure portions of this project.

#### **PORTABLE CONCRETE BARRIER - (Partial Payments for Materials):** (7-1-95) (Rev. 8-16-11) 1170-4

SP1 G121

SP1 G125

SP1 G112 C

When so authorized by the Engineer, partial materials payments will be made up to 95 percent of the delivered cost of portable concrete barrier, provided that these materials have been delivered on the project and stored in an acceptable manner, and further provided the documents listed in Subarticle 109-5(C) of the *2018 Standard Specifications* have been furnished to the Engineer.

The provisions of Subarticle 109-5(B) of the 2018 Standard Specifications will apply to the portable concrete barrier.

#### **MAINTENANCE OF THE PROJECT:**

(11-20-07) (Rev. 1-17-12)

104-10

Revise the 2018 Standard Specifications as follows:

Page 1-39, Article 104-10 Maintenance of the Project, line 25, add the following after the first sentence of the first paragraph:

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All guardrail/guiderail within the project limits shall be included in this maintenance.

Page 1-39, Article 104-10 Maintenance of the Project, line 30, add the following as the last sentence of the first paragraph:

The Contractor shall perform weekly inspections of guardrail and guiderail and shall report damages to the Engineer on the same day of the weekly inspection. Where damaged guardrail or guiderail is repaired or replaced as a result of maintaining the project in accordance with this article, such repair or replacement shall be performed within 7 consecutive calendar days of such inspection report.

Page 1-39, Article 104-10 Maintenance of the Project, lines 42-44, replace the last sentence of the last paragraph with the following:

The Contractor will not be directly compensated for any maintenance operations necessary, except for maintenance of guardrail/guiderail, as this work will be considered incidental to the work covered by the various contract items. The provisions of Article 104-7, Extra Work, and Article 104-8, Compensation and Record Keeping will apply to authorized maintenance of guardrail/guiderail. Performance of weekly inspections of guardrail/guiderail, and the damage reports required as described above, will be considered to be an incidental part of the work being paid for by the various contract items.

# COOPERATION BETWEEN CONTRACTORS:

(7 - 1 - 95)

SP1 G133

The Contractor's attention is directed to Article 105-7 of the 2018 Standard Specifications.

R-5810 (Martin County) is located adjacent to the northern end of this project and is anticipated for a June 17, 2025 letting.

The Contractor on this project shall cooperate with the Contractor working within or adjacent to the limits of this project to the extent that the work can be carried out to the best advantage of all concerned.

#### **ELECTRONIC BIDDING:**

(2-19-19)

101, 102, 103

SP1 G140

Revise the 2018 Standard Specifications as follows:

**Page 1-4, Article 101-3, DEFINITIONS, BID (OR PROPOSAL)** *Electronic Bid*, line 1, replace "Bid Express®" with "the approved electronic bidding provider".

**Page 1-15, Subarticle 102-8(B), Electronic Bids, lines 39-40,** replace "to Bid Express®" with "via the approved electronic bidding provider".

Page 1-15, Subarticle 102-8(B)(1), Electronic Bids, line 41, delete "from Bid Express®"

**Page 1-17, Subarticle 102-9(C)(2), Electronic Bids, line 21,** replace "Bid Express® miscellaneous folder within the .ebs" with "electronic submittal".

**Page 1-29, Subarticle 103-4(C)(2), Electronic Bids, line 32,** replace ".ebs miscellaneous data file of Expedite" with "electronic submittal file"

#### TWELVE MONTH GUARANTEE:

(7-15-03)

108

SP1 G145

- (A) The Contractor shall guarantee materials and workmanship against latent and patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve months following the date of final acceptance of the work for maintenance and shall replace such defective materials and workmanship without cost to the Department. The Contractor will not be responsible for damage due to faulty design, normal wear and tear, for negligence on the part of the Department, and/or for use in excess of the design.
- (B) Where items of equipment or material carry a manufacturer's guarantee for any period in excess of twelve months, then the manufacturer's guarantee shall apply for that particular piece of equipment or material. The Department's first remedy shall be through the manufacturer although the Contractor is responsible for invoking the warranted repair work with the manufacturer. The Contractor's responsibility shall be limited to the term of the manufacturer's guarantee. NCDOT would be afforded the same warranty as provided by the Manufacturer.

This guarantee provision shall be invoked only for major components of work in which the Contractor would be wholly responsible for under the terms of the contract. Examples would include pavement structures, bridge components, and sign structures. This provision will not be used as a mechanism to force the Contractor to return to the project to make repairs or perform additional work that the Department would normally compensate the Contractor for. In addition, routine maintenance activities (i.e. mowing grass, debris removal, ruts in earth shoulders,) are not parts of this guarantee.

Appropriate provisions of the payment and/or performance bonds shall cover this guarantee for the project.

To ensure uniform application statewide the Division Engineer will forward details regarding the circumstances surrounding any proposed guarantee repairs to the Chief Engineer for review and approval prior to the work being performed.

#### **OUTSOURCING OUTSIDE THE USA:**

(9-21-04) (Rev. 5-16-06)

All work on consultant contracts, services contracts, and construction contracts shall be performed in the United States of America. No work shall be outsourced outside of the United States of America.

Outsourcing for the purpose of this provision is defined as the practice of subcontracting labor, work, services, staffing, or personnel to entities located outside of the United States.

The North Carolina Secretary of Transportation shall approve exceptions to this provision in writing.

#### **EROSION AND SEDIMENT CONTROL/STORMWATER CERTIFICATION:** 105-16, 225-2, 16

(1-16-07) (Rev 12-15-20)

General

Schedule and conduct construction activities in a manner that will minimize soil erosion and the resulting sedimentation and turbidity of surface waters. Comply with the requirements herein regardless of whether or not a National Pollution discharge Elimination System (NPDES) permit for the work is required.

Establish a chain of responsibility for operations and subcontractors' operations to ensure that the Erosion and Sediment Control/Stormwater Pollution Prevention Plan is implemented and maintained over the life of the contract.

- Certified Supervisor Provide a certified Erosion and Sediment Control/Stormwater (A) Supervisor to manage the Contractor and subcontractor operations, insure compliance with Federal, State and Local ordinances and regulations, and manage the Quality Control Program.
- (B) Certified Foreman - Provide a certified, trained foreman for each construction operation that increases the potential for soil erosion or the possible sedimentation and turbidity of surface waters.
- Certified Installer Provide a certified installer to install or direct the installation for (C) erosion or sediment/stormwater control practices.
- Certified Designer Provide a certified designer for the design of the erosion and sediment (D) control/stormwater component of reclamation plans and, if applicable, for the design of the project erosion and sediment control/stormwater plan.

SP1 G150

SP1 G180

### **Roles and Responsibilities**

- (A) Certified Erosion and Sediment Control/Stormwater Supervisor The Certified Supervisor shall be Level II and responsible for ensuring the erosion and sediment control/stormwater plan is adequately implemented and maintained on the project and for conducting the quality control program. The Certified Supervisor shall be on the project within 24 hours notice from initial exposure of an erodible surface to the project's final acceptance. Perform the following duties:
  - (1) Manage Operations Coordinate and schedule the work of subcontractors so that erosion and sediment control/stormwater measures are fully executed for each operation and in a timely manner over the duration of the contract.
    - (a) Oversee the work of subcontractors so that appropriate erosion and sediment control/stormwater preventive measures are conformed to at each stage of the work.
    - (b) Prepare the required National Pollutant Discharge Elimination System (NPDES) Inspection Record and submit to the Engineer.
    - (c) Attend all weekly or monthly construction meetings to discuss the findings of the NPDES inspection and other related issues.
    - (d) Implement the erosion and sediment control/stormwater site plans requested.
    - (e) Provide any needed erosion and sediment control/stormwater practices for the Contractor's temporary work not shown on the plans, such as, but not limited to work platforms, temporary construction, pumping operations, plant and storage yards, and cofferdams.
    - (f) Acquire applicable permits and comply with requirements for borrow pits, dewatering, and any temporary work conducted by the Contractor in jurisdictional areas.
    - (g) Conduct all erosion and sediment control/stormwater work in a timely and workmanlike manner.
    - (h) Fully perform and install erosion and sediment control/stormwater work prior to any suspension of the work.
    - (i) Coordinate with Department, Federal, State and Local Regulatory agencies on resolution of erosion and sediment control/stormwater issues due to the Contractor's operations.
    - (j) Ensure that proper cleanup occurs from vehicle tracking on paved surfaces or any location where sediment leaves the Right-of-Way.
    - (k) Have available a set of erosion and sediment control/stormwater plans that are initialed and include the installation date of Best Management Practices. These practices shall include temporary and permanent groundcover and be properly updated to reflect necessary plan and field changes for use and review by Department personnel as well as regulatory agencies.
  - (2) Requirements set forth under the NPDES Permit The Department's NPDES Stormwater permit (NCS000250) outlines certain objectives and management measures pertaining to construction activities. The permit references *NCG010000*, *General Permit to Discharge Stormwater* under the NPDES, and states that the

Department shall incorporate the applicable requirements into its delegated Erosion and Sediment Control Program for construction activities disturbing one or more acres of land. The Department further incorporates these requirements on all contracted bridge and culvert work at jurisdictional waters, regardless of size. Some of the requirements are, but are not limited to:

- (a) Control project site waste to prevent contamination of surface or ground waters of the state, i.e. from equipment operation/maintenance, construction materials, concrete washout, chemicals, litter, fuels, lubricants, coolants, hydraulic fluids, any other petroleum products, and sanitary waste.
- (b) Inspect erosion and sediment control/stormwater devices and stormwater discharge outfalls at least once every 7 calendar days and within 24 hours after a rainfall event equal to or greater than 1.0 inch that occurs within a 24 hour period. Additional monitoring may be required at the discretion of Division of Water Resources personnel if the receiving stream is 303(d) listed for turbidity and the project has had documented problems managing turbidity.
- (c) Maintain an onsite rain gauge or use the Department's Multi-Sensor Precipitation Estimate website to maintain a daily record of rainfall amounts and dates.
- (d) Maintain erosion and sediment control/stormwater inspection records for review by Department and Regulatory personnel upon request.
- (e) Implement approved reclamation plans on all borrow pits, waste sites and staging areas.
- (f) Maintain a log of turbidity test results as outlined in the Department's Procedure for Monitoring Borrow Pit Discharge.
- (g) Provide secondary containment for bulk storage of liquid materials.
- (h) Provide training for employees concerning general erosion and sediment control/stormwater awareness, the Department's NPDES Stormwater Permit NCS000250 requirements, and the applicable requirements of the *General Permit, NCG010000.*
- (i) Report violations of the NPDES permit to the Engineer immediately who will notify the Division of Water Quality Regional Office within 24 hours of becoming aware of the violation.
- (3) Quality Control Program Maintain a quality control program to control erosion, prevent sedimentation and follow provisions/conditions of permits. The quality control program shall:
  - (a) Follow permit requirements related to the Contractor and subcontractors' construction activities.
  - (b) Ensure that all operators and subcontractors on site have the proper erosion and sediment control/stormwater certification.
  - (c) Notify the Engineer when the required certified erosion and sediment control/stormwater personnel are not available on the job site when needed.
  - (d) Conduct the inspections required by the NPDES permit.
  - (e) Take corrective actions in the proper timeframe as required by the NPDES permit for problem areas identified during the NPDES inspections.

- (f) Incorporate erosion control into the work in a timely manner and stabilize disturbed areas with mulch/seed or vegetative cover on a section-by-section basis.
- (g) Use flocculants approved by state regulatory authorities where appropriate and where required for turbidity and sedimentation reduction.
- (h) Ensure proper installation and maintenance of temporary erosion and sediment control devices.
- (i) Remove temporary erosion or sediment control devices when they are no longer necessary as agreed upon by the Engineer.
- (j) The Contractor's quality control and inspection procedures shall be subject to review by the Engineer. Maintain NPDES inspection records and make records available at all times for verification by the Engineer.
- (B) *Certified Foreman* At least one Certified Foreman shall be onsite for each type of work listed herein during the respective construction activities to control erosion, prevent sedimentation and follow permit provisions:
  - (1) Foreman in charge of grading activities
  - (2) Foreman in charge of bridge or culvert construction over jurisdictional areas
  - (3) Foreman in charge of utility activities

The Contractor may request to use the same person as the Level II Supervisor and Level II Foreman. This person shall be onsite whenever construction activities as described above are taking place. This request shall be approved by the Engineer prior to work beginning.

The Contractor may request to name a single Level II Foreman to oversee multiple construction activities on small bridge or culvert replacement projects. This request shall be approved by the Engineer prior to work beginning.

- (C) *Certified Installers* Provide at least one onsite, Level I Certified Installer for each of the following erosion and sediment control/stormwater crew:
  - (1) Seeding and Mulching
  - (2) Temporary Seeding
  - (3) Temporary Mulching
  - (4) Sodding
  - (5) Silt fence or other perimeter erosion/sediment control device installations
  - (6) Erosion control blanket installation
  - (7) Hydraulic tackifier installation
  - (8) Turbidity curtain installation
  - (9) Rock ditch check/sediment dam installation
  - (10) Ditch liner/matting installation
  - (11) Inlet protection
  - (12) Riprap placement
  - (13) Stormwater BMP installations (such as but not limited to level spreaders, retention/detention devices)
  - (14) Pipe installations within jurisdictional areas

If a Level I *Certified Installer* is not onsite, the Contractor may substitute a Level II Foreman for a Level I Installer, provided the Level II Foreman is not tasked to another crew requiring Level II Foreman oversight.

(D) *Certified Designer* - Include the certification number of the Level III Certified Designer on the erosion and sediment control/stormwater component of all reclamation plans and if applicable, the certification number of the Level III Certified Designer on the design of the project erosion and sediment control/stormwater plan.

#### **Preconstruction Meeting**

Furnish the names of the *Certified Erosion and Sediment Control/Stormwater Supervisor*, *Certified Foremen*, *Certified Installers* and *Certified Designer* and notify the Engineer of changes in certified personnel over the life of the contract within 2 days of change.

# **Ethical Responsibility**

Any company performing work for the North Carolina Department of Transportation has the ethical responsibility to fully disclose any reprimand or dismissal of an employee resulting from improper testing or falsification of records.

#### **Revocation or Suspension of Certification**

Upon recommendation of the Chief Engineer to the certification entity, certification for *Supervisor*, *Certified Foremen*, *Certified Installers* and *Certified Designer* may be revoked or suspended with the issuance of an *Immediate Corrective Action (ICA)*, *Notice of Violation (NOV)*, or *Cease and Desist Order* for erosion and sediment control/stormwater related issues.

The Chief Engineer may recommend suspension or permanent revocation of certification due to the following:

- (A) Failure to adequately perform the duties as defined within this certification provision.
- (B) Issuance of an ICA, NOV, or Cease and Desist Order.
- (C) Failure to fully perform environmental commitments as detailed within the permit conditions and specifications.
- (D) Demonstration of erroneous documentation or reporting techniques.
- (E) Cheating or copying another candidate's work on an examination.
- (F) Intentional falsification of records.
- (G) Directing a subordinate under direct or indirect supervision to perform any of the above actions.
- (H) Dismissal from a company for any of the above reasons.
- (I) Suspension or revocation of one's certification by another entity.

Suspension or revocation of a certification will be sent by certified mail to the certificant and the Corporate Head of the company that employs the certificant.

A certificant has the right to appeal any adverse action which results in suspension or permanent revocation of certification by responding, in writing, to the Chief Engineer within 10 calendar days after receiving notice of the proposed adverse action.

> **Chief Engineer** 1536 Mail Service Center Raleigh, NC 27699-1536

Failure to appeal within 10 calendar days will result in the proposed adverse action becoming effective on the date specified on the certified notice. Failure to appeal within the time specified will result in a waiver of all future appeal rights regarding the adverse action taken. The certificant will not be allowed to perform duties associated with the certification during the appeal process.

The Chief Engineer will hear the appeal and make a decision within 7 days of hearing the appeal. Decision of the Chief Engineer will be final and will be made in writing to the certificant.

If a certification is temporarily suspended, the certificant shall pass any applicable written examination and any proficiency examination, at the conclusion of the specified suspension period, prior to having the certification reinstated.

#### **Measurement and Payment**

Certified Erosion and Sediment Control/Stormwater Supervisor, Certified Foremen, Certified Installers and Certified Designer will be incidental to the project for which no direct compensation will be made.

# PROCEDURE FOR MONITORING BORROW PIT DISCHARGE: (2-20-07) (Rev. 4-5-19) 105-16, 230, 801

SP1 G181

Water discharge from borrow pit sites shall not cause surface waters to exceed 50 NTUs (nephelometric turbidity unit) in streams not designated as trout waters and 10 NTUs in streams, lakes or reservoirs designated as trout waters. For lakes and reservoirs not designated as trout waters, the turbidity shall not exceed 25 NTUs. If the turbidity exceeds these levels due to natural background conditions, the existing turbidity level shall not be increased.

If during any operating day, the downstream water quality exceeds the standard, the Contractor shall do all of the following:

- Either cease discharge or modify the discharge volume or turbidity levels to bring the (A) downstream turbidity levels into compliance, or
- Evaluate the upstream conditions to determine if the exceedance of the standard is due to **(B)** natural background conditions. If the background turbidity measurements exceed the standard, operation of the pit and discharge can continue as long as the stream turbidity levels are not increased due to the discharge.
- (C) Measure and record the turbidity test results (time, date and sampler) at all defined sampling locations 30 minutes after startup and at a minimum, one additional sampling of all sampling locations during that 24-hour period in which the borrow pit is discharging.

(D) Notify DWQ within 24 hours of any stream turbidity standard exceedances that are not brought into compliance.

During the Environmental Assessment required by Article 230-4 of the 2018 Standard Specifications, the Contractor shall define the point at which the discharge enters into the State's surface waters and the appropriate sampling locations. Sampling locations shall include points upstream and downstream from the point at which the discharge enters these waters. Upstream sampling location shall be located so that it is not influenced by backwater conditions and represents natural background conditions. Downstream sampling location shall be located at the point where complete mixing of the discharge and receiving water has occurred.

The discharge shall be closely monitored when water from the dewatering activities is introduced into jurisdictional wetlands. Any time visible sedimentation (deposition of sediment) on the wetland surface is observed, the dewatering activity will be suspended until turbidity levels in the stilling basin can be reduced to a level where sediment deposition does not occur. Staining of wetland surfaces from suspended clay particles, occurring after evaporation or infiltration, does not constitute sedimentation. No activities shall occur in wetlands that adversely affect the functioning of a wetland. Visible sedimentation will be considered an indication of possible adverse impacts on wetland use.

The Engineer will perform independent turbidity tests on a random basis. These results will be maintained in a log within the project records. Records will include, at a minimum, turbidity test results, time, date and name of sampler. Should the Department's test results exceed those of the Contractor's test results, an immediate test shall be performed jointly with the results superseding the previous test results of both the Department and the Contractor.

The Contractor shall use the NCDOT Turbidity Reduction Options for Borrow Pits Matrix, available at <u>https://connect.ncdot.gov/resources/roadside/FieldOperationsDocuments/</u><u>TurbidityReductionOptionSheet.pdf</u> to plan, design, construct, and maintain BMPs to address water quality standards. Tier I Methods include stilling basins which are standard compensatory BMPs. Other Tier I methods are noncompensatory and shall be used when needed to meet the stream turbidity standards. Tier II Methods are also noncompensatory and are options that may be needed for protection of rare or unique resources or where special environmental conditions exist at the site which have led to additional requirements being placed in the DWQ's 401 Certifications and approval letters, Isolated Wetland Permits, Riparian Buffer Authorization or a DOT Reclamation Plan's Environmental Assessment for the specific site. Should the Contractor exhaust all Tier I Methods on a site exclusive of rare or unique resources or special environmental conditions, Tier II Methods may be required by regulators on a case by case basis per supplemental agreement.

SP1 G47

The Contractor may use cation exchange capacity (CEC) values from proposed site borings to plan and develop the bid for the project. CEC values exceeding 15 milliequivalents per 100 grams of soil may indicate a high potential for turbidity and should be avoided when dewatering into surface water is proposed.

No additional compensation for monitoring borrow pit discharge will be paid.

# **STEEL PRICE ADJUSTMENT:**

(4-19-22)

#### **Description and Purpose**

Steel price adjustments will be made to the payments due the Contractor for items as defined herein that are permanently incorporated into the work, when the price of raw steel mill products utilized on the contract have fluctuated. The Department will adjust monthly progress payments up or down as appropriate for cost changes in steel according to this provision.

#### **Eligible Items**

The list of eligible bid items for steel price adjustment can be found on the Departments website at the following address:

https://connect.ncdot.gov/letting/LetCentral/Eligible%20Bid%20Items%20for%20Steel%20Price%20Adjustment.xlsx

Nuts, bolts, anchor bolts, rebar chairs, connecting bands and other miscellaneous hardware associated with these items shall not be included in the price adjustment.

Adjustments will only be made for fluctuations in the cost of the steel used in the above products as specified in the Product Relationship Table below. The producing mill is defined as the source of steel product before any fabrication has occurred (e.g., coil, plate, rebar, hot rolled shapes, etc.). No adjustment will be made for changes in the cost of fabrication, coating, shipping, storage, etc.

No steel price adjustments will be made for any products manufactured from steel having an adjustment date, as defined by the Product Relationship Table below, prior to the letting date.

#### **Bid Submittal Requirements**

The successful bidder, within 14 calendar days after the notice of award is received by him, shall provide the completed Form SPA-1 to the Department. Form SPA-1 can be found on the Departments website at the following address:

https://connect.ncdot.gov/letting/LetCentral/Form%20SPA-1.xlsm

The Contractor shall provide Form SPA-1 listing the Contract Line Number, (with corresponding Item Number, Item Description, and Category) for the steel products they wish to have an

adjustment calculated. Only the contract items corresponding to the list of eligible item numbers for steel price adjustment may be entered on Form SPA-1. The Contractor may choose to have steel price adjustment applied to any, all, or none of the eligible items. However, the Contractor's selection of items for steel price adjustment or non-selection (non-participation) may not be changed once Form SPA-1 has been received by the Department. Items the Bidder chooses for steel price adjustment must be designated by writing the word "Yes" in the column titled "Option" by each Pay Item chosen for adjustment. The Bidder's designations on Form SPA-1 must be written in ink or typed and signed by the Bidder to be considered complete. Items not properly designated, designated with "No", or left blank on the Bidder's Form SPA-1 will automatically be removed from consideration for adjustment. No steel items will be eligible for steel price adjustment on this Project if the Bidder fails to return Form SPA-1 in accordance with this provision.

# **Establishing the Base Price**

The Department will use a blend of monthly average prices as reported from the Fastmarkets platform to calculate the monthly adjustment indices (BI and MI). This data is typically available on the first day of the month for the preceding month. The indices will be calculated by the Department for the different categories found on the Product Relationship Table below. For item numbers that include multiple types of steel products, the category listed for that item number will be used for adjusting each steel component.

The bidding index for Category 1 Steel items is \$50.50 per hundredweight. The bidding index for Category 2 Steel items is \$86.16 per hundredweight. The bidding index for Category 3 Steel items is \$68.60 per hundredweight. The bidding index for Category 4 Steel items is \$55.78 per hundredweight. The bidding index for Category 5 Steel items is \$62.81 per hundredweight. The bidding index for Category 6 Steel items is \$90.16 per hundredweight. The bidding index for Category 7 Steel items is \$56.30 per hundredweight.

The bidding index represents a selling price of steel based on Fastmarkets data for the month of February 2022.

- MI = Monthly Index. in Dollars (\$) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.
- BI = Bidding Index. in Dollars (\$) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.

	Product Relationship	Table	
Steel Product (Title)	BI, MI*	Adjustment Date for MI	Category
Reinforcing Steel, Bridge	Based on one or more	Delivery Date from	1
Deck, and SIP Forms	Fastmarkets indices	Producing Mill	
Structural Steel and	Based on one or more	Delivery Date from	2
Encasement Pipe	Fastmarkets indices	Producing Mill	
Steel H-Piles, Soldier Pile	Based on one or more	Delivery Date from	3
Walls	Fastmarkets indices	Producing Mill	
Guardrail and Pipe Piles	Based on one or more	Material Received	4
Items	Fastmarkets indices	Date**	
Fence Items	Based on one or more	Material Received	5
	Fastmarkets indices	Date**	
Overhead Sign Assembly,	Based on one or more	Material Received	6
Signal Poles, High Mount	Fastmarkets indices	Date**	
Standards			
Prestressed Concrete	Based on one or more	Cast Date of Member	7
Members	Fastmarkets indices		
* BI and MI are in converte	d units of Dollars per Hund	redweight (\$/CWT)	
** Material Received Date	is defined as the date the ma	terials are received on the p	roject site.

If a material prepayment is made for a Category 4-6 item, the Adjustment Date to be used will be the date of the prepayment request instead of the Materials Received Date.

Submit documentation to the Engineer for all items listed in the Contract for which the Contractor is requesting a steel price adjustment.

#### **Submittal Requirements**

The items in categories 1,2, and 3, shall be specifically stored, labeled, or tagged, recognizable by color marking, and identifiable by Project for inspection and audit verification immediately upon arrival at the fabricator.

Furnish the following documentation for all steel products to be incorporated into the work and documented on Form SPA-2, found on the Departments website at the following address:

https://connect.ncdot.gov/projects/construction/Construction%20Form%20SPA-2.xlsx

Submit all documentation to the Engineer prior to incorporation of the steel into the completed work. The Department will withhold progress payments for the affected contract line item if the documentation is not provided and at the discretion of the Engineer the work is allowed to proceed. Progress payments will be made upon receipt of the delinquent documentation.

Step 1 (Form SPA -2)

Utilizing Form SPA-2, submit separate documentation packages for each line item from Form SPA-1 for which the Contractor opted for a steel price adjustment. For line items with multiple components of steel, each component should be listed separately. Label each SPA-2 documentation package with a unique number as described below.

a. Documentation package number: (Insert the contract line-item) - (Insert sequential package number beginning with "1").

Example: 412 - 1,

- 412 2,
- 424 1,
- 424 2,
- 424 3, etc.
- b. The steel product quantity in pounds
  - i. The following sources should be used, in declining order of precedence, to determine the weight of steel/iron, based on the Engineers decision:
    - 1. Department established weights of steel/iron by contract pay item per pay unit;
    - 2. Approved Shop Drawings;
    - 3. Verified Shipping Documents;
    - 4. Contract Plans;
    - 5. Standard Drawing Sheets;
    - 6. Industry Standards (i.e., AISC Manual of Steel Construction, AWWA Standards, etc.); and
    - 7. Manufacture's data.
  - ii. Any item requiring approved shop drawings shall have the weights of steel calculated and shown on the shop drawings or submitted and certified separately by the fabricator.
- c. The date the steel product, subject to adjustment, was shipped from the producing mill (Categories 1-3), received on the project (Categories 4-6), or casting date (Category 7).

Step 2 (Monthly Calculator Spreadsheet)

For each month, upon the incorporation of the steel product into the work, provide the Engineer the following:

- 1) Completed NCDOT Steel Price Adjustment Calculator Spreadsheet, summarizing all the steel submittal packages (Form SPA-2) actually incorporated into the completed work in the given month.
  - a. Contract Number
  - b. Bidding Index Reference Month
  - c. Contract Completion Date or Revised Completion Date
  - d. County, Route, and Project TIP information
  - e. Item Number
  - f. Line-Item Description
  - g. Submittal Number from Form SPA-2
  - h. Adjustment date
  - i. Pounds of Steel
- 2) An affidavit signed by the Contractor stating the documentation provided in the NCDOT Steel Price Adjustment Calculator Spreadsheet is true and accurate.

# **Price Adjustment Conditions**

Download the Monthly Steel Adjustment Spreadsheet with the most current reference data from the Department's website each month at the following address:

https://connect.ncdot.gov/projects/construction/Construction%20Form%20SPA-3%20NCDOT%20Steel%20Price%20Adjustment%20Calculator.xlsx

If the monthly Fastmarkets data is not available, the data for the most recent immediately preceding month will be used as the basis for adjustment.

# **Price Adjustment Calculations**

The price adjustment will be determined by comparing the percentage of change in index value listed in the proposal (BI) to the monthly index value (MI). (See included sample examples). Weights and date of shipment must be documented as required herein. The final price adjustment dollar value will be determined by multiplying this percentage increase or decrease in the index by the represented quantity of steel incorporated into the work, and the established bidding index (BI) subject to the limitations herein.

# Price increase/decrease will be computed as follows:

SPA = ((MI/BI) - 1) \* BI \* (Q/100)

Where;

SPA = Steel price adjustment in dollars

- MI = Monthly Shipping Index. in Dollars (\$) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.
- BI = Bidding Index. in Dollars (\$) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.
- Q = Quantity of steel, product, pounds actually incorporated into the work as documented by the Contractor, or Design Build Team and verified by the Engineer.

Calculations for price adjustment shall be shown separate from the monthly progress estimate and will not be included in the total cost of work for determination of progress or for extension of Contract time in accordance with Subarticle 108-10(B)(1).

Any apparent attempt to unbalance bids in favor of items subject to price adjustment may result in rejection of the bid proposal.

Adjustments will be paid or charged to the Contractor only. Any Contractor receiving an adjustment under this provision shall distribute the proper proportional part of such adjustments to the subcontractor who performed the applicable work.

Delays to the work caused by steel shortages may be justification for a Contract time extension but will not constitute grounds for claims for standby equipment, extended office overhead, or other costs associated with such delays.

If an increase in the steel material price is anticipated to exceed 50% of the original quoted price, the contractor must notify the Department within 7 days prior to purchasing the material. Upon receipt of such notification, the Department will direct the Contractor to either (1) proceed with the work or (2) suspend the work and explore the use of alternate options.

If the decrease in the steel material exceeds 50% of the original quoted price, the contractor may submit to the Department additional market index information specific to the item in question to dispute the decrease. The Department will review this information and determine if the decrease is warranted.

When the steel product adjustment date, as defined in the Product Relationship Table, is after the approved contract completion date, the steel price adjustments will be based on the lesser value of either the MI for the month of the approved contract completion date or the MI for the actual adjustment date.

If the price adjustment is based on estimated material quantities for that time, and a revision to the total material quantity is made in a subsequent or final estimate, an appropriate adjustment will be made to the price adjustment previously calculated. The adjustment will be based on the same indices used to calculate the price adjustment which is being revised. If the adjustment date of the revised material quantity cannot be determined, the adjustment for the quantity in question, will be based on the indices utilized to calculate the steel price adjustment for the last initial documentation package submission, for the steel product subject to adjustment, that was incorporated into the particular item of work, for which quantities are being finalized. Example: Structural steel for a particular bridge was provided for in three different shipments with each having a different mill shipping date. The quantity of structural steel actually used for the bridge was calculated and a steel price adjustment was made in a progress payment. At the conclusion of the work an error was found in the plans of the final quantity of structural steel used for the bridge. The quantity to be adjusted cannot be directly related to any one of the three mill shipping dates. The steel price adjustment for the quantity in question would be calculated using the indices that were utilized to calculate the steel price adjustment for the quantity of structural steel represented by the last initial structural steel documentation package submission. The package used will be the one with the greatest sequential number.

#### **Extra Work/Force Account:**

When steel products, as specified herein, are added to the contract as extra work, in accordance with the provisions of Article 104-7 or 104-3, the Engineer will determine and specify in the supplemental agreement, the need for application of steel price adjustments on a case-by-case basis. No steel price adjustments will be made for any products manufactured from steel having an adjustment date prior to the supplemental agreement execution date. Price adjustments will be made as provided herein, except the Bidding Index will be based on the month in which the supplemental agreement pricing was executed.

For work performed on force account basis, reimbursement of actual material costs, along with the specified overhead and profit markup, will be considered to include full compensation for the current cost of steel and no steel price adjustments will be made.

**G-42** 

Examples For	·m SPA-2		
	Steel Price Adjustment Sub	mission Form	
Contract Number	C203394Bid	Reference Month _	January 2019
Submittal Date	8/31/2019		
Contract Line Item	237		
Line Item Description	on <u>APPROXLBS Structural Steel</u>		
Sequential Submitta Number	12		

Supplier	Description of material	Location information	Quantity in lbs.	Adjustment Date
XYZ mill	Structural Steel	Structure 3, Spans A-C	1,200,000	May 4, 2020
ABC distributing	Various channel & angle shapes	Structure 3 Spans A-C	35,000	July 14, 2020
		Total Pounds of Steel	1,235,000	

Note: Attach the following supporting documentation to this form.

- Bill of Lading to support the shipping dates
- Supporting information for weight documentation (e.g., Pay item reference, Shop drawings, shipping documents, Standards Sheets, industry standards, or manufacturer's data)

By providing this data under my signature, I attest to the accuracy of and validity of the data on this form and certify that no deliberate misrepresentation in any manner has occurred.

Printed Name

Signature

**G-43** 

Examples Form S	
	Steel Price Adjustment Submission Form
Contract Number	C203394     Bid Reference Month     January 2019
Submittal Date	<u>August 31, 2019</u>
Contract Line Item	<u>237</u>
Line Item Description	SUPPORT, OVRHD SIGN STR -DFEB – STA 36+00
Sequential Submittal Number	<u>2</u>

Supplier	Description of material	Location information	Quantity in lbs.	Adjustment Date
XYZ mill	Tubular Steel (Vertical	<u>-DFEB – STA 36+00</u>	12000	December 11, 2021
	legs)			
PDQ Mill	4" Tubular steel (Horizontal	-DFEB – STA 36+00	5900	December 11, 2021
-	legs)			
ABC	Various channel & angle	-DFEB – STA 36+00	1300	December 11, 2021
distributing	shapes (see quote)			
	Catwalk assembly	-DFEB - STA 36+00	2000	December 11, 2021
Nucor	Flat plate	<u>-DFEB – STA 36+00</u>	650	December 11, 2021
		Total Pounds of Steel	21,850	

Note: Attach the following supporting documentation to this form.

- Bill of Lading to support the shipping dates
- Supporting information for weight documentation (e.g., Pay item reference, Shop drawings, shipping documents, Standards Sheets, industry standards, or manufacturer's data)

By providing this data under my signature, I attest to the accuracy of and validity of the data on this form and certify that no deliberate misrepresentation in any manner has occurred.

Printed Name

Signature

**Price Adjustment Sample Calculation (increase)** 

Project bid on September 17, 2019

Line Item 635 "Structural Steel" has a plan quantity of 2,717,000 lbs.

Bidding Index for Structural Steel (Category 2) in the proposal was \$36.12/CWT = BI

450,000 lbs. of Structural Steel for Structure 2 at Station 44+08.60 were shipped to fabricator from the producing mill in same month, May 2021.

Monthly Index for Structural Steel (Category 2) for May 2021 was \$64.89/CWT = MI

The Steel Price Adjustment formula is as follows:

SPA = 
$$((MI/BI) - 1) * BI * (Q/100)$$

Where;

SPA = Steel price adjustment in dollars

- BI = Bidding Index in dollars (\$) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.
- MI = Mill Shipping Index in dollars (\$) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.
- Q = Quantity of steel product, in pounds (lbs.) actually incorporated into the work as documented by the Contractor, or Design Build Team and verified by the Engineer.
- BI = \$36.12/ CWT
- MI = \$64.89 / CWT

% change = ((MI/BI)-1) = (\$64.89 / \$36.12 - 1) = (1.79651 - 1) = 0.79651162791

Q = 450,000 lbs.

SPA = 0.79651162791x \$36.12 x (450,000/100)

- SPA = 0.79651162791\* \$36.12 \*4,500
- SPA = \$129,465 pay adjustment to Contractor for Structural Steel (Structure 2 at Station 44+08.60)

**Price Adjustment Sample Calculation (decrease)** 

Project bid on December 18, 2018

Line Item 635 Structural Steel has a plan quantity of 2,717,000 lbs.

Bidding Index for Structural Steel (Category 2) in the proposal was \$46.72/CWT = BI

600,000 lbs. of Structural Steel for Structure 1 at Station 22+57.68 were shipped to fabricator from the producing mill in same month, August 2020.

Monthly Index for Structural Steel (Category 2) for August 2020 was \$27.03/CWT = MI

The Steel Price Adjustment formula is as follows:

SPA = 
$$((MI/BI) - 1) * BI * (Q/100)$$

Where;

SPA = Steel price adjustment in dollars

- BI = Bidding Index in dollars (\$) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.
- MI = Mill Shipping Index in dollars (\$) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.
- Q = Quantity of steel product, in pounds (lbs.) actually incorporated into the work as documented by the Contractor, or Design Build Team and verified by the Engineer.
- BI = \$46.72/ CWT
- MI = \$27.03 / CWT

% change = ((MI/BI)-1) = (\$27.03/\$46.72-1) = (0.57855-1) = -0.421446917808

Q = 600,000 lbs.

SPA = -0.421446917808 \* \$46.72 \* (600,000/100)

SPA = -0.421446917808 \* \$46.72 \*6,000

SPA = \$118,140.00 Credit to the Department for Structural Steel (Structure 1 at Station 22+57.68)

**Price Adjustment Sample Calculation (increase)** 

Project bid on July 16, 2020

Line Item 614 Reinforced Concrete Deck Slab has a plan quantity of 241974 lbs.

Bidding Index Reference Month was May 2020. Bidding Index for Reinforced Concrete Deck Slab (Category 1) in the proposal was \$29.21/CWT = BI

51,621 lbs. of reinforcing steel and 52,311 lbs. of epoxy coated reinforcing steel for Structure 2 at Station 107+45.55 -L- was shipped to fabricator from the producing mill in same month, May 2021.

Monthly Index for Reinforced Concrete Deck Slab (Category 1) for May 2021 was \$43.13/CWT = MI

The Steel Price Adjustment formula is as follows:

SPA = 
$$((MI/BI) - 1) * BI * (Q/100)$$

Where;

SPA = Steel price adjustment in dollars

- BI = Bidding Index in dollars (\$) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.
- MI = Mill Shipping Index in dollars (\$) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.
- Q = Quantity of steel product, in pounds (lbs.) actually incorporated into the work as documented by the Contractor, or Design Build Team and verified by the Engineer.
- BI = \$29.21/CWT
- MI = \$43.13 / CWT

% change = ((MI/BI)-1) = (\$43.13 / \$29.21 - 1) = (1.47655 - 1) = 0.47654912701

Q = 103932 lbs.

SPA = 0. 47654912701 \* \$29.21 \* (103,932/100)

SPA = 0. 47654912701 \* \$29.21 \*1,039.32

SPA = \$14,467.33 Pay Adjustment to Contractor for Reinforced Concrete Deck Slab (Category 1) at Station 107+45.55 -L-

#### **PROJECT SPECIAL PROVISIONS**

#### **ROADWAY**

#### **CLEARING AND GRUBBING - METHOD II:**

(9-17-02) (Rev.8-18-15)

Perform clearing on this project to the limits established by Method "II" shown on Standard Drawing No. 200.02 of the *2018 Roadway Standard Drawings*. Conventional clearing methods may be used except where permit drawings or conditions have been included in the proposal which require certain areas to be cleared by hand methods.

#### **BUILDING REMOVAL:**

(1-1-02) (Rev. 11-15-16)

215

SP2 R15 C

Remove the buildings and appurtenances listed below in accordance with Section 215 of the 2018 Standard Specifications:

Parcel 094 Rt. Of Survey Station 241+00 -L-2SFD

Parcel 107 Rt. Of Survey Station 306+00 -L-1SFD

Parcel 109 Rt. Of Survey Station 316+00 -L-Barn

Parcel 109 Lt. Of Survey Station 315+00 -L-1SFD

Parcel 110 Rt. Of Survey Station 322+00 -L-1SFD Abandoned

Parcel 112 Lt. Of Survey Station 325+00 -L-Cabin

Parcel 118 Rt. Of Survey Station 334+00 -L-1SFD

Parcel 121 Lt. Of Survey Station 336+00 -L-1SFD Abandoned SP2 R02A

Parcel 134A Rt. Of Survey Station 386+00 -L-2SFD

Parcel 135 Lt. Of Survey Station 388+00 -L-2SFD

Parcel 137 Lt. Of Survey Station 391+00 -L-1SFBuilding

Parcel 137 Lt. Of Survey Station 395+00 -L-Shed

Parcel 137 Lt. Of Survey Station 396+00 -L-Shed

Parcel 137 Lt. Of Survey Station 398+00 -L-Barn

Parcel 137 Lt. Of Survey Station 398+00 -L-Barn

Parcel 137 Lt. Of Survey Station 398+00 -L-Barn

Parcel 140A Rt. Of Survey Station 400+00 -L-2SFD

Parcel 142 Lt. Of Survey Station 419+00 -L-2SFBarn

Parcel 144 Rt. Of Survey Station 427+00 -L-Barn

Parcel 161 Lt. Of Survey Station 476+00 -L-2SFD Parcel 161 Lt. Of Survey Station 477+00 -L-Barn

Parcel 175A Lt. Of Survey Station 514+00 -L-1SBKD

Parcel 184 Rt. Of Survey Station 551+00 -L-Barn

When the description of the work for an item indicates a building partially inside and partially outside the right of way and/or construction area, but does not require the building to be cut off, the entire building shall be removed.

#### **DRAINING PONDS:**

The contractor shall drain the ponds on this project at the locations designated as such on the plans. The proposed method of draining ponds shall be approved by the Engineer.

The proposed method cannot result in fish kills in downstream waters. Fish in the ponds cannot be relocated to public waters including streams, public lakes and private ponds with streams flowing into or out of the ponds.

Pond dams shall not be breached until the pond is drained. Pond bottoms will be stabilized as shown on the plans and may require adjustment after drainage.

Seeding and mulching of ponds as required on the plans shall be accomplished in accordance with the provision contained elsewhere in these special provisions.

No direct payment will be made for the work of draining the ponds as the cost of the work will be considered incidental to other work being paid for by the various items in the contract. Payment for satisfactorily installed erosion control measures will be paid for at the contract unit prices for the items involved.

#### **REPAIRS TO EXISTING ROADS:**

The Contractor is advised that as part of this contract, he will be required to maintain and resurface existing roads adjacent to this project that are used by the Contractor for hauling materials and/or equipment as directed by the Engineer. At the preconstruction conference, the Contractor shall present a detailed plan of his operations including the use of any existing roads for transporting materials to and from the project. Any existing road which is not posted with weight limits less than the legal weight limit and utilized as described above will be maintained in a safe and passable condition as directed by the Engineer. Repair and maintenance of these existing roads will be paid for at the contract unit prices for the various items involved except as follows:

The existing weight limit, if less than legal weight limit, on existing roads may be removed if requested; however, the Contractor will be responsible for maintaining these roads at his own expense in accordance with Article 105-15 of the *Standard Specifications*.

### **TEMPORARY DETOURS:**

(7-1-95) (Rev. 11-19-13)

1101

SP2 R30B

Construct temporary detours required on this project in accordance with the typical sections in the plans or as directed.

After the detours have served their purpose, remove the portions deemed unsuitable for use as a permanent part of the project as directed by the Engineer. Salvage and stockpile the aggregate base course removed from the detours at locations within the right of way, as directed by the Engineer, for removal by State Forces. Place pavement and earth material removed from the detour in embankments or dispose of in waste areas furnished by the Contractor.

Such prices and payments will be full compensation for constructing the detours and for the work of removing, salvaging, and stockpiling aggregate base course; removing pipe culverts; and for placing earth material and pavement in embankments or disposing of earth material and pavement in waste areas.

#### **SHOULDER AND FILL SLOPE MATERIAL:**

(5-21-02)

235, 560

SP2 R45 B

#### Description

Perform the required shoulder and slope construction for this project in accordance with the applicable requirements of Section 560 and Section 235 of the *2018 Standard Specifications*.

#### **Measurement and Payment**

When the Contractor elects to obtain material from an area located beneath a proposed fill sections which does not require excavation for any reason other than to generate acceptable shoulder and fill slope material, the work of performing the excavation will be considered incidental to the item of *Borrow Excavation* or *Shoulder Borrow*. If there is no pay item for *Borrow* or *Shoulder Borrow* in the contract, this work will be considered incidental to *Unclassified Excavation*. Stockpile the excavated material in a manner to facilitate measurement by the Engineer. Fill the void created by the excavation of the shoulder and fill slope material with suitable material. Payment for material used from the stockpile will be made at the contract unit price for *Borrow Excavation* or *Shoulder Borrow*, then the material will be paid for at the contract unit price for *Unclassified Excavation*. The material used to fill the void created by the excavation of the shoulder and fill slope material will be paid for at the contract unit price for *Unclassified Excavation*. The material used to fill the void created by the excavation of the shoulder and fill slope material will be paid for at the contract unit price for *Unclassified Excavation*. The material used to fill the void created by the excavation of the shoulder and fill slope material slope material will be made at the

contract unit price for *Unclassified Excavation*, *Borrow Excavation*, or *Shoulder Borrow*, depending on the source of the material.

Material generated from undercut excavation, unclassified excavation or clearing and grubbing operations that is placed directly on shoulders or slope areas, will not be measured separately for payment, as payment for the work requiring the excavation will be considered adequate compensation for depositing and grading the material on the shoulders or slopes.

When undercut excavation is performed at the direction of the Engineer and the material excavated is found to be suitable for use as shoulder and fill slope material, and there is no area on the project currently prepared to receive the material generated by the undercut operation, the Contractor may construct a stockpile for use as borrow at a later date. Payment for the material used from the stockpile will be made at the contract unit price for *Borrow Excavation* or *Shoulder Borrow*.

When shoulder material is obtained from borrow sources or from stockpiled material, payment for the work of shoulder construction will be made at the contract unit price per cubic yard for *Borrow Excavation* or *Shoulder Borrow* in accordance with the applicable provisions of Section 230 or Section 560 of the *2018 Standard Specifications*.

# **MANUFACTURED QUARRY FINES IN EMBANKMENTS:**

(01-17-17)

SP02 R72

# Description

This specification addresses the use of manufactured quarry fines that are not classified as select materials. The specification allows the Contractor an option, with the approval of the Engineer, to use manufactured quarry fines (MQFs) in embankments as a substitute for conventional borrow material. Furnish and place geotextile for pavement stabilization in accordance with the Geotextile for Pavement Stabilization special provision and detail. Geotextile for pavement stabilization is required to prevent pavement cracking and provide separation between the subgrade and pavement section at embankment locations where manufactured quarry fines are utilized and as directed by the Engineer.

#### Materials

Manufactured Quarry Fines.

Site specific approval of MQFs material will be required prior to beginning construction as detailed in the preconstruction requirements of this provision.

The following MQFs are unacceptable:

- (A) Frozen material,
- (B) Material with a maximum dry unit weight of less than 90 pounds per cubic foot when tested in accordance with AASHTO T-99 Method A or C.
- (C) Material with greater than 80% by weight Passing the #200 sieve

Collect and transport MQFs in a manner that will prevent nuisances and hazards to public health and safety. Moisture condition the MQFs as needed and transport in covered trucks to prevent dusting. If MQFs are blended with natural earth material, follow Borrow Criteria in Section 1018 of the *Standard Specifications*.

# Geotextiles

Areas of embankment where MQFs are incorporated, Geotextile for Pavement Stabilization shall be used. If the Geotextile for Pavement Stabilization special provision is not included elsewhere in this contract, then it along with a detail will be incorporated as part of the contractors request to use. Notification of subgrade elevation, sampling and waiting period as required in the Construction Methods section of the Geotextile for Pavement Stabilization special provision are not required.

# **Preconstruction Requirements**

When MQFs are to be used as a substitute for earth borrow material, request written approval from the Engineer at least ninety (90) days in advance of the intent to use MQFs and include the following details:

- (A) Description, purpose and location of project.
- (B) Estimated start and completion dates of project.
- (C) Estimated volume of MQFs to be used on project with specific locations and construction details of the placement.
- (D) The names, address, and contact information for the generator of the MQFs.
- (E) Physical location of the site at which the MQFs were generated.

The Engineer will forward this information to the State Materials Engineer for review and material approval.

# **Construction Methods**

Place MQFs in the core of the embankment section with at least 4 feet of earth cover to the outside limits of the embankments or subgrade.

Construct embankments by placing MQFs in level uniform lifts with no more than a lift of 10 inches and compacted to at least a density of 95 percent as determined by test methods in AASHTO T-99, Determination of Maximum Dry Density and Optimum Moisture Content, Method A or C depending upon particle size of the product. Provide a moisture content at the time of compaction of within 4 percent of optimum but not greater than one percent above optimum as determined by AASHTO T-99, Method A or C.

Areas of embankment where MQFs are incorporated, Geotextile for Pavement Stabilization shall be used. See Geotextile for Pavement Stabilization special provision for geotextile type and construction method.

Section

1000-6

#### **Measurement and Payment**

*Borrow Excavation* will be measured by truck volume and paid in cubic yards in accordance with Article 230-5 of the *2018 Standard Specifications*. As an alternate weigh tickets can be provided and payment made by converting weight to cubic yards based on the verifiable unit weight. Where the pay item of *Geotextile for Pavement Stabilization* is included in the original contract the material will be measured and paid in square yards (see Geotextile for Pavement Stabilization is not included in the original contract the original contract then no payment will be made for this item and will be considered incidental to the use of MQFs in embankment.

#### **FLOWABLE FILL:**

(9-17-02) (Rev 1-17-12)

300, 340, 1000, 1530, 1540, 1550

SP3 R30

# Description

This work consists of all work necessary to place flowable fill in accordance with these provisions, the plans, and as directed.

#### Materials

Refer to Division 10 of the 2018 Standard Specifications.

**Item** Flowable Fill

**Construction Methods** 

Discharge flowable fill material directly from the truck into the space to be filled, or by other approved methods. The mix may be placed full depth or in lifts as site conditions dictate. The Contractor shall provide a method to plug the ends of the existing pipe in order to contain the flowable fill.

#### **Measurement and Payment**

At locations where flowable fill is called for on the plans and a pay item for flowable fill is included in the contract, *Flowable Fill* will be measured in cubic yards and paid as the actual number of cubic yards that have been satisfactorily placed and accepted. Such price and payment will be full compensation for all work covered by this provision including, but not limited to, the mix design, furnishing, hauling, placing and containing the flowable fill.

Payment will be made under:

**Pay Item** Flowable Fill **Pay Unit** Cubic Yard **R-8** 

#### **CORRUGATED ALUMINUM ALLOY CULVERT PIPE:**

(9-21-21)

305, 310

Revise the Standard Specifications as follows:

Page 3-5, Article 305-2, MATERIALS, add the following after line 16:

Item	Section
Waterborne Paint	1080-9
Hot Bitumen	1081-3

Page 3-5, Article 305-3, CONSTRUCTION METHODS, add the following after line 24:

Coating must be applied to the aluminum when in contact with concrete. Immediately prior to coating, aluminum surfaces to be coated shall be cleaned by a method that will remove all dirt, oil, grease, chips, and other foreign substances. Aluminum to be coated shall be given one coat of suitable quality coating such as:

Approved waterborne paint (Section 1080-9) Approved Hot Bitumen (Section 1081-3)

Other coating materials may be submitted to the Engineer for approval.

Page 3-7, Article 310-6, MEASUREMENT AND PAYMENT, lines 6-11, delete the fourth sentence and replace with the following:

Select bedding and backfill material and coating will be included in the cost of the installed pipe. Such price and payment will be full compensation for all materials, labor, equipment, and other incidentals necessary to complete the work.

#### **POLYPROPYLENE CULVERT PIPE:**

(8-20-19)

305,310

SP3 R35

Revise the 2018 Standard Specifications as follows:

Page 3-5, Article 305-1 DESCRIPTION, lines 12-14, replace with the following:

Where shown in the plans, the Contractor may use reinforced concrete pipe, aluminum alloy pipe, aluminized corrugated steel pipe, HDPE pipe, Polypropylene Pipe, or PVC pipe in accordance with the following requirements.

Page 3-5, Article 305-2 MATERIALS, add the following after line 16:

Item	Section
Polypropylene Pipe	1032-9

Page 3-6, Article 310-2 MATERIALS, add the following after line 9:

Item	Section
Polypropylene Pipe	1032-9

SP3 R34

**Page 3-6, Article 310-4 SIDE DRAIN PIPE,** lines 24-25, replace the first sentence of the second paragraph with the following:

Where shown in the plans, side drain pipe may be Class II reinforced concrete pipe, aluminized corrugated steel pipe, corrugated aluminum alloy pipe, polypropylene pipe, HDPE pipe or PVC pipe.

**Page 3-7, Article 310-5 PIPE END SECTIONS**, lines 2-4, replace the second sentence with the following:

Both corrugated steel and concrete pipe end sections will work on concrete pipe, corrugated steel pipe, polypropylene pipe, and HDPE smooth lined corrugated plastic pipe.

Page 3-7, Article 310-6 MEASUREMENT AND PAYMENT, add the following after line 14:

Pay Item " Polypropylene Pipe Pay Unit

Linear Foot

#### Page 10-60, add Article 1032-9:

#### (A) General

Use polypropylene pipe from sources participating in the Department's Polypropylene Pipe QA/QC Program. A list of participating sources is available from the Materials and Tests Unit. The Department will remove a manufacturer of polypropylene pipe from this program if the monitoring efforts indicated that non-specification material is being provided or test procedures are not being followed.

Use polypropylene culvert pipe that meets AASHTO M 330 for Type S or Type D, or ASTM F2881 or ASTM F2764 Double or Triple wall; and has been evaluated by NTPEP.

#### (B) End Treatments, Pipe Tees and Elbows

End treatments, pipe tees and elbows shall meet AASHTO M 330, Section 7.7, or ASTM F2764, Section 6.6.

#### (C) Marking

Clearly mark each section of pipe, end section, tee and elbow and other accessories according to the Department's Polypropylene Pipe QC/QA Program:

(1) AASHTO or ASTM Designation

(2) The date of manufacture

(3) Name or trademark of the manufacturer

When polypropylene pipe, end sections, tees and elbows have been inspected and accepted a sticker will be applied to the inside of the pipe. Do no use pipe sections, flared end

SP4 R02A

sections, tees or elbows which do not have this seal of approval.

# C.S. SLOTTED DRAIN:

#### Description

Furnish and install \_\_\_ C. S. Slotted Drain, \_\_ Thick, that has been fabricated in accordance with the requirements of Section 310 of the *Standard Specifications* and the details in the plans. Install the slotted drain in accordance with the requirements of Section 300 of the *Standard Specifications* except as noted in this provision. Embed the slotted drain in a bedding of lean grout, consisting of a mixture of 1 part portland cement to 6 parts of mortar sand with no more water added than is necessary to make a workable mixture.

#### **Measurement and Payment**

<u>"</u>*C. S. Slotted Drain,* <u>"</u>" will be measured and paid for as the actual number of linear feet of slotted drain which have been incorporated into the completed and accepted work. Measurement will be made in accordance with Article 310-6. Such price and payment will be full compensation for all work, including but not limited to furnishing, hauling, placing the slotted drain, bedding the drain in grout, making all joint connections, all excavation and backfill.

Payment will be made under:

Pay Item	<b>Pay Unit</b>
" C. S. Slotted Drain," Thick	Linear Foot
BRIDGE APPROACH FILLS:	

(10-19-10) (Rev. 1-16-18)

#### Description

Bridge approach fills consist of backfilling behind bridge end bents with select material or aggregate to support all or portions of bridge approach slabs. Install drains to drain water from bridge approach fills and geotextiles to separate approach fills from embankment fills, ABC and natural ground as required. For bridge approach fills behind end bents with mechanically stabilized earth (MSE) abutment walls, reinforce bridge approach fills in accordance with the contract, accepted submittals and 2018 Roadway Standard Drawing Nos. 422.01 or 422.02 or Roadway Detail Drawing No. 422D10.

422

Define bridge approach fill types as follows:

*Approach Fills* – Bridge approach fills in accordance with 2018 Roadway Standard Drawing Nos. 422.01 or 422.02 or Roadway Detail Drawing No. 422D10;

*Standard Approach Fill* – Type I Standard Bridge Approach Fill in accordance with 2018 Roadway Standard Drawing No. 422.01;

Modified Approach Fill - Type II Modified Bridge Approach Fill in accordance with 2018

Roadway Standard Drawing No. 422.02 and

*Reinforced Approach Fill* – Type III Reinforced Bridge Approach Fill in accordance with Roadway Detail Drawing No. 422D10.

#### Materials

Refer to Division 10 of the 2018 Standard Specifications.

Item	Section
Geotextiles, Type 1	1056
Portland Cement Concrete	1000
Select Materials	1016
Subsurface Drainage Materials	1044

Provide Type 1 geotextile for separation geotextiles and Class B concrete for outlet pads. Use Class V or Class VI select material for standard and modified approach fills. For an approach fill behind a bridge end bent with an MSE abutment wall, backfill the reinforced approach fill with the same aggregate type approved for the reinforced zone in the accepted MSE wall submittal. For MSE wall aggregate, reinforcement and connector materials, see the *Mechanically Stabilized Earth Retaining Walls* provision. Provide PVC pipes, fittings and outlet pipes for subsurface drainage materials. For PVC drain pipes, use pipes with perforations that meet AASHTO M 278.

#### **Construction Methods**

Excavate as necessary for approach fills in accordance with the contract. Notify the Engineer when foundation excavation is complete. Do not place separation geotextiles or aggregate until approach fill dimensions and foundation material are approved.

For reinforced approach fills, cast MSE wall reinforcement or connectors into end bent cap backwalls within 3" of locations shown in the accepted MSE wall submittals. Install MSE wall reinforcement with the orientation, dimensions and number of layers shown in the accepted MSE wall submittals. If a reinforced approach fill is designed with geogrid reinforcement embedded in an end bent cap, cut geogrids to the required lengths and after securing ends of geogrids in place, reroll and rewrap portions of geogrids not embedded in the cap to protect geogrids from damage. Before placing aggregate, pull geosynthetic reinforcement taut so that it is in tension and free of kinks, folds, wrinkles or creases.

Attach separation geotextiles to end bent cap backwalls and wing walls with adhesives, tapes or other approved methods. Overlap adjacent separation geotextiles at least 18" with seams oriented parallel to the roadway centerline. Hold geotextiles in place with wire staples or anchor pins as needed. Contact the Engineer when existing or future obstructions such as foundations, pavements, pipes, inlets or utilities will interfere with separation geotextiles or MSE wall reinforcement.

Install continuous perforated PVC drain pipes with perforations pointing down in accordance with 2018 Roadway Standard Drawing Nos. 422.01 or 422.02. Connect drain pipes to outlet pipes just beyond wing walls. Connect PVC pipes, fittings and outlet pipes with solvent cement in

accordance with Article 815-3 of the 2018 Standard Specifications and place outlet pads in accordance with 2018 Roadway Standard Drawing No. 815.03.

Install drain pipes so water drains towards outlets. If the groundwater elevation is above drain pipe elevations, raise drains up to maintain positive drainage towards outlets. Place pipe sleeves in or under wing walls so water drains towards outlets. Use sleeves that can withstand wing wall loads.

Place select material or aggregate in 8" to 10" thick lifts. Compact fine aggregate for reinforced approach fills in accordance with Subarticle 235-3(C) of the *2018 Standard Specifications* except compact fine aggregate to a density of at least 98%. Compact select material for standard or modified approach fills and coarse aggregate for reinforced approach fills with a vibratory compactor to the satisfaction of the Engineer. Do not displace or damage geosynthetics, MSE wall reinforcement or drains when placing and compacting select material or aggregate. End dumping directly on geosynthetics is not permitted. Do not operate heavy equipment on geosynthetics or drain pipes until they are covered with at least 8" of select material or aggregate. Replace any damaged geosynthetics or drains to the satisfaction of the Engineer. When approach fills extend beyond bridge approach slabs, wrap separation geotextiles over select material or aggregate as shown in 2018 Roadway Standard Drawing No. 422.01 or 2018 Roadway Detail Drawing No. 422D10.

# **Measurement and Payment**

*Type I Standard Approach Fill, Station* \_\_\_\_\_, *Type II Modified Approach Fill, Station* \_\_\_\_\_ and *Type III Reinforced Approach Fill, Station* \_\_\_\_\_ will be paid at the contract lump sum price. The lump sum price for each approach fill will be full compensation for providing labor, tools, equipment and approach fill materials, excavating, backfilling, hauling and removing excavated materials, installing geotextiles and drains, compacting backfill and supplying select material, aggregate, separation geotextiles, drain pipes, pipe sleeves, outlet pipes and pads and any incidentals necessary to construct approach fills behind bridge end bents.

The contract lump sum price for *Type III Reinforced Approach Fill, Station* \_\_\_\_\_ will also be full compensation for supplying and connecting MSE wall reinforcement to end bent caps but not designing MSE wall reinforcement and connectors. The cost of designing reinforcement and connectors for reinforced approach fills behind bridge end bents with MSE abutment walls will be incidental to the contract unit price for *MSE Retaining Wall No.* \_\_\_.

Payment will be made under:

Pay Item	Pay Unit
Type I Standard Approach Fill, Station	Lump Sum
Type II Modified Approach Fill, Station	Lump Sum
Type III Reinforced Approach Fill, Station	Lump Sum

# **R-13**

#### ALTERNATE BRIDGE APPROACH FILLS FOR INTEGRAL ABUTMENTS:

(1-16-18)

422

SP4 R02B

### Description

At the Contractors option, use Type A Alternate Bridge Approach Fills instead of Type I or II Bridge Approach Fills to support bridge approach slabs for integral bridge abutments. An alternate bridge approach fill consists of constructing an approach fill with a temporary geotextile wall before placing all or a portion of the concrete for the backwall and wing walls of the integral end bent cap. The temporary geotextile wall is designed for a crane surcharge, remains in place and aligned so the wall face functions as a form for the end bent cap backwall and wing walls. Install drains, welded wire facing and geotextiles and backfill approach fills and temporary walls with select material as required. Define "geotextiles" as separation or reinforcement geotextiles, "temporary wall" as a temporary geotextile wall and "alternate approach fill" as a Type A Alternate Bridge Approach Fill in accordance with 2018 Roadway Standard Drawing No. 422.03.

#### Materials

Refer to Division 10 of the 2018 Standard Specifications.

Item	Section
Geotextiles	1056
Portland Cement Concrete	1000
Select Materials	1016
Subsurface Drainage Materials	1044
Welded Wire Reinforcement	1070-3

For temporary walls, use welded wire reinforcement for welded wire facing and Type 5 geotextile for reinforcement geotextiles. Use Type 5 geotextile with lengths and an ultimate tensile strength as shown in 2018 Roadway Standard Drawing No. 422.03. Provide Type 1 geotextile for separation geotextiles and Class B concrete for outlet pads. Use Class V or Class VI select material for alternate approach fills and temporary walls. Provide PVC pipes, fittings and outlet pipes for subsurface drainage materials. For PVC drain pipes, use pipes with perforations that meet AASHTO M 278.

#### **Construction Methods**

Excavate as necessary for alternate approach fills and temporary walls in accordance with the contract. Notify the Engineer when foundation excavation is complete. Do not place geotextiles until approach fill dimensions and foundation material are approved.

Install geotextiles as shown in 2018 Roadway Standard Drawing No. 422.03. Attach separation geotextiles to end bent cap backwalls and wing walls as needed with adhesives, tapes or other approved methods. Overlap adjacent geotextiles at least 18" with seams oriented parallel to the roadway centerline. Hold geotextiles in place with wire staples or anchor pins as needed. Contact the Engineer when existing or future obstructions such as foundations, pavements, pipes, inlets or utilities will interfere with geotextiles.

Install continuous perforated PVC drain pipes with perforations pointing down in accordance with 2018 Roadway Standard Drawing No. 422.03. Connect drain pipes to outlet pipes just beyond

wing walls. Connect PVC pipes, fittings and outlet pipes with solvent cement in accordance with Article 815-3 of the *2018 Standard Specifications* and place outlet pads in accordance with 2018 Roadway Standard Drawing No. 815.03.

Install drain pipes so water drains towards outlets. If the groundwater elevation is above drain pipe elevations, raise drains up to maintain positive drainage towards outlets. Place pipe sleeves in or under wing walls so water drains towards outlets. Use sleeves that can withstand wing wall loads.

At the Contractor's option, construct bottom portion of integral end bents before temporary walls as shown in 2018 Roadway Standard Drawings No. 422.03. Erect and set welded wire facing so facing functions as a form for the end bent cap backwall. Place welded wire facing adjacent to each other in the horizontal and vertical directions to completely cover the temporary wall face. Stagger welded wire facing to create a running bond by centering facing over joints in the row below.

Wrap reinforcement geotextiles at the temporary wall face in accordance with 2018 Roadway Standard Drawing No. 422.03 and cover geotextiles with at least 3" of select material. Place layers of reinforcement geotextiles within 3" of locations shown in 2018 Roadway Standard Drawing No. 422.03. Before placing select material, pull reinforcement geotextiles taut so they are in tension and free of kinks, folds, wrinkles or creases. Install reinforcement geotextiles with the direction shown in 2018 Roadway Standard Drawing No. 422.03. Do not splice or overlap reinforcement geotextiles so seams are parallel to the temporary wall face.

Place select material in 8" to 10" thick lifts and compact select material with a vibratory compactor to the satisfaction of the Engineer. Do not displace or damage geotextiles or drains when placing and compacting select material. End dumping directly on geotextiles is not permitted. Do not operate heavy equipment on geotextiles or drain pipes until they are covered with at least 8" of select material. Replace any damaged geotextiles or drains to the satisfaction of the Engineer. When alternate approach fills extend beyond bridge approach slabs, wrap separation geotextiles over select material as shown in 2018 Roadway Standard Drawing No. 422.03.

Temporary walls are designed for a surcharge pressure in accordance with 2018 Roadway Standard Drawing No. 422.03. If the crane surcharge will exceed the wall design, contact the Engineer before positioning the crane over reinforcement geotextiles.

#### **Measurement and Payment**

Alternate approach fills will be paid at the contract lump sum for either *Type I Standard Approach Fill, Station* \_\_\_\_\_\_ or *Type II Modified Approach Fill, Station* \_\_\_\_\_\_ based on the approach fill type that the alternate approach fill is replacing. The lump sum price for each approach fill will be full compensation for providing labor, tools, equipment and alternate approach fill materials, excavating, backfilling, hauling and removing excavated materials, constructing temporary walls, installing wall facing, geotextiles and drains, compacting backfill and supplying select material, separation and reinforcement geotextiles, welded wire facing, drain pipes, pipe sleeves, outlet pipes and pads and any incidentals necessary to construct alternate approach fills for integral abutments.

#### **AGGREGATE SUBGRADE:**

(5-15-18)

505

SP5 R8

Revise the 2018 Standard Specifications as follows:

Page 5-8, Article 505-1 DESCRIPTION, lines 4-6, replace the paragraph with the following:

Construct aggregate subgrades in accordance with the contract. Install geotextile for soil stabilization and place Class IV subgrade stabilization at locations shown in the plans and as directed.

Undercut natural soil materials if necessary to construct aggregate subgrades. Define "subbase" as the portion of the roadbed below the Class IV subgrade stabilization. For Type 2 aggregate subgrades, undercut subbases as needed. The types of aggregate subgrade with thickness and compaction requirements for each are as shown below.

**Type 1** – A 6 to 24 inch thick aggregate subgrade with Class IV subgrade stabilization compacted to 92% of AASHTO T 180 as modified by the Department or to the highest density that can be reasonably obtained.

**Type 2** – An 8 inch thick aggregate subgrade on a proof rolled subbase with Class IV subgrade stabilization compacted to 97% of AASHTO T 180 as modified by the Department.

**Page 5-8, Article 505-3 CONSTRUCTION METHODS, line 12**, insert the following after the first sentence of the first paragraph:

For Type 2 aggregate subgrades, proof roll subbases in accordance with Section 260 before installing geotextile for soil stabilization.

**Page 5-8, Article 505-3 CONSTRUCTION METHODS, lines 16-17**, replace the last sentence of the first paragraph with the following:

Compact ABC as required for the type of aggregate subgrade constructed.

**Page 5-8, Article 505-4 MEASUREMENT AND PAYMENT, line 26**, insert the following after the last sentence of the first paragraph:

*Undercut Excavation* of natural soil materials from subbases for Type 2 aggregate subgrades will be measured and paid in accordance with Article 225-7 or 226-3. No measurement will be made for any undercut excavation of fill materials from subbases.

# **STABILIZATION OF COASTAL PLAIN SANDS:**

(11-18-14)

510

SP5 R12

# Description

As directed by the Engineer, stabilize sandy subgrade material with Class IV aggregate to prevent rutting of the subgrade prior to paving directly on the subgrade. Remove material as needed in cut areas prior to placing the Class IV aggregate.

#### Materials

Refer to Division 10.

#### Item

Select Material, Class IV

Use Class IV Select Material for Class IV Aggregate Stabilization.

#### **Construction Methods**

#### **Class IV Aggregate Stabilization**

As directed by the Engineer, place aggregate by end dumping aggregate on approved subgrade soils to provide a working platform and reduce wheel rutting of subgrade material. Place the Class IV aggregate stabilization to a thickness of 2 to 3 inches.

#### Maintenance

Maintain aggregate stabilization in an acceptable condition and minimize the use of heavy equipment on aggregate in order to avoid damaging the subgrade. Provide and maintain drainage ditches and drains as required to prevent entrapping water in aggregate stabilization.

#### **Measurement and Payment**

*Class IV Aggregate Stabilization* will be measured and paid in tons. Aggregate will be measured by weighing in trucks in accordance with Article 106-7. The contract unit price for *Class IV Aggregate Stabilization* will be full compensation for furnishing, hauling, handling, placing, mixing, compacting and maintaining aggregate.

The work to excavate material to place Class IV Aggregate Stabilization below subgrade is considered incidental to the work of placing the aggregate and no separate payment will be made.

Payment will be made under:

**Pay Item** Class IV Aggregate Stabilization

#### PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX: (11-21-00) 620

Price adjustments for asphalt binder for plant mix will be made in accordance with Section 620 of the 2018 Standard Specifications.

The base price index for asphalt binder for plant mix is **\$ 540.45** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **February 1, 2022**.

Section 1016

SP6 R25

Pay Unit

Ton

**R-17** 

#### ASPHALT CONCRETE PLANT MIX PAVEMENTS:

(2-20-18) (Rev.1-15-19)

610, 1012

SP6 R65

Revise the 2018 Standard Specifications as follows:

# **Page 6-14, Table 609-3, LIMITS OF PRECISION FOR TEST RESULTS**, replace with the following:

TABLE 609-3 LIMITS OF PRECISION FOR TEST RESULTS				
Mix Property	Limits of Precision			
25.0 mm sieve (Base Mix)	$\pm 10.0\%$			
19.0 mm sieve (Base Mix)	$\pm 10.0\%$			
12.5 mm sieve (Intermediate & Type P-57)	$\pm 6.0\%$			
9.5 mm sieve (Surface Mix)	$\pm 5.0\%$			
4.75 mm sieve (Surface Mix)	$\pm 5.0\%$			
2.36 mm sieve (All Mixes, except S4.75A)	$\pm 5.0\%$			
1.18 mm sieve (S4.75A)	$\pm 5.0\%$			
0.075 mm sieve (All Mixes)	$\pm 2.0\%$			
Asphalt Binder Content	$\pm 0.5\%$			
Maximum Specific Gravity (Gmm)	$\pm 0.020$			
Bulk Specific Gravity (G <sub>mb</sub> )	$\pm 0.030$			
TSR	± 15.0%			
QA retest of prepared QC Gyratory	$\pm 0.015$			
Compacted Volumetric Specimens	± 0:015			
Retest of QC Core Sample	$\pm$ 1.2% (% Compaction)			
Comparison QA Core Sample	$\pm 2.0\%$ (% Compaction)			
QA Verification Core Sample	$\pm 2.0\%$ (% Compaction)			
Density Gauge Comparison of QC Test	$\pm 2.0\%$ (% Compaction)			
QA Density Gauge Verification Test	$\pm 2.0\%$ (% Compaction)			

**Page 6-17, Table 610-1, MIXING TEMPERATURE AT THE ASPHALT PLANT**, replace with the following:

TABLE 610-1 MIXING TEMPERATURE AT THE ASPHALT PLANT			
Binder Grade JMF Temperature			
PG 58-28; PG 64-22	250 - 290°F		
PG 76-22	300 - 325°F		

Page 6-17, Subarticle 610-3(C), Job Mix Formula (JMF), lines 38-39, delete the fourth paragraph.

**Page 6-18, Subarticle 610-3(C), Job Mix Formula (JMF), line 12,** replace "SF9.5A" with "S9.5B".

Page 6-18, Table 610-3, MIX DESIGN CRITERIA, replace with the following:

	TABLE 610-3 MIX DESIGN CRITERIA								
Mix	Design	Binder	Compa Lev	action vels	on Max. Rut	Volumetric Properties <sup>B</sup>			
Туре	ESALs millions A	PG Grade	Gm	m @	Depth	VMA VTM VFA %G		%G <sub>mm</sub>	
	minons	Grade	Nini	Ndes	(mm)	% Min.	%	MinMax.	(a) Nini
S4.75A	< 1	64 - 22	6	50	11.5	16.0	4.0 - 6.0	65 - 80	≤ 91.5
S9.5B	0 - 3	64 - 22	6	50	9.5	16.0	3.0 - 5.0	70 - 80	≤ 91.5
S9.5C	3 - 30	64 - 22	7	65	6.5	15.5	3.0 - 5.0	65 - 78	≤ 90.5
S9.5D	> 30	76 - 22	8	100	4.5	15.5	3.0 - 5.0	65 - 78	$\leq 90.0$
I19.0C	ALL	64 - 22	7	65	-	13.5	3.0 - 5.0	65 - 78	≤ 90.5
B25.0C	ALL	64 - 22	7	65	-	12.5	3.0 - 5.0	65 - 78	≤ 90.5
	Design Parameter				Design Criteria				
All Mix	All Mix Dust to Binder Ratio (P <sub>0.075</sub> / P <sub>be</sub> )				0.6 - 1.4 <sup>C</sup>				
Types	Tensi	Tensile Strength Ratio (TSR) <sup>D</sup> 85% Min. <sup>E</sup>							

A. Based on 20 year design traffic.

B. Volumetric Properties based on specimens compacted to N<sub>des</sub> as modified by the Department.

C. Dust to Binder Ratio  $(P_{0.075} / P_{be})$  for Type S4.75A is 1.0 - 2.0.

D. NCDOT-T-283 (No Freeze-Thaw cycle required).

E. TSR for Type S4.75A & B25.0C mixes is 80% minimum.

# **Page 6-19, Table 610-5, BINDER GRADE REQUIREMENTS (BASED ON RBR%)**, replace with the following:

# TABLE 610-5 BINDER GRADE REQUIREMENTS (BASED ON RBR%) 0(DDD < 200(</td> 210(< 200(</td>

Mix Type	%RBR <u>&lt;</u> 20%	21% <u>≤</u> %RBR <u>≤</u> 30%	%RBR <u>≥</u> 30%
S4.75A, S9.5B,			
S9.5C, I19.0C,	PG 64-22	PG 64-22 <sup>A</sup>	PG-58-28
B25.0C			
S9.5D, OGFC	PG 76-22 <sup>B</sup>	n/a	n/a

**A.** If the mix contains any amount of RAS, the virgin binder shall be PG 58-28.

B. Maximum Recycled Binder Replacement (%RBR) is 18% for mixes using PG 76-22 binder.

Page 6-20, Table 610-6, PLACEMENT TEMPERATURES FOR ASPHALT, replace with	
the following:	

TABLE 610-6 PLACEMENT TEMPERATURES FOR ASPHALT					
Asphalt Concrete Mix Type	Asphalt Concrete Mix Type Minimum Surface and Air Temperature				
B25.0C	35°F				
I19.0C	35°F				
S4.75A, S9.5B, S9.5C	40°F <sup>A</sup>				
S9.5D	50°F				

A. For the final layer of surface mixes containing recycled asphalt shingles (RAS), the minimum surface and air temperature shall be 50°F.

**Page 6-21, Article 610-8, SPREADING AND FINISHING, lines 34-35,** delete the second sentence and replace with the following:

Use an MTV for all surface mix regardless of binder grade on Interstate, US Routes, and NC Routes (primary routes) that have 4 or more lanes and median divided.

**Page 6-21, Article 610-8, SPREADING AND FINISHING, lines 36-38,** delete the fourth sentence and replace with the following:

Use MTV for all ramps, loops, Y-line that have 4 or more lanes and are median divided, full width acceleration lanes, full width deceleration lanes, and full width turn lanes that are greater than 1000 feet in length.

# Page 6-23, Table 610-7, DENSITY REQUIREMENTS, replace with the following:

TABLE 610-7 DENSITY REQUIREMENTS				
Mix TypeMinimum % G <sub>mm</sub> (Maximum Specific Gravity)				
S4.75A	85.0 <sup>A</sup>			
S9.5B	90.0			
S9.5C, S9.5D, I19.0C, B25.0C	92.0			

**A.** Compaction to the above specified density will be required when the S4.75A mix is applied at a rate of 100 lbs/sy or higher.

**Page 6-24, Article 610-13, FINAL SURFACE TESTING, lines 35-36,** delete the second sentence and replace with the following:

Final surface testing is not required on ramps, loops and turn lanes.

**Page 6-26, Subarticle 610-13(A)(1), Acceptance for New Construction, lines 29-30,** delete the second sentence and replace with the following:

Areas excluded from testing by the profiler may be tested using a 10-foot straightedge in accordance with Article 610-12.

Page 6-27, Subarticle 610-13(B), Option 2- North Carolina Hearne Straightedge, lines 41-46, delete the eighth and ninth sentence of this paragraph and replace with the following:

Take profiles over the entire length of the final surface travel lane pavement exclusive of structures, approach slabs, paved shoulders, tapers, or other irregular shaped areas of pavement, unless otherwise approved by the Engineer. Test in accordance with this provision all mainline travel lanes, full width acceleration or deceleration lanes and collector lanes.

Page 6-28, Subarticle 610-13(B), Option 2- North Carolina Hearne Straightedge, lines 1-2, delete these two lines.

Page 6-32, Article 610-16 MEASUREMENT AND PAYMENT, replace with the following:

Pay Item	Pay Unit
Asphalt Concrete Base Course, Type B25.0C	Ton
Asphalt Concrete Intermediate Course, Type I19.0C	Ton
Asphalt Concrete Surface Course, Type S4.75A	Ton
Asphalt Concrete Surface Course, Type S9.5B	Ton
Asphalt Concrete Surface Course, Type S9.5C	Ton

**R-20** 

Asphalt Concrete Surface Course, Type S9.5D

Ton

**Page 10-30, Table 1012-1, AGGREGATE CONSENSUS PROPERTIES,** replace with the following:

Mix Type	Coarse Aggregate Angularity <sup>B</sup>	Fine Aggregate Angularity % Minimum	Sand Equivalent % Minimum	Flat and Elongated 5 : 1 Ratio % Maximum
Test Method	ASTM D5821	AASHTO T 304	AASHTO T 176	ASTM D4791
S4.75A; S9.5B	75 / -	40	40	-
\$9.5C; I19.0C; B25.0C	95 / 90	45	45	10
S9.5D	100 / 100	45	50	10
OGFC	100 / 100	45	45	10
UBWC	100 / 85	45	45	10

# TABLE 1012-1 AGGREGATE CONSENSUS PROPERTIES<sup>A</sup>

A. Requirements apply to the design aggregate blend.

**B**. 95 / 90 denotes that 95% of the coarse aggregate has one fractured face and 90% has 2 or more fractured faces.

# FIELD OFFICE (Lump Sum):

(6-1-07)(Rev. 2-15-21)

#### Description

This work consists of furnishing, erecting, equipping, maintaining, and removing a field office for the exclusive use of Department Engineers and Inspectors at a location on the project approved by the Engineer. Provide a field office that complies with the current ADA Design and Accessibility Standards, the National Electric Code, local, state, and federal regulations, and the following requirements.

# Procedures

The field office and equipment will remain the property of the Contractor upon completion of the contract. The field office shall be separated from buildings and trailers used by the Contractor and shall be erected and functional as an initial operation. Failure to have the field office functional when work first begins on the project and maintained, as determined by the Engineer, throughout the life of the project will result in withholding payment of the Contractor's monthly progress estimate. Maintain the field office in an operational state throughout the duration of the project. Remove the field office when directed by the Engineer.

SPI 8-01

Provide a field office that is weatherproof, tightly floored and roofed, constructed with an air space above the ceiling for ventilation, supported above the ground, has a width of at least 10 feet, and the floor-to-ceiling height that is at least 7 feet 6 inches. Provide inside walls and a ceiling constructed of plywood, fiber board, gypsum board, or other suitable materials. Have the exterior walls, ceiling, and floor insulated.

Provide a field office with at least 1,000 square feet of floor space and that is equipped with the following:

# <u>Item</u>

Telephone service.

Internet Connection Service with modem for Wi-Fi with 2 Data ports in all rooms (with exception of kitchenette and bathrooms).

#### Number

# <u>Item</u>

- 1 Double-pedestal desk (approximately 60 by 34 inches, at least 2,000 square inches).
- 1 Plan and drafting table (approximately 30 by 96 inches) with adjustable stool.
- 2 Computer tables at least 48 by 30 by 29 inches.
- 1 Plan rack for 24 by 36 inch drawings with 6 plan clamps.
- 2 4-drawer fire protection file, 15 inch drawer width, minimum UL rating of Class 350.
- 6 Adjustable five-leg base rolling office chairs.
- 1 Wastebasket per room.
- 1 Telephone.
- 1 Print/Copy/Scan/Fax machine (11 inch x 17 inch copies).

#### Windows and Doors

Provide a field office with at least three windows with blinds, each having an area of at least 540 square inches, capable of being opened and secured from the inside and having at least two exterior passage doors. Provide doors at least 30 inches in width and 78 inches in height. Provide screens for windows and doors. Equip exterior passage doors with locks and furnish at least two keys to the Engineer. Provide accessibility in compliance with the current ADA Design and Accessibility Standards, and the State Building Code and maintain them free from obstructions.

#### Steps

Provide accessibility in compliance with the current ADA Design and Accessibility Standards, and the State Building Code and maintain them free from obstructions.

#### **Storage Facility for Nuclear Gauge**

Provide an outside storage facility for the Department's nuclear gauge. Provide a facility that has at least 64 square feet of floor space, is weatherproof, tightly floored and roofed, and has a tamper resistant key operated lock. The storage facility shall not be located within 10 feet of any other structure including the field office. Furnish at least two keys to the Engineer.

### Lighting, Heating, and Air Conditioning

The field office shall have satisfactory lighting, electrical outlets, heating equipment, an exhaust fan, and an air conditioner connected to an operational power source. Provide at least one lighting fixture in each room and at least one fluorescent light fixture over the plan and drafting table. Furnish electrical current and fuel for heating equipment.

#### **Fire Extinguishers**

Furnish and maintain one fire extinguisher for each exterior passage door. Fire extinguisher may be chemical or dry powder. UL Classification 10-B:C (minimum), suitable for Type A:B:C: fires. Provide, mount, and maintain fire extinguishers in accordance with OSHA Safety and Health Standards.

#### Toilets

Provide a toilet conforming to the requirements of the state and local boards of health or other bodies or courts having jurisdiction in the area. When separate facilities for men and women are not available, place a sign with the words "Rest Room" (with letters at least 1 inch in height) over the doorway, and provide an adequate positive locking system on the inside of the doorway. Maintain responsibility for the water and sewer connections or the installation and connection of a water well and septic tank and drain field. These facilities shall conform to all local and state permits.

#### Utilities

Except for telephone service, make necessary utility and internet connections, maintain utilities and internet connections, pay internet and utility service fees and bills, and handle final disconnection of internet and utilities. Furnish a telephone in each field office and permit the work necessary to install it.

#### **Storage Facility for Test Equipment**

Provide a storage facility, separate from the office for storage of test equipment, other than the nuclear gauge. Provide a facility that has at least 64 square feet of floor space, is weatherproof, tightly floored and roofed, and has a tamper resistant key operated lock. Furnish at least two keys to the Engineer.

#### **Miscellaneous Items**

The field office shall also include the following:

- 1. A certification that the office is free of asbestos and other hazardous materials.
- 2. A broom, dustpan, mop and bucket, and general cleaning supplies.
- 3. Provide and maintain an all-weather parking area for six vehicles, including graveled access to the paved surface.

#### **Measurement and Payment**

Payment at the contract lump sum bid price for *Field Office* will be full compensation for all work covered by this provision including but not limited to furnishing, erecting, equipping, maintaining, and removing the field office as outlined in this provision.

Installation and service fees for the telephone will be paid for by the Department.

Payment will be made under:

**Pay Item** Field Office

AUTOMATED MACHINE GUIDANCE (1-2-11)

801

SP8 R01

Pay Unit

Lump Sum

#### General

This Special Provision contains requirements to be followed if the Contractor elects to use Global Positioning System (GPS) machine control grading and shall be used in conjunction with Section 801 of the *Standard Specifications*. The use of this technology is referenced as Automated Machine Guidance (AMG).

All equipment using AMG shall be able to generate end results that meet the *Standard Specifications*. Perform test sections for each type of work to be completed with AMG to demonstrate that the system has the capability to achieve acceptable results. If acceptable results cannot be achieved, conform to the requirements for conventional stakeout.

The Contractor shall be responsible for all errors resulting from the use of AMG and shall correct deficiencies to the satisfaction of the Engineer at no cost to the Department.

#### Submittals

If the Contractor elects to use AMG, a Digital Terrain Model (DTM) of the design surface and all intermediate surfaces shall be developed and submitted to the Engineer for review.

At least 90 days prior to beginning grading operations, the Contractor shall submit to the Engineer an AMG work plan to include, but not limited to, proposed equipment, control software manufacturer and version, types of work to be completed using AMG, project site calibration report, repetitive calibration methods for construction equipment and rover units to be used for the duration of the project, and local GPS base station to be used for broadcasting differential correction data to rover units (this may include the NC Network RTK). All surveys must be tied to existing project control as established by NCDOT.

#### Inspection

The Engineer will perform quality assurance checks of all work associated with AMG. If it is determined that work is not being performed in a manner that will assure accurate results, the Engineer may require corrective action at no cost to the Department.

The Contractor shall provide the Engineer with one GPS rover unit for use during the duration of the contract. The rover will be loaded with the same model that is used with the AMG and have the same capability as rover units used by the Contractor. The rover will be kept in the possession of the Engineer and will be returned to the Contractor upon completion of the contract. Any maintenance or repairs required for the rover will be the responsibility of the Contractor. Formal training of at least 8 hours shall be provided to the Engineer by the Contractor on the use of the proposed AMG system.

#### **Subgrade and Base Controls**

If the Contractor elects to use AMG for fine grading and placement of base or other roadway materials, the GPS shall be supplemented with a laser or robotic total station. Include details of the proposed system in the AMG work plan. In addition, the following requirements apply for the use of AMG for subgrade and base construction.

Provide control points at intervals along the project not to exceed 1,000 feet. The horizontal position of these points shall be determined by static GPS sessions or by traverse connection from the original base line control points. The elevation of these control points shall be established using differential leveling from project benchmarks, forming closed loops where practical. A copy of all new control point information shall be provided to the Engineer prior to construction activities.

Provide control points and conventional survey grade stakes at 500 foot intervals and at critical points such as, but not limited to, PCs, PTs, superelevation transition points, and other critical points as requested by the Engineer.

Provide hubs at the top of the finished subgrade at all hinge points on the cross section at 500 foot intervals. These hubs shall be established using conventional survey methods for use by the Engineer to check the accuracy of construction.

#### **Measurement and Payment**

No direct payment will be made for work required to utilize this provision. All work will be considered incidental to various grading operations.

#### SUPPLEMENTAL SURVEYING:

(4-20-21)

801

SP8 R03

Revise the 2018 Standard Specifications as follows:

Page 8-7, Article 801-3 MEASUREMENT AND PAYMENT, lines 10-11, replace with the following:

Supplemental Surveying Office Calculations will be paid at the stated price of \$85.00 per hour. Supplemental Field Surveying will be paid at the stated price of \$145.00 per hour. The

#### **GUARDRAIL END UNITS, TYPE - TL-2:**

(10-21-08) (Rev. 7-1-17)

SP8 R64

#### Description

Furnish and install guardrail end units in accordance with the details in the plans, the applicable requirements of Section 862 of the 2018 Standard Specifications, and at locations shown in the plans.

862

#### Materials

Furnish guardrail end units listed on the NCDOT <u>Approved Products List</u> at <u>https://apps.dot.state.nc.us/vendor/approvedproducts/</u> or approved equal.

Prior to installation the Contractor shall submit to the Engineer:

- (A) FHWA acceptance letter for each guardrail end unit certifying it meets the requirements of the AASHTO Manual for Assessing Safety Hardware, Test Level 2 in accordance with Article 106-2 of the *2018 Standard Specifications*.
- (B) Certified working drawings and assembling instructions from the manufacturer for each guardrail end unit in accordance with Article 105-2 of the *2018 Standard Specifications*.

No modifications shall be made to the guardrail end unit without the express written permission from the manufacturer. Perform installation in accordance with the details in the plans, and details and assembling instructions furnished by the manufacturer.

#### **Construction Methods**

Guardrail end delineation is required on all approach and trailing end sections for both temporary and permanent installations. Guardrail end delineation consists of yellow reflective sheeting applied to the entire end section of the guardrail in accordance with Article 1088-3 of the *2018 Standard Specifications* and is incidental to the cost of the guardrail end unit.

#### **Measurement and Payment**

Measurement and payment will be made in accordance with Article 862-6 of the 2018 Standard Specifications.

Payment will be made under:

**Pay Item** Guardrail End Units, Type TL-2 Pay Unit Each **R-26** 

#### <u>GUARDRAIL END UNITS, TYPE - TL-3:</u>

(4-20-04) (Rev. 7-1-17)

862

#### Description

Furnish and install guardrail end units in accordance with the details in the plans, the applicable requirements of Section 862 of the 2018 Standard Specifications, and at locations shown in the plans.

#### Materials

Furnish guardrail end units listed on the NCDOT <u>Approved Products List</u> at <u>https://apps.dot.state.nc.us/vendor/approvedproducts/</u> or approved equal.

Prior to installation the Contractor shall submit to the Engineer:

- (A) FHWA acceptance letter for each guardrail end unit certifying it meets the requirements of the AASHTO Manual for Assessing Safety Hardware, Test Level 3, in accordance with Article 106-2 of the *2018 Standard Specifications*.
- (B) Certified working drawings and assembling instructions from the manufacturer for each guardrail end unit in accordance with Article 105-2 of the *2018 Standard Specifications*.

No modifications shall be made to the guardrail end unit without the express written permission from the manufacturer. Perform installation in accordance with the details in the plans, and details and assembling instructions furnished by the manufacturer.

#### **Construction Methods**

Guardrail end delineation is required on all approach and trailing end sections for both temporary and permanent installations. Guardrail end delineation consists of yellow reflective sheeting applied to the entire end section of the guardrail in accordance with Article 1088-3 of the *2018 Standard Specifications* and is incidental to the cost of the guardrail end unit.

#### **Measurement and Payment**

Measurement and payment will be made in accordance with Article 862-6 of the 2018 Standard Specifications.

Payment will be made under:

**Pay Item** Guardrail End Units, Type TL-3 Pay Unit Each C204498 R-2511

#### GUARDRAIL ANCHOR UNITS AND TEMPORARY GUARDRAIL ANCHOR UNITS: (1-16-2018) 862 SP8 R70

Guardrail anchor units will be in accordance with the details in the plans and the applicable requirements of Section 862 of the 2018 Standard Specifications.

Revise the 2018 Standard Specifications as follows:

#### Page 8-42, Article 862-6 MEASUREMENT AND PAYMENT, add the following:

*Guardrail Anchor Units, Type* \_\_\_\_\_ *and Temporary Guardrail Anchor Units Type* \_\_\_\_ will be measured and paid as units of each completed and accepted. No separate measurement will be made of any rail, terminal sections, posts, offset blocks, concrete, hardware or any other components of the completed unit that are within the pay limits shown in the plans for the unit as all such components will be considered to be part of the unit.

Payment will be made under:

Pay Item	Pay Unit
Guardrail Anchor Units, Type	Each
Temporary Guardrail Anchor Units, Type	Each

# **PORTLAND CEMENT CONCRETE PRODUCTION AND DELIVERY:**

(9-15-20)

1000, 1014, 1024

SP10 R01

Revise the 2018 Standard Specifications as follows:

#### Page 10-6, Table 1000-1, REQUIREMENTS FOR CONCRETE, replace with the following:

			RE		TABLE			ЕТЕ				
	ssive days	Maximum Water-Cement Ratio			Consistency Maximum Slump		Cement Content					
Class of Concrete	. Compressive 1gth at 28 days	Con	trained crete	Entra Con	-Air- ained crete	Vibrated	Non- Vibrated	Vib	Vibrated		ibrated	
	Min. Streng	Rounded Aggregate	Angular Aggregate	Rounded Aggregate	Angular Aggregate	Vib	Vib	N Vib				
								Min.	Max.	Min.	Max.	
Units	psi					inch	inch	lb/cy	lb/cy	<i>lb/cy</i>	<i>lb/cy</i>	
AA	4500	0.381	0.426			3.5 <sup>A</sup>		639	715			
AA Slip Form	4500	0.381	0.426			1.5		639	715			
Drilled Pier	4500			0.450	0.450		5 – 7 dry 7 - 9 wet			640	800	
А	3000	0.488	0.532	0.550	0.594	3.5 A	4.0	564		602		

В	2500	0.488	0.567	0.559	0.630	1.5 machine placed 2.5 <sup>A</sup> hand placed	4.0	508		545	
Sand Light- weight	4500		0.420			4.0 <sup>A</sup>		715			
Latex Modified	3000 (at 7 days)	0.400	0.400			6.0		658			
Flowable Fill excavatable	150 max. (at 56 days)	as needed	as needed	as needed	as needed		Flowable			40	100
Flowable Fill non- excavatable	125	as needed	as needed	as needed	as needed		Flowable			100	as needed
Pavement	4500 Design, field 650 flexural, design only	0.559	0.559			1.5 slip form 3.0 hand placed		526			
Precast	See Table 1077-1	as needed	as needed			6.0	as needed				
Prestressed	per contract	See Table 1078-1	See Table 1078-1			8.0		564	as needed		

A. The slump may be increased to 6 inches, provided the increase in slump is achieved by adding a chemical admixture conforming to Section 1024-3. In no case shall the water-cement ratio on the approved design be exceeded. Concrete exhibiting segregation and/or excessive bleeding will be rejected. Utilizing an Admixture to modify slump does not relinquish the contractor's responsibility to ensure the final product quality and overall configuration meets design specifications. Caution should be taken when placing these modified mixes on steep grades to prevent unintended changes to the set slope.

#### THERMOPLASTIC PAVEMENT MARKING MATERIAL – COLOR TESTING: 3-19-19 1087

SP10 R05

Revise the 2018 Standard Specifications as follows:

Pages 10-183 and 10-184, Subarticle 1087-7(D)(1)(b) Yellow, lines 9-11, delete and replace with the following:

Obtain Color Values Y,x,y per ASTM E1349 using C/2° illuminant/observer. Results shall be  $Y \ge 45\%$ , and x,y shall fall within PR#1 chart chromaticity limits.

#### <u>POLYUREA PAVEMENT MARKING MATERIAL – TYPE 2 TYPICAL CERTIFIED</u> <u>MILL TEST REPORT:</u>

3-19-19

1087

SP10 R06

Amend the 2018 Standard Specifications as follows:

**Page 10-184, Subarticle 1087-8 Material Certification,** in accordance with Subarticle 106-3 provide a Type 2 Typical Certified Mill Test Report and a Type 3 Manufacturer's Certification for Polyurea pavement marking material.

When tested, the material shall meet the physical and chemical characteristics provided by the manufacturer. NCDOT reserves the right to compare these test results to baseline test results gathered by the NCDOT Materials and Test Unit.

#### NON-CAST IRON SNOWPLOWABLE PAVEMENT MARKERS:

10-19-21 (Rev. 11-16-21)

1086, 1250, 1253

SP10 R08

Revise the 2018 Standard Specifications as follows:

**Pages 10-177 and 10-178, Subarticle 1086-3 SNOWPLOWABLE PAVEMENT MARKERS,** delete items (A), (B) and (C)(1) and replace with the following:

#### (A) General

Use non-cast iron snowplowable pavement markers evaluated by NTPEP. The non-cast iron snowplowable pavement marker shall consist of a housing with one or more glass or plastic face lens type reflective lenses to provide the required color designation. The marker shall be designed or installed in a manner that minimizes damage from snowplow blades. Plastic lens faces shall use an abrasion resistant coating.

#### (B) Housings

(1) Dimensions

The dimension, slope and minimum area of reflecting surface shall conform to dimensions as shown in the plans. The minimum area of each reflecting surface shall be 1.44 sq.in.

(2) Materials

Use non-cast iron snowplowable pavement markers that are on the NCDOT Approved Products List.

(3) Surface

The surface of the housing shall be free of scale, dirt, rust, oil, grease or any other contaminant which might reduce its bond to the epoxy adhesive.

(4) Identification

Mark the housing with the manufacturer's name and model number of marker.

#### (C) Reflectors

(1) General

Laminate the reflector to an elastomeric pad and attach with adhesive to the housing. The thickness of the elastomeric pad shall be 0.04".

**Pages 12-14, Subarticle 1250-3(C) Removal of Existing Pavement Markers, lines 19-29,** delete and replace with the following:

Remove the existing raised pavement markers or the snowplowable pavement markers including the housings, before overlaying an existing roadway with pavement. Repair the pavement by filling holes as directed by the Engineer.

When traffic patterns are changed in work zones due to construction or reconstruction, remove all raised pavement markers or snowplowable markers including housings that conflict with the new traffic pattern before switching traffic to the new traffic pattern. Lens removal in lieu of total housing removal is not an acceptable practice for snowplowable markers.

Properly dispose of the removed pavement markers. No direct payment will be made for removal or disposal of existing pavement markers or repair of pavement, as such work will be incidental to other items in the contract.

Pages 12-16, Subarticle 1253-1 DESCRIPTION, lines 4-5, delete and replace with the following:

Furnish, install and maintain non-cast iron snowplowable pavement markers in accordance with the contract.

**Pages 12-16 and 12-17, Subarticle 1253-3 CONSTRUCTION METHODS,** delete items (A), (B) and (C) and replace with the following:

#### (A) General

Bond marker housings to the pavement with epoxy adhesive. Mechanically mix and dispense epoxy adhesives as required by the manufacturer's specifications. Place the markers immediately after the adhesive has been mixed and dispensed.

If saw cutting, milling, or grooving operations are used, promptly remove all resulting debris from the pavement surface. Install the marker housings within 7 calendar days after saw cutting, milling, or grooving the pavement. Remove and dispose of loose material from the slots by brushing, blow cleaning, or vacuuming. Dry the slots before applying the epoxy adhesive. Install non-cast iron snowplowable pavement markers according to the manufacturer's recommendations.

Protect the non-cast iron snowplowable pavement markers until the epoxy has initially cured and is track free.

#### **(B)** Reflector Replacement

In the event that a reflector is damaged, replace the damaged reflector by using adhesives and methods recommended by the manufacturer of the markers and approved by the Engineer. This work is considered incidental if damage occurs during the initial installation of the marker housings and maintenance of initial non-cast iron snowplowable markers specified in this section. This work will be paid for under the pay item for the type of reflector replacement if the damage occurred after the initial installation of the non-cast iron snowplowable pavement marker.

Missing housings shall be replaced. Broken housings shall be removed and replaced. In both cases the slot for the housings shall be properly prepared prior to installing the new housing; patch the existing marker slots as directed by the Engineer and install the new marker approximately one foot before or after the patch. Removal of broken housings and preparation of slots will be considered incidental to the work of replacing housings.

#### Pages 12-17, Subarticle 1253-4 MAINTENANCE, lines 5, delete and replace with the following:

Maintain all installed non-cast iron snowplowable pavement markers until acceptance.

**Pages 12-17, Subarticle 1253-5 MEASUREMENT AND PAYMENT, lines 7-8,** delete and replace with the following:

*Non-Cast Iron Snowplowable Pavement Markers* will be measured and paid as the actual number of non-cast iron snowplowable pavement markers satisfactorily placed and accepted by the Engineer.

Pages 12-17, Subarticle 1253-5 MEASUREMENT AND PAYMENT, lines 11, delete and replace with the following:

Payment will be made under:

Pay Item	Pay Unit
Non-Cast Iron Snowplowable Pavement Marker	Each
Replace Snowplowable Pavement Marker Reflector	Each

#### MATERIALS FOR PORTLAND CEMENT CONCRETE: (9-15-20) 1000, 1024

SP10 R24

Revise the 2018 Standard Specifications as follows:

Page 10-52, Article 1024-4, WATER, lines 3-6, delete and replace with the following:

Test water from wells at all locations. Test public water supplies from all out of state locations and in the following counties: Beaufort, Bertie, Brunswick, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Hyde, New Hanover, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrell and Washington unless the Engineer waives the testing requirements.

# **Page 10-52, Table 1024-2, PHYSICAL PROPERTIES OF WATER**, replace with the following:

Property	Requirement	<b>Test Method</b>
Compression Strength, minimum percent of control at 3 and 7 days	90%	ASTM C1602
Time of set, deviation from control	From 1:00 hr. earlier to 1:30 hr. later	ASTM C1602

рН	4.5 to 8.5	ASTM D1293 *
Chloride Ion Content, Max.	250 ppm	ASTM D512 *
Total Solids Content (Residue), Max.	1,000 ppm	SM 2540B *
Resistivity, Min.	0.500 kohm-cm	ASTM D1125 *

\*Denotes an alternate method is acceptable. Test method used shall be referenced in the test report.

# TEMPORARY SHORING: (2-20-07) (Rev. 10-19-21)

#### Description

Temporary shoring includes cantilever, braced and anchored shoring and temporary mechanically stabilized earth (MSE) walls. Temporary shoring does not include trench boxes. At the Contractor's option, use any type of temporary shoring unless noted otherwise in the plans or as directed. Design and construct temporary shoring based on actual elevations and shoring dimensions in accordance with the contract and accepted submittals. Construct temporary shoring at locations shown in the plans and as directed. Temporary shoring is required to maintain traffic when a 2:1 (H:V) slope from the top of an embankment or bottom of an excavation will intersect the existing ground line less than 5 feet from the edge of pavement of an open travelway. This provision does not apply to pipe, inlet or utility installation unless noted otherwise in the plans.

Positive protection includes concrete barrier and temporary guardrail. Provide positive protection for temporary shoring at locations shown in the plans and as directed. Positive protection is required if temporary shoring is located in the clear zone in accordance with the AASHTO Roadside Design Guide.

(A) Cantilever and Braced Shoring

> Cantilever shoring consists of steel sheet piles or H-piles with timber lagging. Braced shoring consists of sheet piles or H-piles with timber lagging and bracing such as beams, plates, walers, struts, rakers, etc. Define "piles" as sheet piles or H-piles.

(B) Anchored Shoring

> Anchored shoring consists of sheet piles with walers or H-piles with timber lagging anchored with ground or helical anchors. Driven anchors may be accepted at the discretion of the Engineer. A ground anchor consists of a grouted steel bar or multi-strand tendon with an anchorage. A helical anchor consists of a lead section with a central steel shaft and at least one helix steel plate followed by extensions with only central shafts (no helixes) and an anchorage. Anchorages consist of steel bearing plates with washers and hex nuts for bars or steel wedge plates and wedges for strands. Use a prequalified Anchored Wall Contractor to install ground anchors. Define "anchors" as ground, helical or driven anchors.

(C) Temporary MSE Walls SP11 R02

Temporary MSE walls include temporary geosynthetic and wire walls. Define "temporary wall" as a temporary MSE wall and "Temporary Wall Vendor" as the vendor supplying the temporary MSE wall. Define "reinforcement" as geotextile, geogrid, geostrip, welded wire grid or metallic strip reinforcement.

Temporary geosynthetic walls consist of geotextiles or geogrids wrapped behind welded wire facing or geostrips connected to welded wire facing. Define "temporary geotextile wall" as a temporary geosynthetic wall with geotextile reinforcement, "temporary geogrid wall" as a temporary geosynthetic wall with geogrid reinforcement and "temporary geostrip wall" as a temporary geosynthetic wall with geostrip reinforcement.

Temporary wire walls consist of welded wire grid or metallic strip reinforcement connected to welded wire facing. Define "Wire Wall Vendor" as the vendor supplying the temporary wire wall.

(D) Embedment

Define "embedment" for cantilever, braced and anchored shoring as the pile depth below the grade in front of shoring. Define "embedment" for temporary walls as the wall embedment below the grade at the wall face.

(E) Positive Protection

Define "unanchored or anchored portable concrete barrier" as portable concrete barrier (PCB) that meets 2018 Roadway Standard Drawing No. 1170.01. Define "concrete barrier" as unanchored or anchored PCB or an approved equal. Define "temporary guardrail" as temporary steel beam guardrail that meets 2018 Roadway Standard Drawing No. 862.02.

#### Materials

Refer to the 2018 Standard Specifications.

Item	Section
Concrete Barrier Materials	1170-2
Flowable Fill, Excavatable	1000-6
Geosynthetics	1056
Grout, Type 1	1003
Portland Cement	1024-1
Portland Cement Concrete	1000
Select Materials	1016
Steel Beam Guardrail Materials	862-2
Steel Plates	1072-2
Steel Sheet Piles and H-Piles	1084
Untreated Timber	1082-2
Water	1024-4
Welded Wire Reinforcement	1070-3

Provide Type 6 material certifications for shoring materials in accordance with Article 106-3 of the *2018 Standard Specifications*. Use Class IV select material for temporary guardrail and Class A concrete that meets Article 450-2 of the *2018 Standard Specifications* or Type 1 grout for drilled-in piles. Provide untreated timber with a thickness of at least 3 inches and a bending stress of at least 1,000 pounds per square inch for timber lagging. Provide steel bracing that meets ASTM A36.

### (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 A-2-4 soil for backfill around culverts.

(B) Anchors

Store anchor materials on blocking a minimum of 12 inches 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 materials so materials are kept clean and free of damage. Bent, damaged or defective materials will be rejected.

(1) Ground Anchors

Use high-strength deformed steel bars that meet AASHTO M 275 or seven-wire strands that meet ASTM A886 or Article 1070-5 of the 2018 Standard Specifications. Splice bars in accordance with Article 1070-9 of the 2018 Standard Specifications. Do not splice strands. Use bondbreakers, spacers and centralizers that meet Article 6.3.5 of the AASHTO LRFD Bridge Construction Specifications.

Use neat cement grout that only contains cement and water with a water cement ratio of 0.4 to 0.5 which is approximately 5.5 gallons of water per 94 pounds of Portland cement. Provide grout with a compressive strength at 3 and 28 days of at least 1,500 and 4,000 psi, respectively.

(2) Helical Anchors

Use helical anchors with an ICC Evaluation Service, Inc. (ICC-ES) report. Provide couplers, thread bar adapters and bolts recommended by the Anchor Manufacturer to connect helical anchors together and to piles.

(3) Anchorages

Provide steel plates for bearing plates and steel washers, hex nuts, wedge plates and wedges recommended by the Anchor Manufacturer.

#### (C) Temporary Walls

(1) Welded Wire Facing

Use welded wire reinforcement for welded wire facing, struts and wires. For temporary wire walls, provide welded wire facing supplied by the Wire Wall Vendor or a manufacturer approved or licensed by the vendor. For temporary wire walls with separate reinforcement and facing components, provide connectors (e.g., bars, clamps, plates, etc.) and fasteners (e.g., bolts, nuts, washers, etc.) required by the Wire Wall Vendor.

(2) Geotextiles

Provide Type 2 geotextile for separation and retention geotextiles. Provide Type 5 geotextile for geotextile reinforcement with ultimate tensile strengths in accordance with the accepted submittals.

(3) Geogrid and Geostrip Reinforcement

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

Provide geogrids and geostrips with design strengths in accordance with the accepted submittals. Geogrids and geostrips 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

(4) Welded Wire Grid and Metallic Strip Reinforcement

Provide welded wire grid and metallic strip reinforcement supplied by the Wire Wall Vendor or a manufacturer approved or licensed by the vendor. Use welded wire grid reinforcement ("mesh", "mats" and "ladders") that meet Article 1070-3 of the *2018 Standard Specifications* and metallic strip reinforcement ("straps") that meet ASTM A572 or A1011.

#### **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 temporary shoring except for barrier above temporary walls. Concrete barrier with the minimum required clear distance is required above temporary walls.

(B) Temporary Guardrail

Define "clear distance" behind temporary guardrail as the horizontal distance between guardrail posts and temporary shoring. At the Contractor's option or if clear distance for cantilever, braced and anchored shoring is less than 4 feet, 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 temporary walls.

(C) Temporary Shoring Designs

Before beginning temporary shoring design, survey existing ground elevations in the vicinity of shoring locations to determine actual design heights (H). Submit PDF files of working drawings and design calculations for temporary shoring designs in accordance with Article 105-2 of the 2018 Standard Specifications. Submit working drawings showing plan views, shoring profiles, typical sections and details of temporary shoring design and construction sequence. Do not begin shoring construction until a design submittal is accepted.

Have cantilever and braced shoring designed, detailed and sealed by an engineer licensed in the state of North Carolina. Use a prequalified Anchored Wall Design Consultant to design anchored shoring. Provide anchored shoring designs sealed by a Design Engineer approved as a Geotechnical Engineer (key person) for an Anchored Wall Design Consultant. Include details in anchored shoring working drawings of anchor locations and lock-off loads, unit grout/ground bond strengths for ground anchors or minimum installation torque and torsional strength rating for helical anchors and if necessary, obstructions extending through shoring or interfering with anchors. Include details in the anchored shoring construction sequence of pile and anchor installation, excavation and anchor testing.

Provide temporary wall designs sealed by a Design Engineer licensed in the state of North Carolina and employed or contracted by the Temporary Wall Vendor. Include details in temporary wall working drawings of geotextile and reinforcement types, locations and directions and obstructions extending through walls or interfering with reinforcement.

(1) Soil Parameters

Design temporary shoring for the assumed soil parameters and groundwater or flood elevations shown in the plans. Assume the following soil parameters for shoring backfill:

(a) Unit weight  $(\gamma) = 120 \text{ pcf}$ ,

(b)	Friction Angle ( <b>\$</b> )	Shoring Backfill
	30°	A-2-4 Soil

34°	Class II, Type 1 or Class III Select Material
38°	Class V or VI Select Material

- (c) Cohesion (c) = 0 psf.
- (2) Traffic Surcharge

Design temporary shoring for a traffic surcharge of 250 pounds per square foot if traffic will be above and within H of shoring. This traffic surcharge does not apply to construction traffic. Design temporary shoring for any construction surcharge if construction traffic will be above and within H of shoring. Design temporary shoring for a traffic (live load) surcharge in accordance with Article 11.5.6 of the *AASHTO LRFD Bridge Design Specifications*.

(3) Cantilever, Braced and Anchored Shoring Designs

Use shoring backfill for fill sections and voids between cantilever, braced and anchored shoring and the critical failure surface. Use concrete or Type 1 grout for embedded portions of drilled-in H-piles. Do not use drilled-in sheet piles.

Define "top of shoring" for cantilever, braced and anchored shoring as where the grade intersects the back of sheet piles or H-piles and timber lagging. Design cantilever, braced and anchored shoring for a traffic impact load of 2,000 pounds per foot applied 18 inches above top of shoring if concrete barrier is above and next to shoring or temporary guardrail is above and attached to shoring. Extend cantilever, braced and anchored shoring at least 32 inches above top of shoring if shoring is designed for traffic impact. Otherwise, extend shoring at least 6 inches above top of shoring.

Design cantilever, braced and anchored shoring for a maximum deflection of 3 inches if the horizontal distance to the closest edge of pavement or structure is less than H. Otherwise, design shoring for a maximum deflection of 6 inches. Design cantilever and braced shoring in accordance with the plans and *AASHTO Guide Design Specifications for Bridge Temporary Works*.

Design anchored shoring in accordance with the plans and Article 11.9 of the *AASHTO LRFD Bridge Design Specifications*. Use a resistance factor of 0.80 for tensile resistance of anchors with bars, strands or shafts. Extend the unbonded length for ground anchors and the shallowest helix for helical anchors at least 5 feet behind the critical failure surface. Do not extend anchors beyond right-of-way or easement limits. If existing or future obstructions such as foundations, guardrail posts, pavements, pipes, inlets or utilities will interfere with anchors, maintain a clearance of at least 6 inches between obstructions and anchors.

(4) Temporary Wall Designs

Use shoring backfill in the reinforced zone of temporary walls. Separation geotextiles are required 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, separation geotextiles are also required between shoring backfill and backfill or natural ground on top of and at the back of the reinforced zone.

Design temporary walls in accordance with the plans and Article 11.10 of the *AASHTO LRFD Bridge Design Specifications*. Embed temporary walls at least 18 inches except for walls on structures or rock as determined by the Engineer. Use a uniform reinforcement length throughout the wall height of at least 0.7H or 6 feet, whichever is longer. Extend the reinforced zone at least 6 inches beyond end of reinforcement. Do not locate the reinforced zone outside right-of-way or easement limits.

Use the simplified method for determining maximum reinforcement loads in accordance with the AASHTO LRFD specifications. For geotextile reinforcement, use geotextile properties approved by the Department or default values in accordance with the AASHTO LRFD specifications. For geogrid and geostrip reinforcement, use approved geosynthetic reinforcement properties available from the website shown elsewhere in this provision. Use geosynthetic properties for the direction reinforcement will be installed, a 3-year design life and shoring backfill to be used in the reinforced zone.

Do not use more than 4 different reinforcement strengths for each temporary geosynthetic wall. Design temporary geotextile walls for a reinforcement coverage ratio ( $R_c$ ) of 1.0. For temporary geogrid walls with an  $R_c$  of less than 1.0, use a maximum horizontal clearance between geogrids of 3 feet and stagger reinforcement so geogrids are centered over gaps in the reinforcement layer below.

For temporary geosynthetic walls, use "L" shaped welded wire facing with 18 to 24 inch long legs. Locate geosynthetic reinforcement so reinforcement layers are at the same level as the horizontal legs of welded wire facing. Use vertical reinforcement spacing equal to facing height. Wrap geotextile or geogrid reinforcement behind welded wire facing and extend reinforcement at least 3 feet back behind facing into shoring backfill. Attach geostrip reinforcement to welded wire facing with a connection approved by the Department.

For temporary wire walls with separate reinforcement and facing components, attach welded wire grid or metallic strip reinforcement to welded wire facing with a connection approved by the Department. For temporary geogrid, geostrip and wire walls, retain shoring backfill at welded wire facing with retention geotextiles and extend geotextiles at least 3 feet back behind facing into backfill.

#### (D) Preconstruction Meeting

The Engineer may require a shoring preconstruction meeting to discuss the construction, inspection and testing of the temporary shoring. If required and if this meeting occurs before all shoring submittals have been accepted, additional preconstruction meetings may be required before beginning construction of temporary shoring without accepted

submittals. The Resident, District or Bridge Maintenance Engineer, Area Construction Engineer, Geotechnical Operations Engineer, Contractor and Shoring Contractor Superintendent will attend preconstruction meetings.

#### **Construction Methods**

Control drainage during construction in the vicinity of shoring. Direct run off away from shoring and shoring backfill. Contain and maintain backfill and protect material from erosion.

Install positive protection in accordance with the contract and accepted submittals. Use PCB in accordance with Section 1170 of the *2018 Standard Specifications* and 2018 Roadway Standard Drawing No. 1170.01. Use temporary guardrail in accordance with Section 862 of the *2018 Standard Specifications* and 2018 Roadway Standard Drawing Nos. 862.01, 862.02 and 862.03.

(A) Tolerances

Construct shoring with the following tolerances:

- (1) Horizontal wires of welded wire facing are level in all directions,
- (2) Shoring location is within 6 inches of horizontal and vertical alignment shown in the accepted submittals, and
- (3) Shoring plumbness (batter) is not negative and within 2 degrees of vertical.
- (B) Cantilever, Braced and Anchored Shoring Installation

If overexcavation behind cantilever, braced or anchored shoring is shown in the accepted submittals, excavate before installing piles. Otherwise, install piles before excavating for shoring. Install cantilever, braced or anchored shoring in accordance with the construction sequence shown in the accepted submittals. Remove piles and if applicable, timber lagging when shoring is no longer needed.

(1) Pile Installation

Install piles with the minimum required embedment and extension in accordance with Subarticles 450-3(D) and 450-3(E) of the *2018 Standard Specifications* except that a pile driving equipment data form is not required. Piles may be installed with a vibratory hammer as approved by the Engineer.

Do not splice sheet piles. Use pile excavation to install drilled-in H-piles. After filling holes with concrete or Type 1 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 minimum required embedment. When this occurs, a revised design submittal may be required.

(2) Excavation

Excavate in front of piles from the top down in accordance with the accepted submittals. For H-piles with timber lagging and braced and anchored shoring, excavate in staged horizontal lifts with a maximum height of 5 feet. Remove flowable fill and material in between H-piles as needed to install timber lagging. Position lagging with at least 3 inches of contact in the horizontal direction between the lagging and pile flanges. Do not excavate the next lift until timber lagging for the current lift is installed and if applicable, bracing and anchors for the current lift are accepted. Backfill behind cantilever, braced or anchored shoring with shoring backfill.

(3) Anchor Installation

If applicable, install foundations located behind anchored shoring before installing anchors. Fabricate and install ground anchors in accordance with the accepted submittals, Articles 6.4 and 6.5 of the *AASHTO LRFD Bridge Construction Specifications* and the following unless otherwise approved:

- (a) Materials in accordance with this provision are required instead of materials conforming to Articles 6.4 and 6.5.3 of the AASHTO LRFD Specifications,
- (b) Encapsulation-protected ground anchors in accordance with Article 6.4.1.2 of the AASHTO LRFD specifications are not required, and
- (c) Corrosion protection for unbonded lengths of ground anchors and anchorage covers are not required.
- (d) Mix and place neat cement grout in accordance with Subarticles 1003-5, 1003-6 and 1003-7 of the 2018 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.

Install helical anchors in accordance with the accepted submittals and Anchor Manufacturer's instructions. Measure torque during installation and do not exceed the torsional strength rating of the helical anchor. Attain the minimum required installation torque and penetration before terminating anchor installation. When replacing a helical anchor, embed last helix of the replacement anchor at least 3 helix plate diameters past the location of the first helix of the previous anchor.

(4) Anchor Testing

Proof test and lock-off anchors in accordance with the accepted submittals and Article 6.5.5 of the *AASHTO LRFD Bridge Construction Specifications* except for the acceptance criteria in Article 6.5.5.5. For the AASHTO LRFD specifications, "ground anchor" refers to a ground or helical anchor and "tendon" refers to a bar, strand or shaft.

(a) Anchor Acceptance

Anchor acceptance is based in part on the following criteria.

- (i) For ground and helical anchors, total movement is less than 0.04 inches between the 1 and 10 minute readings or less than 0.08 inches between the 6 and 60 minute readings.
- (ii) For ground anchors, total movement at maximum test load exceeds 80% of the theoretical elastic elongation of the unbonded length.
- (b) Anchor Test Results

Submit PDF files of anchor test records including movement versus load plots for each load increment within 24 hours of completing each row of anchors. The Engineer will review the test records to determine if the anchors are acceptable.

If the Engineer determines an anchor is unacceptable, revise the anchor design or installation methods. Submit a revised anchored shoring design for acceptance and provide an acceptable anchor with the revised design or installation methods. If required, replace the anchor or provide additional anchors with the revised design or installation methods.

(C) Temporary Wall Installation

Excavate as necessary for temporary walls in accordance with the plans and accepted submittals. If applicable, install foundations located in the reinforced zone before placing shoring backfill or reinforcement unless otherwise approved. Notify the Engineer when foundation excavation is complete. Do not place shoring backfill or reinforcement until excavation dimensions and foundation material are approved.

Erect welded wire facing so the wall position is as shown in the plans and accepted submittals. Set welded wire facing adjacent to each other in the horizontal and vertical direction to completely cover the wall face with facing. Stagger welded wire facing to create a running bond by centering facing over joints in the row below.

Attach geostrip reinforcement to welded wire facing and wrap geotextile reinforcement and retention geotextiles behind welded wire facing as shown in the plans and accepted submittals. Cover geotextiles with at least 3" of shoring backfill. Overlap adjacent geotextile reinforcement and retention and separation geotextiles at least 18 inches with seams oriented perpendicular to the wall face. Hold geotextiles in place with wire staples or anchor pins as needed. Place reinforcement within 3 inches of locations shown in the plans and accepted submittals. Before placing shoring backfill, pull geosynthetic reinforcement taut so it is in tension and free of kinks, folds, wrinkles or creases. Install reinforcement with the direction shown in the plans and accepted submittals. For temporary wire walls with separate reinforcement and facing components, attach welded wire grid or metallic strip reinforcement to welded wire facing as shown in the accepted submittals. Do not splice or overlap reinforcement so seams are parallel to the wall face. Contact the Engineer when unanticipated existing or future obstructions such as foundations, pavements, pipes, inlets or utilities will interfere with reinforcement.

Place shoring backfill in the reinforced zone in 8 to 10 inch thick lifts. Compact A-2-4 soil and Class II, Type 1 and Class III select material in accordance with Subarticle 235-3(C) of the *2018 Standard Specifications*. Use only hand operated compaction equipment to compact backfill within 3 feet of welded wire facing. At a distance greater than 3 feet, compact shoring backfill with at least 4 passes of an 8 to 10 ton vibratory roller in a direction parallel to the wall face. Smooth wheeled or rubber tired rollers are also acceptable for compacting backfill. Do not use sheepsfoot, grid rollers or other types of compacting shoring backfill. End dumping directly on geosynthetics is not permitted. Do not operate heavy equipment on reinforcement until it is covered with at least 8 inches of shoring backfill. Replace any damaged reinforcement to the satisfaction of the Engineer.

Backfill for temporary walls outside the reinforced zone in accordance with Article 410-8 of the *2018 Standard Specifications*. Bench temporary walls into the sides of excavations where applicable. For temporary geosynthetic walls with top of wall within 5 feet of finished grade, remove top facing and incorporate top reinforcement layer into fill when placing fill in front of wall. Temporary walls remain in place permanently unless otherwise required.

#### **Measurement and Payment**

*Temporary Shoring* will be measured and paid in square feet. Temporary walls will be measured as the square feet of exposed wall face area. Cantilever, braced or anchored shoring will be measured as the square feet of exposed shoring face area with the shoring height equal to the difference between the top and bottom of shoring elevations. Define "top of shoring" as where the grade intersects the back of sheet piles or H-piles and timber lagging. Define "bottom of shoring" as where the grade intersects front of sheet piles or H-piles and timber lagging. No measurement will be made for any embedment, shoring extension above top of shoring or pavement thickness above temporary walls.

The contract unit price for *Temporary Shoring* will be full compensation for providing shoring designs, submittals and materials, excavating, backfilling, hauling and removing excavated materials and supplying all labor, tools, equipment and incidentals necessary to construct temporary shoring.

No payment will be made for temporary shoring not shown in the plans or required by the Engineer including shoring for OSHA reasons or the Contractor's convenience. No value engineering

C204498 R-2511

proposals will be accepted based solely on revising or eliminating shoring locations shown in the plans or estimated quantities shown in the bid item sheets as a result of actual field measurements or site conditions.

PCB will be measured and paid in accordance with Section 1170 of the 2018 Standard Specifications. No additional payment will be made for anchoring PCB for temporary shoring. Costs for anchoring PCB will be incidental to temporary shoring.

Temporary guardrail will be measured and paid for in accordance with Section 862 of the 2018 Standard Specifications.

Payment will be made under:

Pay Item Temporary Shoring **Pay Unit** Square Foot

#### MATERIAL AND EQUIPMENT STORAGE & PARKING OF PERSONAL VEHICLES: 11-17-21 1101 SP11 R03

Revise the 2018 Standard Specifications as follows:

Page 11-2, Article 1101-8 MATERIAL AND EQUIPMENT STORAGE, line 35-38, delete and replace with the following:

When work is not in progress, keep all personnel, equipment, machinery, tools, construction debris, materials and supplies away from active travel lanes that meets Table 1101-1.

TABLE 1101-1 MATERIAL AND EQUIPMENT STORAGE FROM ACTIVE TRAVEL LANES				
Posted Speed Limit (mph)	Distance (ft)			
40 or less	$\geq 18$			
45-50	$\geq 28$			
55	$\geq$ 32			
60 or higher	$\geq$ 40			

When vehicles, equipment and materials are protected by concrete barrier or guardrail, they shall be offset at least 5 feet from the barrier or guardrail.

**Page 11-2, Article 1101-9 PARKING OF PERSONAL VEHICLES, line 40-41,** delete and replace with the following:

Provide staging areas for personal vehicle parking in accordance with section 1101-8 or as directed by the Engineer before use.

# WORK ZONE INSTALLER:

(7-20-21)

1101, 1150

SP11 R04

Provide the service of at least one qualified work zone installer during the setup, installation, and removal of temporary traffic control within the highway right of way. The qualified work zone

installer shall serve as crew leader and shall be on site and directing the installation and removal of temporary traffic control. If multiple temporary traffic control installations or removals are occurring simultaneously, then each shall have a qualified work zone installer.

The work zone installer shall be qualified by an NCDOT approved training agency in the safe and competent set up of temporary traffic control. For a complete listing of approved training agencies, see the Work Zone Safety Training webpage.

A work zone supervisor, in accordance with Article 1101-13 of the *Standard Specifications*, may fulfill the role of the work zone installer during the setup, installation, and removal of temporary traffic control within the highway right of way provided they are on site and directing the installation and removal of temporary traffic control.

All other individuals participating in the setup, installation, and removal of temporary traffic control within the highway right of way shall be certified as a qualified flagger in accordance with Article 1150-3 of the *Standard Specifications*, even if flagging is not being performed as part of the traffic control.

Provide the name and contact information of all qualified work zone installers to the Engineer prior to or at the preconstruction conference. Additionally, provide a qualification statement that all other individuals participating in the setup, installation, and removal of temporary traffic control are qualified flaggers that have been properly trained through an NCDOT approved training agency.

# EXTRUDED THERMOPLASTIC PAVEMENT MARKING THICKNESS:

3-19-19

1205

SP12 R05

Revise the 2018 Standard Specifications as follows:

**Page 12-6, Subarticle 1205-4(A)(1) General, lines 5-8,** delete the second sentence and replace with the following:

Use application equipment that provides multiple width settings ranging from 4 inches to 12 inches and multiple thickness settings to achieve a minimum pavement marking thickness of 0.090 inch above the surface of the pavement.

# **Page 12-7, Table 1205-3, THICKNESS REQUIREMENTS FOR THERMOPLASTIC,** replace with the following:

<b>TABLE 1205-3</b>			
MIN	MINIMUM THICKNESS REQUIREMENTS FOR THERMOPLASTIC		
Thickness	Location		
240 mils	In-lane and shoulder-transverse pavement markings (rumble strips). May be		
	placed in 2 passes.		
90 mils	Center lines, skip lines, transverse bands, mini-skip lines, characters, bike lane		
	symbols, crosswalk lines, edge lines, gore lines, diagonals, and arrow symbols		

#### **PERMANENT SEEDING AND MULCHING:** 1660

(7-1-95)

The Department desires that permanent seeding and mulching be established on this project as soon as practical after slopes or portions of slopes have been graded. As an incentive to obtain an early stand of vegetation on this project, the Contractor's attention is called to the following:

For all permanent seeding and mulching that is satisfactorily completed in accordance with the requirements of Section 1660 in the 2018 Standard Specifications and within the following percentages of elapsed contract times, an additional payment will be made to the Contractor as an incentive additive. The incentive additive will be determined by multiplying the number of acres of seeding and mulching satisfactorily completed times the contract unit bid price per acre for Seeding and Mulching times the appropriate percentage additive.

Percentage of Elapsed Contract Time	Percentage Additive
0% - 30%	30%
30.01% - 50%	15%

Percentage of elapsed contract time is defined as the number of calendar days from the date of availability of the contract to the date the permanent seeding and mulching is acceptably completed divided by the total original contract time.

SP16 R02

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#### C204498 R-2511

# <u>STANDARD SPECIAL PROVISION</u> <u>AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS</u>

(5-20-08)

*General Statute 143C-6-11. (h) Highway Appropriation* is hereby incorporated verbatim in this contract as follows:

(h) Amounts Encumbered. – Transportation project appropriations may be encumbered in the amount of allotments made to the Department of Transportation by the Director for the estimated payments for transportation project contract work to be performed in the appropriation fiscal year. The allotments shall be multiyear allotments and shall be based on estimated revenues and shall be subject to the maximum contract authority contained in General Statute 143C-6-11(c). Payment for transportation project work performed pursuant to contract in any fiscal year other than the current fiscal year is subject to appropriations by the General Assembly. Transportation project contracts shall contain a schedule of estimated completion progress, and any acceleration of this progress shall be subject to the approval of the Department of Transportation provided funds are available. The State reserves the right to terminate or suspend any transportation project contract, and any transportation project contract shall be so terminated or suspended if funds will not be available for payment of the work to be performed during that fiscal year pursuant to the contract. In the event of termination of any contract, the contractor shall be given a written notice of termination at least 60 days before completion of scheduled work for which funds are available. In the event of termination, the contractor shall be paid for the work already performed in accordance with the contract specifications.

Payment will be made on any contract terminated pursuant to the special provision in accordance with Subarticle 108-13(D) of the 2018 Standard Specifications.

# SSP-2

# STANDARD SPECIAL PROVISION NCDOT GENERAL SEED SPECIFICATION FOR SEED QUALITY

(5-17-11)

Seed shall be sampled and tested by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory. When said samples are collected, the vendor shall supply an independent laboratory report for each lot to be tested. Results from seed so sampled shall be final. Seed not meeting the specifications shall be rejected by the Department of Transportation and shall not be delivered to North Carolina Department of Transportation warehouses. If seed has been delivered it shall be available for pickup and replacement at the supplier's expense.

Any re-labeling required by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory, that would cause the label to reflect as otherwise specified herein shall be rejected by the North Carolina Department of Transportation.

Seed shall be free from seeds of the noxious weeds Johnsongrass, Balloonvine, Jimsonweed, Witchweed, Itchgrass, Serrated Tussock, Showy Crotalaria, Smooth Crotalaria, Sicklepod, Sandbur, Wild Onion, and Wild Garlic. Seed shall not be labeled with the above weed species on the seed analysis label. Tolerances as applied by the Association of Official Seed Analysts will NOT be allowed for the above noxious weeds except for Wild Onion and Wild Garlic.

Tolerances established by the Association of Official Seed Analysts will generally be recognized. However, for the purpose of figuring pure live seed, the found pure seed and found germination percentages as reported by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory will be used. Allowances, as established by the NCDOT, will be recognized for minimum pure live seed as listed on the following pages.

The specifications for restricted noxious weed seed refers to the number per pound as follows:

Restricted Noxious <u>Weed</u>	Limitations per Lb. Of Seed	Restricted Noxious <u>Weed</u>	Limitations per <u>Lb. of Seed</u>
Blessed Thistle	4 seeds	Cornflower (Ragged Robin)	27 seeds
Cocklebur	4 seeds	Texas Panicum 27 seeds	
Spurred Anoda	4 seeds	Bracted Plantain 54 seeds	
Velvetleaf	4 seeds	Buckhorn Plantain 54 seeds	
Morning-glory	8 seeds	Broadleaf Dock 54 seeds	
Corn Cockle	10 seeds	Curly Dock	54 seeds
Wild Radish	12 seeds	Dodder 54 seeds	
Purple Nutsedge	27 seeds	Giant Foxtail	54 seeds
Yellow Nutsedge	27 seeds	Horsenettle 54 seeds	
Canada Thistle	27 seeds	Quackgrass	54 seeds
Field Bindweed	27 seeds	Wild Mustard	54 seeds
Hedge Bindweed	27 seeds		

Seed of Pensacola Bahiagrass shall not contain more than 7% inert matter, Kentucky Bluegrass, Centipede and Fine or Hard Fescue shall not contain more than 5% inert matter whereas a maximum of 2% inert matter will be allowed on all other kinds of seed. In addition, all seed shall

Z-3

not contain more than 2% other crop seed nor more than 1% total weed seed. The germination rate as tested by the North Carolina Department of Agriculture shall not fall below 70%, which includes both dormant and hard seed. Seed shall be labeled with not more than 7%, 5% or 2% inert matter (according to above specifications), 2% other crop seed and 1% total weed seed.

Exceptions may be made for minimum pure live seed allowances when cases of seed variety shortages are verified. Pure live seed percentages will be applied in a verified shortage situation. Those purchase orders of deficient seed lots will be credited with the percentage that the seed is deficient.

FURTHER SPECIFICATIONS FOR EACH SEED GROUP ARE GIVEN BELOW:

Minimum 85% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 83% pure live seed will not be approved.

Sericea Lespedeza Oats (seeds)

Minimum 80% pure live seed; maximum 1% total weed seed; maximum 2% total other crop; maximum 144 restricted noxious weed seed per pound. Seed less than 78% pure live seed will not be approved.

Tall Fescue (all approved varieties) Kobe Lespedeza Korean Lespedeza Weeping Lovegrass Carpetgrass Bermudagrass Browntop Millet German Millet – Strain R Clover – Red/White/Crimson

Minimum 78% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 76% pure live seed will not be approved.

Common or Sweet Sundangrass

Minimum 76% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 74% pure live seed will not be approved.

Rye (grain; all varieties) Kentucky Bluegrass (all approved varieties) Hard Fescue (all approved varieties) Shrub (bicolor) Lespedeza

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 noxious weed seed per pound. Seed less than 70% pure live seed will not be approved.

Centipedegrass Crownvetch Pensacola Bahiagrass Creeping Red Fescue Japanese Millet Reed Canary Grass Zoysia Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 5% inert matter; maximum 144 restricted noxious weed seed per pound.

Barnyard Grass Big Bluestem Little Bluestem Bristly Locust Birdsfoot Trefoil Indiangrass Orchardgrass Switchgrass Yellow Blossom Sweet Clover

# SSP-5

#### STANDARD SPECIAL PROVISION

#### **ERRATA**

(10-16-18) (Rev.1-18-22)

Revise the 2018 Standard Specifications as follows:

#### **Division 6**

Page 6-7, Article 609-1 DESCRIPTION, line 29, replace article number "609-10" with "609-9".

#### **Division 7**

**Page 7-27, Article 725-1 MEASUREMENT AND PAYMENT, line 4,** replace article number "725-1" with "724-4".

**Page 7-28, Article 725-1 MEASUREMENT AND PAYMENT, line 10,** replace article number "725-1" with "725-3".

#### **Division 10**

**Page 10-78, Article 1056-4 GEOTEXTILES, TABLE 1056-1, Permittivity, Type 2,** replace "Table 6<sup>D</sup>" with "Table 7<sup>D</sup>" and **Permittivity, Type 3<sup>B</sup>**, replace "Table 7<sup>D</sup>" with "Table 8<sup>D</sup>".

**Page 10-121, Article 1076-7, REPAIR OF GALVANIZING, line 8,** replace article number "1080-9" with "1080-7".

**Page 10-162, Article 1080-50 PAINT FOR VERTICAL MARKERS, line 1,** replace article number "1080-50" with "1080-10".

Page 10-162, Article 1080-61 EPOXY RESIN FOR REINFORCING STEEL, line 5, replace article number "1080-61" with "1080-11".

Page 10-162, Article 1080-72 ABRASIVE MATERIALS FOR BLAST CLEANING STEEL, line 22, replace article number "1080-72" with "1080-12".

**Page 10-163, Article 1080-83 FIELD PERFORMANCE AND SERVICES, line 25,** replace article number "1080-83" with "1080-13".

#### **Division 17**

**Page 17-15, Article 1715-4 MEASUREMENT AND PAYMENT, lines 42-44,** replace the second sentence with the following:

An example is an installation of a single 1.25 inch HDPE conduit would be paid as:

Directional Drill (1)(1.25") Linear Foot

Page 17-15, Subarticle 1715-3(E) Bore and Jack, line 5, replace article number "1540-4" with "1550-4".

Z-4

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**Page 17-15, Subarticle 1715-3(E) Bore and Jack, lines 10 & 11,** replace "*NCDOT Policies and Procedures for Accommodating Utilities on Highway Rights of Way*" with "*NCDOT Utilities Accommodations Manual*".

# SSP-7

#### STANDARD SPECIAL PROVISION

#### <u>PLANT AND PEST QUARANTINES</u> (Imported Fire Ant, Gypsy Moth, Witchweed, Emerald Ash Borer, Guava Root Knot Nematode, And Other Noxious Weeds)

(3-18-03) (Rev. 5-21-19)

#### Within Quarantined Area

This project may be within a county regulated for plant and/or pests. If the project or any part of the Contractor's operations is located within a quarantined area, thoroughly clean all equipment prior to moving out of the quarantined area. Comply with federal/state regulations by obtaining a certificate or limited permit for any regulated article moving from the quarantined area.

#### **Originating in a Quarantined County**

Obtain a certificate or limited permit issued by the N.C. Department of Agriculture/United States Department of Agriculture. Have the certificate or limited permit accompany the article when it arrives at the project site.

#### Contact

Contact the N.C. Department of Agriculture/United States Department of Agriculture at 1-800-206-9333, 919-707-3730, or <u>https://www.ncagr.gov/plantindustry/Plant/quaran/table2.htm</u> to determine those specific project sites located in the quarantined area or for any regulated article used on this project originating in a quarantined county.

#### **Regulated Articles Include**

- 1. Soil, sand, gravel, compost, peat, humus, muck, and decomposed manure, separately or with other articles. This includes movement of articles listed above that may be associated with cut/waste, ditch pulling, and shoulder cutting.
- 2. Plants with roots including grass sod.
- 3. Plant crowns and roots.
- 4. Bulbs, corms, rhizomes, and tubers of ornamental plants.
- 5. Hay, straw, fodder, and plant litter of any kind.
- 6. Clearing and grubbing debris.
- 7. Used agricultural cultivating and harvesting equipment.
- 8. Used earth-moving equipment.
- 9. Any other products, articles, or means of conveyance, of any character, if determined by an inspector to present a hazard of spreading imported fire ant, gypsy moth, witchweed, emerald ash borer, guava root knot nematode, or other noxious weeds.

Z-04a

# SSP-8

#### STANDARD SPECIAL PROVISION

#### MINIMUM WAGES

(7-21-09)

Z-5

- **FEDERAL:** The Fair Labor Standards Act provides that with certain exceptions every employer shall pay wages at the rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.
- **STATE:** The North Carolina Minimum Wage Act provides that every employer shall pay to each of his employees, wages at a rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all skilled labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all intermediate labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all unskilled labor on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

This determination of the intent of the application of this act to the contract on this project is the responsibility of the Contractor.

The Contractor shall have no claim against the Department of Transportation for any changes in the minimum wage laws, Federal or State. It is the responsibility of the Contractor to keep fully informed of all Federal and State Laws affecting his contract.

#### STANDARD SPECIAL PROVISION

#### **TITLE VI AND NONDISCRIMINATION:**

(6-28-77)(Rev 6/19/2018)

Revise the 2018 Standard Specifications as follows:

Replace Article 103-4(B) with the following:

The North Carolina Department of Transportation is committed to carrying out the U.S. Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts.

The provisions of this section related to United States Department of Transportation (US DOT) Order 1050.2A, Title 49 Code of Federal Regulations (CFR) part 21, 23 United States Code (U.S.C.) 140 and 23 CFR part 200 (or 49 CFR 303, 49 U.S.C. 5332 or 49 U.S.C. 47123) are applicable to all North Carolina Department of Transportation (NCDOT) contracts and to all related subcontracts, material supply, engineering, architectural and other service contracts, regardless of dollar amount. Any Federal provision that is specifically required not specifically set forth is hereby incorporated by reference.

# (1) Title VI Assurances (USDOT Order 1050.2A, Appendix A)

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

(a) Compliance with Regulations

The contractor (hereinafter includes consultants) shall comply with the Acts and the Regulations relative to Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

(b) Nondiscrimination

The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

- (c) Solicitations for Subcontractors, Including Procurements of Materials and Equipment In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Nondiscrimination on the grounds of race, color, or national origin.
- (d) Information and Reports

The contractor shall provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FHWA to be pertinent to ascertain compliance with such Acts,

Z-6

Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor shall so certify to the Recipient or the FHWA, as appropriate, and shall set forth what efforts it has made to obtain the information.

(e) Sanctions for Noncompliance:

In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it and/or the FHWA may determine to be appropriate, including, but not limited to:

- (i) Withholding payments to the contractor under the contract until the contractor complies; and/or
- (ii) Cancelling, terminating, or suspending a contract, in whole or in part.
- (f) Incorporation of Provisions

The contractor shall include the provisions of paragraphs (a) through (f) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor shall take action with respect to any subcontract or procurement as the Recipient or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

#### (2) Title VI Nondiscrimination Program (23 CFR 200.5(p))

The North Carolina Department of Transportation (NCDOT) has assured the USDOT that, as a condition to receiving federal financial assistance, NCDOT will comply with Title VI of the Civil Rights Act of 1964 and all requirements imposed by Title 49 CFR part 21 and related nondiscrimination authorities to ensure that no person shall, on the ground of race, color, national origin, limited English proficiency, sex, age, or disability (including religion/creed or income-level, where applicable), be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any programs, activities, or services conducted or funded by NCDOT. Contractors and other organizations under contract or agreement with NCDOT must also comply with Title VI and related authorities, therefore:

- (a) During the performance of this contract or agreement, contractors (e.g., subcontractors, consultants, vendors, prime contractors) are responsible for complying with NCDOT's Title VI Program. Contractors are not required to prepare or submit Title VI Programs. To comply with this section, the prime contractor shall:
  - 1. Post NCDOT's Notice of Nondiscrimination and the Contractor's own Equal Employment Opportunity (EEO) Policy in conspicuous locations accessible to all employees, applicants and subcontractors on the jobsite.
  - 2. Physically incorporate the required Title VI clauses into all subcontracts on federally-assisted and state-funded NCDOT projects, and ensure inclusion by subcontractors into all lower-tier subcontracts.
  - 3. Required Solicitation Language. The Contractor shall include the following notification in all solicitations for bids and requests for work or material, regardless of funding source:

"The North Carolina Department of Transportation, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 US.C. §§

2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award. In accordance with other related nondiscrimination authorities, bidders and contractors will also not be discriminated against on the grounds of sex, age, disability, low-income level, creed/religion, or limited English proficiency in consideration for an award."

- 4. Physically incorporate the FHWA-1273, in its entirety, into all subcontracts and subsequent lower tier subcontracts on Federal-aid highway construction contracts only.
- 5. Provide language assistance services (i.e., written translation and oral interpretation), free of charge, to LEP employees and applicants. Contact NCDOT OCR for further assistance, if needed.
- 6. For assistance with these Title VI requirements, contact the NCDOT Title VI Nondiscrimination Program at 1-800-522-0453.
- (b) Subrecipients (e.g. cities, counties, LGAs, planning organizations) may be required to prepare and submit a Title VI Plan to NCDOT, including Title VI Assurances and/or agreements. Subrecipients must also ensure compliance by their contractors and subrecipients with Title VI. (23 CFR 200.9(b)(7))
- (c) If reviewed or investigated by NCDOT, the contractor or subrecipient agrees to take affirmative action to correct any deficiencies found within a reasonable time period, not to exceed 90 calendar days, unless additional time is granted by NCDOT. (23 CFR 200.9(b)(15))
- (d) The Contractor is responsible for notifying subcontractors of NCDOT's External Discrimination Complaints Process.
  - 1. Applicability

Title VI and related laws protect participants and beneficiaries (e.g., members of the public and contractors) from discrimination by NCDOT employees, subrecipients and contractors, regardless of funding source.

2. Eligibility

Any person—or class of persons—who believes he/she has been subjected to discrimination based on race, color, national origin, Limited English Proficiency (LEP), sex, age, or disability (and religion in the context of employment, aviation, or transit) may file a written complaint. The law also prohibits intimidation or retaliation of any sort.

3. Time Limits and Filing Options

Complaints may be filed by the affected individual(s) or a representative and must be filed no later than 180 calendar days after the following:

- (i) The date of the alleged act of discrimination; or
- (ii) The date when the person(s) became aware of the alleged discrimination; or
- (iii) Where there has been a continuing course of conduct, the date on which that conduct was discontinued or the latest instance of the conduct.

Title VI and related discrimination complaints may be submitted to the following entities:

- North Carolina Department of Transportation, Office of Civil Rights, Title VI Program, 1511 Mail Service Center, Raleigh, NC 27699-1511; toll free 1-800-522-0453
- ▶ Federal Highway Administration, North Carolina Division Office, 310 New Bern Avenue, Suite 410, Raleigh, NC 27601, 919-747-7010
- > US Department of Transportation, Departmental Office of Civil Rights, External Civil Rights Programs Division, 1200 New Jersey Avenue, SE, Washington, DC 20590; 202-366-4070
- 4. Format for Complaints

Complaints must be in writing and signed by the complainant(s) or a representative, and include the complainant's name, address, and telephone number. Complaints received by fax or e-mail will be acknowledged and processed. Allegations received by telephone will be reduced to writing and provided to the complainant for confirmation or revision before processing. Complaints will be accepted in other languages, including Braille.

- 5. Discrimination Complaint Form Contact NCDOT Civil Rights to receive a full copy of the Discrimination Complaint Form and procedures.
- 6. Complaint Basis

Allegations must be based on issues involving race, color, national origin (LEP), sex, age, disability, or religion (in the context of employment, aviation or transit). "Basis" refers to the complainant's membership in a protected group category.

COMPLAINT BASIS					
Protected Categories	Definition	Examples	Applicable Nondiscrimination Authorities		
Race and Ethnicity	An individual belonging to one of the accepted racial groups; or the perception, based usually on physical characteristics that a person is a member of a racial group	Black/African American, Hispanic/Latino, Asian, American Indian/Alaska Native, Native Hawaiian/Pacific Islander, White	Title VI of the Civil Rights Act of 1964; 49 CFR Part 21; 23 CFR 200; 49 U.S.C. 5332(b); 49 U.S.C. 47123. <i>(Executive Order 13166)</i>		
Color	Color of skin, including shade of skin within a racial group	Black, White, brown, yellow, etc.			
National Origin (Limited English Proficiency)	Place of birth. Citizenship is not a factor. ( <i>Discrimination based</i> on language or a person's accent is also covered)	Mexican, Cuban, Japanese, Vietnamese, Chinese			
Sex	Gender. The sex of an individual. <i>Note:</i> Sex under this program does not include sexual orientation.	Women and Men	1973 Federal-Aid Highway Act; 49 U.S.C. 5332(b); 49 U.S.C. 47123.		
Age	Persons of any age	21-year-old person	Age Discrimination Act of 1975 49 U.S.C. 5332(b); 49 U.S.C. 47123.		
Disability	Physical or mental impairment, permanent or temporary, or perceived.	Blind, alcoholic, para-amputee, epileptic, diabetic, arthritic	Section 504 of the Rehabilitation Act of 1973; Americans with Disabilities Act of 1990		

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Religion (in the context of employment) ( <i>Religion/ Creed in all aspects of</i> <i>any aviation or transit-related</i> <i>construction</i> )	An individual belonging to a religious group; or the perception, based on distinguishable characteristics that a person is a member of a religious group. In practice, actions taken as a result of the moral and ethical beliefs as to what is right and wrong, which are sincerely held with the strength of traditional religious views. <i>Note:</i> Does not have to be associated with a recognized religious group or church; if an individual sincerely holds to the belief, it is a protected religious practice.	Muslim, Christian, Sikh, Hindu, etc.	Title VII of the Civil Rights Act of 1964; 23 CFR 230; FHWA-1273 Required Contract Provisions. (49 U.S.C. 5332(b); 49 U.S.C. 47123)
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#### (3) Pertinent Nondiscrimination Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest agrees to comply with the following non-discrimination statutes and authorities, including, but not limited to:

- (a) Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- (b) The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- (c) Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- (d) Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability) and 49 CFR Part 27;
- (e) The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- (f) Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- (g) The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- (h) Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- (i) The Federal Aviation Administration's Nondiscrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- (j) Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Nondiscrimination against minority populations by discouraging programs, policies, and activities with

disproportionately high and adverse human health or environmental effects on minority and low-income populations;

- (k) Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- (1) Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).
- (m)Title VII of the Civil Rights Act of 1964 (42 U.S.C. § 2000e et seq., Pub. L. 88-352), (prohibits employment discrimination on the basis of race, color, religion, sex, or national origin).

#### (4) Additional Title VI Assurances

- \*\**The following Title VI Assurances (Appendices B, C and D) shall apply, as applicable* (a) Clauses for Deeds Transferring United States Property (1050.2A, Appendix B)
- The following clauses will be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of Assurance 4.

NOW, THEREFORE, the U.S. Department of Transportation as authorized by law and upon the condition that the North Carolina Department of Transportation (NCDOT) will accept title to the lands and maintain the project constructed thereon in accordance with the North Carolina General Assembly, the Regulations for the Administration of the Federal-Aid Highway Program, and the policies and procedures prescribed by the Federal Highway Administration of the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the U.S Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. § 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the NCDOT all the right, title and interest of the U.S. Department of Transportation in and to said lands described in Exhibit A attached hereto and made a part hereof.

#### (HABENDUM CLAUSE)

TO HAVE AND TO HOLD said lands and interests therein unto the North Carolina Department of Transportation (NCDOT) and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the NCDOT, its successors and assigns.

The NCDOT, in consideration of the conveyance of said lands and interests in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (1) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [,] [and]\* (2) that the NCDOT will use the lands and interests in lands and interests in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended [, and (3) that in the event of breach of any of the above-mentioned nondiscrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said land, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the U.S. Department of Transportation and its assigns as such interest existed prior to this instruction].\*

(\*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.)

- (b) Clauses for Transfer of Real Property Acquired or Improved Under the Activity, Facility, or Program (1050.2A, Appendix C) The following clauses will be included in deeds, licenses, leases, permits, or similar instruments entered into by the North Carolina Department of Transportation (NCDOT) pursuant to the provisions of Assurance 7(a):
  - 1. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add "as a covenant running with the land"] that:
    - (i.) In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.
  - 2. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued. \*
  - 3. With respect to a deed, in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the NCDOT and its assigns. \*

(\*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

- (c) Clauses for Construction/Use/Access to Real Property Acquired Under the Activity, Facility or Program (1050.2A, Appendix D)
   The following clauses will be included in deeds, licenses, permits, or similar instruments/ agreements entered into by the North Carolina Department of Transportation (NCDOT) pursuant to the provisions of Assurance 7(b):
  - The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended, set forth in this Assurance.
  - 2. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above Non¬ discrimination covenants, the NCDOT will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued. \*
  - 3. With respect to deeds, in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will there upon revert to and vest in and become the absolute property of the NCDOT and its assigns. \*

(\*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

## **SSP-17**

#### STANDARD SPECIAL PROVISION

#### **ON-THE-JOB TRAINING**

(10-16-07) (Rev. 4-21-15)

#### <u>D IRAINING</u>

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#### Description

The North Carolina Department of Transportation will administer a custom version of the Federal On-the-Job Training (OJT) Program, commonly referred to as the Alternate OJT Program. All contractors (existing and newcomers) will be automatically placed in the Alternate Program. Standard OJT requirements typically associated with individual projects will no longer be applied at the project level. Instead, these requirements will be applicable on an annual basis for each contractor administered by the OJT Program Manager.

On the Job Training shall meet the requirements of 23 CFR 230.107 (b), 23 USC – Section 140, this provision and the On-the-Job Training Program Manual.

The Alternate OJT Program will allow a contractor to train employees on Federal, State and privately funded projects located in North Carolina. However, priority shall be given to training employees on NCDOT Federal-Aid funded projects.

#### **Minorities and Women**

Developing, training and upgrading of minorities and women toward journeyman level status is a primary objective of this special training provision. Accordingly, the Contractor shall make every effort to enroll minority and women as trainees to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

#### **Assigning Training Goals**

The Department, through the OJT Program Manager, will assign training goals for a calendar year based on the contractors' past three years' activity and the contractors' anticipated upcoming year's activity with the Department. At the beginning of each year, all contractors eligible will be contacted by the Department to determine the number of trainees that will be assigned for the upcoming calendar year. At that time the Contractor shall enter into an agreement with the Department to provide a self-imposed on-the-job training program for the calendar year. This agreement will include a specific number of annual training goals agreed to by both parties. The number of training assignments may range from 1 to 15 per contractor per calendar year. The Contractor shall sign an agreement to fulfill their annual goal for the year.

#### **Training Classifications**

The Contractor shall provide on-the-job training aimed at developing full journeyman level workers in the construction craft/operator positions. Preference shall be given to providing training in the following skilled work classifications:

Equipment OperatorsOffice EngineersTruck DriversEstimatorsCarpentersIron / Reinforcing Steel WorkersConcrete FinishersMechanicsPipe LayersWelders

The Department has established common training classifications and their respective training requirements that may be used by the contractors. However, the classifications established are not all-inclusive. Where the training is oriented toward construction applications, training will be allowed in lower-level management positions such as office engineers and estimators. Contractors shall submit new classifications for specific job functions that their employees are performing. The Department will review and recommend for acceptance to FHWA the new classifications proposed by contractors, if applicable. New classifications shall meet the following requirements:

Proposed training classifications are reasonable and realistic based on the job skill classification needs, and

The number of training hours specified in the training classification is consistent with common practices and provides enough time for the trainee to obtain journeyman level status.

The Contractor may allow trainees to be trained by a subcontractor provided that the Contractor retains primary responsibility for meeting the training and this provision is made applicable to the subcontract. However, only the Contractor will receive credit towards the annual goal for the trainee.

Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman level status or in which they have been employed as a journeyman.

#### **Records and Reports**

The Contractor shall maintain enrollment, monthly and completion reports documenting company compliance under these contract documents. These documents and any other information as requested shall be submitted to the OJT Program Manager.

Upon completion and graduation of the program, the Contractor shall provide each trainee with a certification Certificate showing the type and length of training satisfactorily completed.

#### **Trainee Interviews**

All trainees enrolled in the program will receive an initial and Trainee/Post graduate interview conducted by the OJT program staff.

#### Trainee Wages

Contractors shall compensate trainees on a graduating pay scale based upon a percentage of the prevailing minimum journeyman wages (Davis-Bacon Act). Minimum pay shall be as follows:

60 percent	of the journeyman wage for the first half of the training period
75 percent	of the journeyman wage for the third quarter of the training period
90 percent	of the journeyman wage for the last quarter of the training period

In no instance shall a trainee be paid less than the local minimum wage. The Contractor shall adhere to the minimum hourly wage rate that will satisfy both the NC Department of Labor (NCDOL) and the Department.

#### Achieving or Failing to Meet Training Goals

The Contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and who receives training for at least 50 percent of the specific program requirement. Trainees will be allowed to be transferred between projects if required by the Contractor's scheduled workload to meet training goals.

If a contractor fails to attain their training assignments for the calendar year, they may be taken off the NCDOT's Bidders List.

#### **Measurement and Payment**

No compensation will be made for providing required training in accordance with these contract documents.

R-2511

## GT-0.1

## **PROJECT SPECIAL PROVISIONS**

## GEOTECHNICAL

ROCK EMBANKMENTS (SPECIAL)	GT-1.1	- GT-1.2
STANDARD SHORING (10/19/2021)	GT-2.1	- GT-2.4

DocuSigned by: Geotechnical Engineering Unit E06538624A11498... 01/07/2022

#### **ROCK EMBANKMENTS:**

### (SPECIAL)

### Description

Construct rock embankments in accordance with the contract. 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 Type 2 geotextile for filtration geotextiles. Use Class 2 rip rap material for rock embankments. Use Class A 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*. Place Class 2 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.

Before placing embankment fill material or filtration geotextiles over rock embankments, fill voids in the top of rock embankments with Class A rip rap and No. 57 stone. Place and compact Class A rip rap first. 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 filtration geotextiles on top of Class 2, rip rap and No. 57 stone in accordance with Article 270-3 of the *Standard Specifications* before placing embankment fill material.

## **Measurement and Payment**

*Rip Rap, Class 2, Rip Rap, Class A* and #57 *Stone* will be measured and paid in tons. Select material and rip rap will be measured by weighing material and rip rap in trucks in accordance with Article 106-7 of the *Standard Specifications*. The contract unit prices for *Rip Rap, Class 2, Rip Rap, Class A* and #57 *Stone* 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

Rip Rap, Class 2 Rip Rap, Class A #57 Stone Geotextile for Rock Embankments



Pay Unit Ton Ton Ton Square Yard

## **STANDARD SHORING:**

### 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	1000-6
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 5 geotextile for geotextile reinforcement with a mass per unit area of at least 8 oz/sy in accordance with ASTM D5261. 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.



DocuSigned by: Scott A. Hidden F760CAEB96FC4D3... 8/31/2021



DocuSigned by: Matthew V. Springer BC60F6E3B584403... 8/27/2020

# **POLYUREA PAVEMENT MARKING MEDIA AND THICKNESS:** (08-27-20)

Amend the NCDOT 2018 Standard Specifications as follows:

Page 12-8, Subarticle 1205-5(B), lines 14-16, replace with the following:

Produce polyurea pavement marking lines that have a minimum dry thickness of 20 mils above the pavement surface when placed on concrete and asphalt pavements. Produce polyurea pavement marking lines that have a minimum dry thickness of 30 mils above the pavement surface on textured surfaces such as OGFC and on surfaces where the polyurea will be placed over a previously removed pavement marking.

**Page 12-9,** replace **Table 1205-4 Minimum Reflectometer Requirement for Polyurea** with the following:

TABLE 1205-4 MINIMUM REFLECTOMETER REQUIREMENTS FOR POLYUREA		
Item	Color	Reflectivity
Standard Glass Beads	White	375 mcd/lux/m <sup>2</sup>
	Yellow	250 mcd/lux/m <sup>2</sup>

The installer may choose to use an AASHTO Type 4/Type 1 or AASHTO Type 3/Type 1 double drop system, but no price adjustment will be made, and these systems will be incidental to the polyurea pavement marking.

Pay Item

Pay Unit

Polyurea Pavement Marking Lines,\_\_\_\_",\_\_\_\_mils (Standard Glass Beads) Linear Foot

## PROJECT SPECIAL PROVISIONS

Utility Construction 2/2/2022

RK&K 8601 Six Forks Road Forum 1, Suite 700 Raleigh, NC 27615



The proposed utility construction shall meet the NCDOT 2018 "Standard Specifications for Roads and Structures" with amendments noted below.

Contractor shall coordinate closely with NCDOT and Utility owners during installation of water and sanitary sewer lines for any necessary shutdowns or by-pass pumping.

## **Revise the 2018 Standard Specifications as follows:**

**Page 15-1, Sub-article 1500-2 Cooperation with the Utility Owner, paragraph 2:** add the following sentences:

The waterline utility owner is Beaufort County Water District. The contact person is Erick Jennings and he can be reached by phone at 252-402-6547. A Beaufort County representative shall be present to witness the pressure testing, chlorination, collection of bacteriological samples and flushing of all new waterlines.

**Page 15-2, Sub-article 1500-8 Locating and Marking, paragraph 1:** replace paragraph 1 with:

Contractor shall install marking tape made of two (2") inch wide, electromagnetic detectable, metallic material, which shall read "CAUTION: BURIED WATER LINE BELOW". Tape shall be installed approximately one (1') foot deep and for the entire length of all PVC water main installed.

## **Measurement and Payment:**

Payment for water main marker (see detail on plan sheet UC-3C) shall be per each and paid for under the contract price for "Water Main Marker". Water main markers shall be installed every 350 feet as shown on plan sheets. Such price and payments will be full compensation for all labor, materials, and any incidentals necessary to complete the work. Water Main marker will be measured and paid for under the contract item "Water Main Marker".

#### **Measurement and Payment:**

Payment for water valve marker (see detail on plan sheet UC-3B) shall be per each and paid for under the contract price for "Water Valve Marker". Water valve markers shall be installed at each valve as shown on plan sheets. Such price and payments will be full compensation for all labor, materials, and any incidentals necessary to complete the work. Water valve marker will be measured and paid for under the contract item "Water Valve Marker".

<u>Pay Item:</u>	<u>Pay Unit</u>
Water Main Marker	Each
Water Valve Marker	Each

## Page 15-5, Sub-article 1510-2 Materials, line 36:

replace line 36 with:

All fittings for pipe three (3") inches in diameter and larger shall be ductile iron, mechanical joint, and be equipped with retainer rings.

**Page 15-8, Section 1515 Utility Controls:** The Contractor's attention is directed to this section for the installation of 2" Post Hydrant.

Contractor shall install 2" Post Hydrant per 2" Post Hydrant detail located on plan sheet UC-3C. The 2" Post Hydrant shall be approved by Beaufort County.

## **Measurement and Payment:**

Payment for 2" Post Hydrant shall be per each and paid for under the contract price for "2" Post Hydrant ". Such price and payments will be full compensation for all labor, materials, excavation, and any incidentals necessary to complete the work. The 2" Post Hydrant will be measured and paid for under the contract item "2" Post Hydrant ".

## Pay Item:

## <u>Pay Unit</u>

2" Post Hydrant

Each

## UC-3

County: Martin

#### PROJECT SPECIAL PROVISIONS Utility Construction



#### **UTILITY OWNER**

Water Main: Martin County Ed Warren, Martin County Water Manager PO Box 706 305 E. Main Street Williamston, NC 27892 Office: 252-789-4345 Email: ewarren@martincountyncgov.com

## Revise the 2018 NCDOT Standard Specifications as follows:

**Page 10-62, Sub-Article 1036-3 Plastic Pipe, Sub-Article (A) PVC Pipe** Add the following section (C) Fusible PVC:

## (C) FUSIBLE POLYVINYLCHLORIDE (FPVC) PRESSURE PIPE

- A. Fusible polyvinylchloride pipe shall conform to AWWA C900 standard.
- B. Outside diameter shall conform to ductile-iron pipe.
- C. Pipe shall be pressure class 235 with a standard dimension ratio of DR 18.
- D. Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.

## UC-4

County: Martin

#### PROJECT SPECIAL PROVISIONS Utility Construction

- E. Fusible polyvinylchloride pipe shall be manufactured in a standard 40' or 45' nominal length, or custom lengths as specified.
- F. Fusible polyvinylchloride pipe shall be green in color for wastewater use.
- G. Pipe shall be marked as follows:
  - 1. Nominal pipe size
  - 2. PVC
  - 3. Dimension Ratio, Standard Dimension Ratio, or Schedule
  - 4. AWWA pressure class
  - 5. AWWA standard designation number
  - 6. Extrusion production-record code
  - 7. Trademark or trade name
  - 8. Cell Classification 12454 and/or PVC material code 1120 may also be included
- H. Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.
- I. Fittings shall conform to AWWA C110, or C153 and have mechanical joints and be restrained with series 2000PV Megalug mechanical joint restraint or approved equal. Fittings shall be made of gray-iron or ductile-iron. Interior of fittings shall be lined with 401-type ceramic epoxy.
  - 1. Bolts and nuts for buried service shall be made of non-corrosive, highstrength, low-alloy steel having the characteristics specified in ANSI/AWWA C111/A21.11, regardless of any other protective coating.
- J. Encase fittings in polyethylene conforming to AWWA C105 where indicated on the Drawings.
- K. Fusion joints
  - 1. Unless otherwise specified, fusible polyvinylchloride pipe lengths shall be assembled in the field with butt-fused joints. The Contractor shall follow the pipe supplier's written guidelines for this procedure. All fusion joints shall be completed as described in this specification.
- L. Fusion Process
  - 1. General
    - a. Fusible polyvinylchloride pipe will be handled in a safe and nondestructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.
    - b. Fusible polyvinylchloride pipe will be fused by qualified fusion technicians, as documented by the pipe supplier.
    - c. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine.

## UC-5

County: Martin

### PROJECT SPECIAL PROVISIONS Utility Construction

- d. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process. Fusion machines must incorporate the following elements:
  - HEAT PLATE Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly; cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines.
  - 2) CARRIAGE Carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to carriage travel.
  - 3) GENERAL MACHINE Overview of machine body shall yield no obvious defects, missing parts, or potential safety issues during fusion.
  - 4) DATA LOGGING DEVICE Datalogging device operations and maintenance manual shall be with the unit at all times. If fusing for extended periods of time, an independent 110V power source shall be available to extend battery life.
- e. Other equipment specifically required for the fusion process shall include the following:
  - 1) Pipe rollers shall be used for support of pipe to either side of the machine
  - 2) A weather protection canopy that allows full machine motion of the heat plate, fusion assembly and carriage shall be provided for fusion in inclement, extreme temperatures, and /or windy weather, per the pipe supplier's recommendations.
  - 3) An infrared (IR) pyrometer for checking pipe and heat plate temperatures.
  - 4) Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.
  - 5) Facing blades specifically designed for cutting fusible polyvinylchloride pipe shall be used.
- 2. Joint Recording
  - a. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine. The fusion data logging and joint report shall be generated by software developed specifically for the butt-fusion of fusible polyvinyl chloride pipe. The software shall register and/or record the parameters required by the pipe supplier and these specifications.

## UC-6

County: Martin

## PROJECT SPECIAL PROVISIONS

**Utility Construction** 

Data not logged by the data logger shall be logged manually and be included in the Fusion Technician's joint report.

- b. Fusion joint documentation shall include the following:
  - 1) Pipe size and Thickness
  - 2) Machine Size
  - 3) Fusion Technician Identification
  - 4) Job Identification
  - 5) Fusion Joint Number
  - 6) Fusion, Heating, and Drag Pressure Settings
  - 7) Heat Plate Temperature
  - 8) Time Stamp
  - 9) Heating and Cool Down Time of Fusion
  - 10) Ambient Temperature

**Page 15-1, Sub-Article 1500-2 Cooperation with the Utility Owner, paragraph 2:** Add the following sentences:

The utility owner is Martin County. Contact information can be found on page UC-1 under "Utility Owner".

**Page 15-1, Sub-Article 1500-2 Cooperation with the Utility Owner, paragraph 4:** Delete "24 hours" and replace with "48 hours".

## Page 15-2, Sub-Article 1500-7 Submittals and Records

Add the following to the last paragraph:

Certified surveyed "As built" plans and profiles, sealed by a Professional Land Surveyor, provided to the County and by the Engineer upon completion and acceptance of the public main by the County and completion of private systems. The surveyed "as built" plans shall have North Carolina Geodetic Survey grid coordinates to all meter boxes, valves, manholes, and mains along with the depth information. The water permit number information must also be included. Surveyed "As built" plans of installed utilities shall be furnished to the County prior to issuance of the letter of acceptance. All service stubs shall be shown on the surveyed "as built" plans.

Certified surveyed "As Builts" shall be provided in a digital format. The digital file of utilities needs to show the overall water and sewer system layout along with the property or subdivision boundaries and connecting manhole. The water distribution system drawings should show mains sizes, material, hydrants, valves, blow-off assemblies, and any other relevant information (backflow preventers, air release valves, etc.). The digital file should be delivered in DXF format. If this is not possible, then, DWG, DGN, and SHP are also acceptable formats.

## **UC-7**

County: Martin

### PROJECT SPECIAL PROVISIONS Utility Construction

When brand names of materials have been determined, the Contractor shall obtain approval, through the engineer and the owner prior to their use and/or installation.

Then Contractor shall furnish, but is not limited to furnishing, catalog cuts and/or shop drawings of the materials. Thirty days shall be allowed for the engineer's review of each submittal eight copies of each catalog cut and/or shop drawing (signed and sealed) shall be submitted.

## Page 15-2, Sub-Article 1500-9 Placing Pipelines into Service

Add the following to the last paragraph:

Obtain approval from the County and NCDEQ Public Water Supply Section prior to placing a new water line into service.

## Page 15-4, Sub-Article 1505-3 (D) Pipe Laying:

Add the following to the last paragraph:

Pipe fittings shall be set at locations shown on the plans with care being taken to properly "bell-up" joints and support the body of the fitting.

## Page 15-4, Sub-Article 1505-3 (E), Thrust Restraint:

Note: Thrust restraints shall be installed as shown on the drawings.

All fittings or components subject to hydrostatic thrust shall be securely anchored by the use of concrete thrust blocks poured in place, unless otherwise directed by the engineer. The reaction areas required for these thrust blocks shall be given to the contractor by the inspector, and the contractor shall install the blocks according to directions provided by the inspector. Where concrete must be reinforced, the contractor shall furnish such reinforcing as is required.

Required reaction bearing areas will be taken from the schedule herein. See CORPUD Standard Details. Areas given are vertical plans measured in solid material normal to the thrust line of the fitting.

Material for reaction blocking shall be transit-mixed concrete. This concrete shall have a twenty-eight day compressive strength of 2500 psi. Any metal used to resist thrust which is not encased in concrete shall be "hot dipped" galvanized.

Valves on water lines shall be anchored with thrust collars as shown on Standard Details.

All dead-end lines shall be plugged with mechanical joint plugs or caps and anchored by using thrust collars and blocking as shown Standard Details.

## Page 15-5, Sub-Article 1510-2, Materials:

Add the following after the paragraph:

## **UC-8**

County: Martin

### PROJECT SPECIAL PROVISIONS Utility Construction

Ductile iron restrained joint water pipe shall be installed in accordance with the applicable utility provisions herein, as shown on the utility plans and/or as directed by the Engineer.

Ductile iron restrained joint water pipe shall be, at a minimum pressure class 350, and shall conform to ANSI A21.51 (AWWA C151). Push-on joints for such pipe shall be in accordance with ANSI A21.11 (AWWA C111). Pipe thickness shall be designed in accordance with ANSI A21.50 (AWWA C150) and based on laying conditions and internal pressures as stated on the plans.

Cement mortar lining and seal coating for pipe shall be in accordance with ANSI A21.4 (AWWA C104). Bituminous outside coating shall be in accordance with ANSI A21.51 (AWWA C151).

All ductile iron restrained joint water pipe shall be installed in accordance with laying condition Type 2 as stated in ANSI A21.51 (AWWA C151) unless otherwise shown on the plans.

Ductile iron restrained joint pipe shall be manufactured to the lengths required. Cutting of ductile iron pipe by the contractor will not be allowed.

**Page 15-6, Sub-Article 1510-3 (B), Testing and Sterilization, tenth paragraph:** Add the following after the paragraph:

Water utility owner must witness pressure testing and obtain their own bacteriological samples (if desired). Chlorinated water must be neutralized in accordance with State of North Carolina requirements prior to being discharged into the environment.

## Page 15-6, Sub-Article 1505-3 (A), General

Add the following after the last paragraph:

The Contractor shall be responsible for field verifying location, size, type and elevation of all underground utilities, as well as reconnecting any water and/or sanitary sewer services disturbed during construction, even if they are not shown on the plans. The water line shall be installed as to provide a minimum of 3 feet of coverage above the top of pipe from finished grade.

The Contractor is herein forewarned as to the possibility of having to vary the depth of the pipeline installation to achieve minimum clearance of existing or proposed utilities or storm drainage while maintaining minimum cover specified (whether existing or proposed pipelines, conduits, cables, mains, storm drainage are shown on the plans or not).

The existing water utilities belong to Martin County. The Contractor shall provide access for the owner's representatives to all phases of construction. It shall be the contractor's responsibility to notify the Water Department at least twenty-four hours in advance of beginning any construction work on any project. The contractor must call the Water

## UC-9

County: Martin

## PROJECT SPECIAL PROVISIONS Utility Construction

Department at 252-789-4345 and give the location, project name, individual's name, company name, start date and indicate if it involves water extensions.

"Field changes" are not considered approved by the Water Department unless revised plans have been submitted to the Water Department, reviewed and approved. Therefore, the contractor that proceeds with construction prior to this approval, is at his/her own risk.

The County does not provide free or otherwise unmetered construction water for any construction project. Hydrant meters may only be moved with express written permission of the Water Department.

Meters must be brought to the department for monthly reading.

Hydrant meter assemblies are subject to availability.

Customers will be billed on a monthly cycle by Utility Billing for all water usage at the current applicable rates.

Upon return of the hydrant meter assembly (and associated equipment) deposits shall be refunded to the customer within thirty (30) days, providing the following has occurred:

Hydrant meter assembly (and associated equipment) have been returned in good working condition, with no excessive wear or damage

Customer has paid for any damaged and/or missing equipment

All outstanding water usage and rental charges for the hydrant meter assembly have been paid in full by the customer.

## Page 15-6, Sub-Article 1505-3 (B), Testing and Sterilization

Add the following after the last paragraph:

## Guarantee:

General Water Main Testing Sequence:

Water mains shall be tested in the following general sequence:

a) "Pigging" main (mains with gate valves)

b) Flush the main (all flush water shall be dechlorinated using methods acceptable to the Water Department);

c) Perform the hydrostatic tests;

d) Introduce the appropriate amount of chlorine by tapping the main;

e) Hold the chlorine solution in the main for at least twenty-four hours and no more than seventy-two hours;

## UC-10

County: Martin

## PROJECT SPECIAL PROVISIONS

**Utility Construction** 

f) Flush the main (all flush water shall be dechlorinated using methods acceptable to the Water Department);

g) Sample for the bacteriological tests; and

h) Water mains shall be placed into service within 48 hours of meeting bacteriological analysis requirements.

## Hydrostatic Tests:

a. All main installations including private distribution and fire lines to the buildings shall be pressure tested between each main line valve in accordance with AWWA C-600-87. The test shall be performed using a suitable pump and an accurate pressure gauge. Immediately upon completion of a section of main, 200 psi ( $\pm$  5 psi) of pressure shall be applied and held for two hours. The acceptable leakage rate shall not exceed .082 gallons per inch of pipe diameter per 1,000 feet of pipe per hour. Failure of the water main to comply with the above acceptable leakage rate, shall require the contractor to replace any defective materials to insure a watertight installation. If it is deemed that the existing blowoff valve is the cause of failure, the party responsible for the water main extension shall also be responsible for adding a valve at that location and abandoning the existing valve. After any inadequacies have been corrected, the leakage rate will again be tested. This test shall be repeated until that portion of main is brought to compliance with the permissible leakage rate.

b. Prerequisite conditions for inspection prior to testing shall be as follows:

1) Valves shall be properly located, operable and at correct elevation. Valve boxes shall be centered over operating nuts, and the top of the box shall be at proper elevation.

2) Lines shall be properly vented where entrapped air is a consideration.

## Chlorination:

a. All additions or replacements to the water system, including fire lines and backflow prevention devices, shall be chlorinated before being placed in service. Such chlorination must take place under the supervision of an inspector.

b. Pipe subjected to contaminating materials shall be treated as directed by the Water Department or Engineer. Should such treatment fail to cleanse the pipe, replacement shall be required. The County shall bear no portion of any cost sustained by the contractor in meeting this specification.

c. Chlorination of a completed line shall be carried out after completing the pressure test and in the following manner.

1) Taps will be made at the control valve at the upstream end of the line and at all extremities of the line including valves. These taps shall be located in such a manner as to allow HTH solution to be fed into all parts of the line.

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County: Martin

#### PROJECT SPECIAL PROVISIONS Utility Construction

2) A solution of water containing high test hypochlorite (70%) available chlorine or chlorine gas solution shall be introduced into the line by regulated pumping at the control valve tap. The solution shall be of such a concentration that the line shall have a uniform concentration of 50 ppm total chlorine immediately after chlorination. The chart below shows the required quantity of 70% HTH compound to be contained in solution in each 1000-foot section of line to produce the desired concentration of 50 ppm.

	i inte to produce due desi
Pounds H	igh
Test Hypoch	nlorite (70%)
Pipe Size	Per 1000 Feet of Line
6"	0.88
8"	1.56
10"	2.42
12"	3.50

3) The HTH solution shall be circulated in the main by opening the control valve and systematically manipulating hydrants and taps at the line extremities. The HTH solution must be pumped in at a constant rate for each discharge rate in order that a uniform concentration will be produced in the mains.

4) Services shall be sterilized by methods acceptable to the Water Department Manager or Engineer, and the contractor shall have the same responsibility for laterals as for mains in regard to bearing full cost of any corrective measures needed to comply with bacteriological or other requirements.

5) HTH solution shall remain in lines for no less than twenty-four hours, unless otherwise directed by the Water Department or Engineer.

6) Extreme care will be exercised at all times to prevent the HTH solution from entering existing mains.

## **Bacteriological Testing:**

a. Free residual chlorine after twenty-four hours shall be at least 10 ppm, or the Water Department or Engineer will require the lines be rechlorinated.

b. Mains will be flushed with a blow-off assembly of sufficient size to effectively clean the main, see Standard Details and Specifications. Flushing of lines may proceed after twenty-four hours, provided the free residual chlorine analysis is satisfactory. Flushing shall be continued until chlorine returns to normal level. In times of water shortages or distribution main problems, the flushing operation may be delayed. The Water Department shall determine when flushing is allowable. The contractor shall advise the inspector prior to the chlorination and flushing so that the inspector can advise the Water Department of the construction location, size and length of mains. All tests will be done in the presence of an

## UC-12

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### PROJECT SPECIAL PROVISIONS Utility Construction

inspector. Flushing will be for short duration. Sufficient precautions must be taken to the satisfaction of the inspector to ensure that the impact of the water is absorbed and the water is conveyed without erosion or property drainage. All flush water shall be dechlorinated using methods acceptable to the County.

c. After flushing is completed, the Water Department (or their designee) shall collect samples for turbidity and bacteriological analysis for each section of pipe between main line valves. Sample point locations shall be determined by a representative of the engineer or owner. A custody seal shall be placed on each set of turbidity and bacteriological bottles. A chain of custody form must be completed for sample set(s) collected and must be delivered along with the sample(s). A turbidity test will be done. If the turbidity exceeds 1 NTU, the sample fails and a bacteriological test will not be set up. The Water Department will perform the turbidity and bacteriological analysis.

d. Samples will be accepted between 8:00 AM and 12 NOON and 1PM and 3:30 PM Monday through Thursday, excluding holidays. Special arrangements may be made for samples to be accepted outside of this time frame by calling the laboratory in advance.

e. In the event that two successive bacteriologic tests fail, that section of the main shall be rechlorinated by the contractor and new tests performed prior to moving to the next section of main.

## Page 15-7, Sub-Article 1515-2, Materials:

Add the following after the last paragraph:

The contractor shall be responsible for the shipping and storing of all utility construction materials. The contractor shall replace any material which is damaged or defective.

The loading and unloading of all pipe, valves, and other accessories shall be in accordance with the manufacturer's recommended practices and shall at all times be performed with care to avoid any damage to the material.

All materials, once on the job site, shall be stored in accordance with the manufacturer's recommendations.

All pipes shall be kept free of dirt and other debris. Any damage relating to the coating of the various materials for water mains shall be repaired in a manner approved by the County.

The contractor shall be responsible for safeguarding and protecting all material and equipment stored on the job site. The contractor shall be responsible for the storage of materials in a safe and workmanlike manner to prevent injuries, during and after working hours, until the project is complete.

## Page 15-8, Sub-Article 1515-3 (A), Valves:

Add the following after the last paragraph:

## UC-13

County: Martin

### PROJECT SPECIAL PROVISIONS Utility Construction

No valve in the existing County system shall be operated without following the procedure outlined below. Failure to comply with these requirements shall be grounds for suspension of pipe-laying operations until written assurances can be obtained from a company official that such noncompliance will not occur again.

Notification procedures are as follows:

a. The Contractor shall notify the Water Department in order to request the operation of any valves. At least forty-eight hours' notice should be given to the Department, and at least twenty-four hours' notice must be given to each consumer affected by a water cutoff. The Contractor is responsible for notifying the affected consumers. All valve operations shall be done by a Department valve crew or by the County's representative.

b. The Contractor shall provide the following information when calling for the valve operation:

- (1) Name of person calling
- (2) Name of company
- (3) Telephone number of company
- (4) Location of valve
- (5) Reason for requesting operating and whether to be closed or open
- (6) Time valve to be opened or closed
- (7) Approximate time water line to be out of service.

c. Each time a Contractor needs a valve operated, he/she shall again secure permission, following the steps outlined.

d. System valves shall be defined as any valve, which has main pressure against either gate face. Newly installed tapping valves and control valves to networks not yet accepted for service are considered as system valves. Valves within a network still under construction are not considered as system valves.

In case of an emergency, the Contractor shall be allowed to take such steps with the valves and hydrants as are necessary for the protection of life and property. Notification must be made after a break in a 4 inch or larger water main, or where ruptured smaller lines are causing property damage. After an emergency valve operation, the Contractor shall notify the Water Department and give the details for that operation.

Hydrants shall not be operated without following the above procedures relative to requesting operating permission and reporting emergency use of hydrant.

Valves shall be set at locations shown on the plans with care being taken to support the valve properly and to accurately position the valve box over the operating nut of the valve.

## UC-14

County: Martin

## PROJECT SPECIAL PROVISIONS Utility Construction

Where pavement is existing, the box shall be adjusted to finished street grade and a concrete pad two-feet square and six inches thick shall be poured around the box two inches from the top of finished grade as shown on Standard Details. When valves are located in street rights-of-way, but out of pavement, the boxes shall be adjusted to finished grade and a concrete pad two-feet square and six-inches thick shall be poured around the box one-half inch from the top. When valves are located outside of street rights-of-way, the boxes shall be at finish grade, and a concrete block two-feet square and six-inches thick shall be poured around the box one-half inch from the top. When valves are located outside of street rights-of-way, the boxes shall be at finish grade, and a concrete block two-feet square and six-inches thick shall be poured around the box at grade line. Valve locations out of street rights-of-way shall be marked with a metal post having a minimum diameter of two inches and a minimum bury of three feet with a minimum of three feet exposed. The exposed portion shall be painted bright orange and shall be placed so that a valve operating tool has free operation.

When a tapping sleeve and valve are being used, the valve, sleeve and machine assembly shall be air tested to hold at 200 psi for a five-minute duration in the presence of the inspector prior to drilling or tapping the main. All tap coupons shall be given to the inspector. The valve shall be in the closed position during the testing.

#### Page 15-8, Sub-Article 1530-3 (A), Abandoning Pipe:

Add the following after the last paragraph:

Contractors abandoning water services shall remove the entire service including the corporation cock and insert a plug in the main. When plugging the line is not available, the corporation cock may be turned off, capped, and surrounded with 1 ft 3 inch of concrete. All remaining portions of the service shall be removed from the main to the right of way line and shall be disposed of properly.

## UbO-1

## PROJECT SPECIAL PROVISIONS

Utilities by Others



## General:

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

- Power
  - Dominion Energy- Distribution
  - City of Washington- Distribution
  - Edgecombe/Martin EMC Distribution
- Gas
  - Piedmont Natural Gas
- Telecommunications
  - o CenturyLink

## • CATV

- o Suddenlink
- o MCNC

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

The Contractor's attention is directed to Article 105-8 of the 2018 Standard Specifications.

## UbO-2

## PROJECT SPECIAL PROVISIONS

Utilities by Others

## **Utilities Requiring Adjustment:**

Utility relocations are shown on the Utilities by Others Plans.

### Power –

(Dominion Energy-Distribution)

- Dominion Energy's Distribution relocation work will be completed by June 1, 2022.
- James Pulley (252) 332-1813 / James.A.Pulley@dominionenergy.com

(City of Washington-Distribution)

- City of Washington's Distribution relocation work will be completed by August 1, 2022.
- Bob Thomas (704) 641-8399 / <u>RFT@pecinc.net</u>

(Edgecombe/Martin EMC-Distribution)

- Edgecombe/Martin EMC's Distribution relocation work will be completed by July 1, 2022.
- James Pulley (252) 332-1813 / James.A.Pulley@dominionenergy.com

#### Gas –

(Duke Energy/Piedmont Natural Gas)

- PNG's relocation work was completed December 12, 2020.
- Keith Gualtieri (703) 994-0429 / Keith.Gualtieri@duke-energy.com

## Telecommunications –

(CenturyLink)

- CenturyLink's relocation work will be completed by October 1, 2022.
- Rod Medlin (252) 413-7711 / <u>Rod.M.Medlin@centurylink.com</u>

## CATV –

(Suddenlink)

- Suddenlink's relocation work will be completed by July 1, 2022.
- Scott Barker (252)883-3384 / <u>Scottie.Barker@AlticeUSA.com</u>

(MCNC)

- MCNC's relocation work will be completed by July 1, 2022.
- Terrill Garrison (336) 491-1578 / terrillgarrison@telics.com

### Project Special Provisions Erosion Control

### **STABILIZATION REQUIREMENTS:**

(4-30-2019)

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective April 1, 2019 issued by the North Carolina Department of Environmental Quality Division of Water Resources. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

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

### **SEEDING AND MULCHING:**

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

#### All Roadway Areas

March 1 - August 31		September 1 - February 28	
50#	Tall Fescue	50#	Tall Fescue
10#	Centipede	10#	Centipede
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Waste and Borrow Locations

March 1 – August 31		September 1 - February 28	
75#	Tall Fescue	75#	Tall Fescue
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

(East)

Note: 50# of Bahiagrass may be substituted for either Centipede or Bermudagrass only upon Engineer's request.

Approved Tall Fescue Cultivars	5
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06 Dust	Escalade	Justice	Serengeti
2 <sup>nd</sup> Millennium	Essential	Kalahari	Shelby
3 <sup>rd</sup> Millennium	Evergreen 2	Kitty Hawk 2000	Sheridan
Apache III	Falcon IV	Legitimate	Signia
Avenger	Falcon NG	Lexington	Silver Hawk
Barlexas	Falcon V	LSD	Sliverstar
Barlexas II	Faith	Magellan	Shenandoah Elite
Bar Fa	Fat Cat	Matador	Sidewinder
Barrera	Festnova	Millennium SRP	Skyline
Barrington	Fidelity	Monet	Solara
Barrobusto	Finelawn Elite	Mustang 4	Southern Choice II
Barvado	Finelawn Xpress	Ninja 2	Speedway
Biltmore	Finesse II	Ol' Glory	Spyder LS
Bingo	Firebird	Olympic Gold	Sunset Gold
Bizem	Firecracker LS	Padre	Taccoa
Blackwatch	Firenza	Patagonia	Tanzania
Blade Runner II	Five Point	Pedigree	Trio
Bonsai	Focus	Picasso	Tahoe II
Braveheart	Forte	Piedmont	Talladega
Bravo	Garrison	Plantation	Tarheel
Bullseye	Gazelle II	Proseeds 5301	Terrano
Cannavaro	Gold Medallion	Prospect	Titan ltd
Catalyst	Grande 3	Pure Gold	Titanium LS
Cayenne	Greenbrooks	Quest	Tracer
Cessane Rz	Greenkeeper	Raptor II	Traverse SRP
Chipper	Gremlin	Rebel Exeda	Tulsa Time
Cochise IV	Greystone	Rebel Sentry	Turbo
Constitution	Guardian 21	Rebel IV	Turbo RZ
Corgi	Guardian 41	Regiment II	Tuxedo RZ
Corona	Hemi	Regenerate	Ultimate
Coyote	Honky Tonk	Rendition	Venture
Darlington	Hot Rod	Rhambler 2 SRP	Umbrella
Davinci	Hunter	Rembrandt	Van Gogh
Desire	Inferno	Reunion	Watchdog
Dominion	Innovator	Riverside	Wolfpack II
Dynamic	Integrity	RNP	Xtremegreen
Dynasty	Jaguar 3	Rocket	
Endeavor	Jamboree	Scorpion	

(East)

On cut and fill slopes 2:1 or steeper Centipede shall be applied at the rate of 5 pounds per acre and add 20# of Sericea Lespedeza from January 1 - December 31.

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

## Native Grass Seeding and Mulching

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

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

March 1 - August 31		Septemb	September 1 - February 28	
18#	Creeping Red Fescue	18#	Creeping Red Fescue	
6#	Indiangrass	6#	Indiangrass	
8#	Little Bluestem	8#	Little Bluestem	
4#	Switchgrass	4#	Switchgrass	
25#	Browntop Millet	35#	Rye Grain	
500#	Fertilizer	500#	Fertilizer	
4000#	Limestone	4000#	Limestone	

Approved Creeping Red Fescue Cultivars:

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

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

## Measurement and Payment

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

All areas seeded and mulched shall be tacked with asphalt. Crimping of straw in lieu of asphalt tack shall not be allowed on this project.

## **CRIMPING STRAW MULCH:**

Crimping shall be required on this project adjacent to any section of roadway where traffic is to be maintained or allowed during construction. In areas within six feet of the edge of pavement, straw is to be applied and then crimped. After the crimping operation is complete, an additional application of straw shall be applied and immediately tacked with a sufficient amount of undiluted emulsified asphalt.

Straw mulch shall be of sufficient length and quality to withstand the crimping operation.

Crimping equipment including power source shall be subject to the approval of the Engineer providing that maximum spacing of crimper blades shall not exceed 8".

## **TEMPORARY SEEDING:**

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

### FERTILIZER TOPDRESSING:

Fertilizer used for topdressing on all roadway areas except slopes 2:1 and steeper shall be 10-20-20 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 10-20-20 analysis and as directed.

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

## **SUPPLEMENTAL SEEDING:**

The kinds of seed and proportions shall be the same as specified for *Seeding and Mulching*, with the exception that no centipede seed will be used in the seed mix for supplemental seeding. The rate of application for supplemental seeding may vary from 25# to 75# per acre. The actual rate per acre will be determined prior to the time of topdressing and the Contractor will be notified in writing of the rate per acre, total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for incorporating seed into the soil as to prevent disturbance of existing vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

## **MOWING:**

The minimum mowing height on this project shall be 4 inches.

### LAWN TYPE APPEARANCE:

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

#### **REFORESTATION:**

#### Description

*Reforestation* will be planted within interchanges and along the outside borders of the road, and in other areas as directed. *Reforestation* is not shown on the plan sheets. See the Reforestation Detail Sheet.

All non-maintained riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated with native woody species.

The entire *Reforestation* operation shall comply with the requirements of Section 1670 of the *Standard Specifications*.

#### Materials

*Reforestation* shall be bare root seedlings 12"-18" tall.

#### **Construction Methods**

*Reforestation* shall be planted as soon as practical following permanent Seeding and Mulching. The seedlings shall be planted in a 16-foot wide swath adjacent to mowing pattern line, or as directed.

Root dip: The roots of reforestation seedlings shall be coated with a slurry of water, and either a fine clay (kaolin) or a superabsorbent that is designated as a bare root dip. The type, mixture ratio, method of application, and the time of application shall be submitted to the Engineer for approval.

With the approval of the Engineer, seedlings may be coated before delivery to the job or at the time of planting, but at no time shall the roots of the seedlings be allowed to dry out. The roots shall be moistened immediately prior to planting.

Seasonal Limitations: *Reforestation* shall be planted from November 15 through March 15.

## **Measurement and Payment**

*Reforestation* will be measured and paid for in accordance with Article 1670-17 of the *Standard Specifications*.

## **RESPONSE FOR EROSION CONTROL:**

#### Description

Furnish the labor, materials, tools and equipment necessary to move personnel, equipment, and supplies to the project necessary for the pursuit of any or all of the following work as shown herein, by an approved subcontractor.

Section	Erosion Control Item	Unit
1605	Temporary Silt Fence	LF
1606	Special Sediment Control Fence	LF/TON
1615	Temporary Mulching	ACR
1620	Seed - Temporary Seeding	LB
1620	Fertilizer - Temporary Seeding	TN
1631	Matting for Erosion Control	SY
SP	Coir Fiber Mat	SY
1640	Coir Fiber Baffles	LF
SP	Permanent Soil Reinforcement Mat	SY
1660	Seeding and Mulching	ACR
1661	Seed - Repair Seeding	LB
1661	Fertilizer - Repair Seeding	TON
1662	Seed - Supplemental Seeding	LB
1665	Fertilizer Topdressing	TON
SP	Safety/Highly Visible Fencing	LF
SP	Response for Erosion Control	EA

## **Construction Methods**

Provide an approved subcontractor who performs an erosion control action as described in the NPDES Inspection Form SPPP30. Each erosion control action may include one or more of the above work items.

## **Measurement and Payment**

*Response for Erosion Control* will be measured and paid for by counting the actual number of times the subcontractor moves onto the project, including borrow and waste sites, and satisfactorily completes an erosion control action described in Form 1675. The provisions of Article 104-5 of the *Standard Specifications* will not apply to this item of work.

Payment will be made under:

**Pay Item** 

Response for Erosion Control

ENVIRONMENTALLY SENSITIVE AREAS:

#### Description

This project is located in an *Environmentally Sensitive Area*. This designation requires special procedures to be used for clearing and grubbing, temporary stream crossings, and grading operations within the Environmentally Sensitive Areas identified on the plans and as designated by the Engineer. This also requires special procedures to be used for seeding and mulching and staged seeding within the project.

The Environmentally Sensitive Area shall be defined as a 50-foot buffer zone on both sides of the stream or depression measured from top of streambank or center of depression.

#### **Construction Methods**

(A) Clearing and Grubbing

In areas identified as Environmentally Sensitive Areas, the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Article 200-1 of the *Standard Specifications*. Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.

(B) Grading

Once grading operations begin in identified Environmentally Sensitive Areas, work shall progress in a continuous manner until complete. All construction within these areas shall progress in a continuous manner such that each phase is complete and areas are permanently stabilized prior to beginning of next phase. Failure on the part of the Contractor to complete any phase of construction in a continuous manner in Environmentally Sensitive Areas will be just cause for the Engineer to direct the suspension of work in accordance with Article 108-7 of the *Standard Specifications*.

Pay Unit Each (C) Temporary Stream Crossings

Any crossing of streams within the limits of this project shall be accomplished in accordance with the requirements of Subarticle 107-12 of the *Standard Specifications*.

(D) Seeding and Mulching

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

Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the Environmentally Sensitive Areas.

(E) Stage Seeding

The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes that are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above.

Additional payments will not be made for the requirements of this section, as the cost for this work shall be included in the contract unit prices for the work involved.

## **MINIMIZE REMOVAL OF VEGETATION:**

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

#### **STOCKPILE AREAS:**

The Contractor shall install and maintain erosion control devices sufficient to contain sediment around any erodible material stockpile areas as directed.

#### ACCESS AND HAUL ROADS:

At the end of each working day, the Contractor shall install or re-establish temporary diversions or earth berms across access/haul roads to direct runoff into sediment devices. Silt fence sections that are temporarily removed shall be reinstalled across access/haul roads at the end of each working day.

#### **CONSTRUCTION MATERIALS MANAGEMENT**

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

## Description

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

#### **Polyacrylamides (PAMS) and Flocculants**

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

https://files.nc.gov/ncdeq/Water%20Quality/Environmental%20Sciences/ATU/ApprovedPAMS 4 1 2017.pdf

#### **Equipment Fluids**

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

#### Waste Materials

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

## Herbicide, Pesticide, and Rodenticides

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

## **Concrete Materials**

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

## Earthen Material Stock Piles

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

## Measurement and Payment

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

## WASTE AND BORROW SOURCES:

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

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

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

https://connect.ncdot.gov/resources/roadside/FieldOperationsDocuments/ContractedReclamation Procedures.pdf

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

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## **TEMPORARY DIVERSION:**

This work consists of installation, maintenance, and cleanout of *Temporary Diversions* in accordance with Section 1630 of the *Standard Specifications*. The quantity of excavation for installation and cleanout will be measured and paid for as *Silt Excavation* in accordance with Article 1630-3 of the *Standard Specifications*.

## **CLEAN WATER DIVERSION:**

#### Description

This work consists of installing, maintaining, and removing any and all material required for the construction of clean water diversions. The clean water diversions shall be used to direct water flowing from offsite around/away from specific area(s) of construction.

#### Materials

Refer to Division 10

#### Item

Geotextile for Soil Stabilization, Type 4

#### **Construction Methods**

The Contractor shall install the clean water diversions in accordance with the details in the plans and at locations indicated in the plans, and as directed. Upon installation, the excavated material shall be immediately stabilized as provided in Section 1620 of the *Standard Specifications*. Other stabilization methods may be utilized with prior approval from the Engineer.

Line clean water diversion with geotextile unrolled in the direction of flow and lay smoothly but loosely on soil surface without creases. Bury top of slope geotextile edge in a trench at least 5" deep and tamp securely. Make vertical overlaps a minimum of 18" with upstream geotextile overlapping the downstream geotextile.

Secure geotextile with eleven gauge wire staples shaped into a u shape with a length of not less than 6" and a throat not less than 1" in width. Place staples along outer edges and throughout the geotextile a maximum of 3 ft. horizontally and vertically.

#### **Measurement and Payment**

*Silt Excavation* will be measured and paid for in accordance with Article 1630-4 of the *Standard Specifications*.

*Geotextile for Soil Stabilization* will be measured and paid for in accordance with Article 270-4 of the *Standard Specifications*.

Section 1056 Stabilization of the excavated material will be paid for as *Temporary Seeding* as provided in Section 1620 of the *Standard Specifications*.

Such price and payment shall be considered full compensation for all work covered by this section including all materials, construction, maintenance, and removal of the clean water diversions.

## SAFETY FENCE AND JURISDICTIONAL FLAGGING:

## Description

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

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

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

## Materials

## (A) Safety Fencing

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

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

## (B) Boundary Flagging

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

#### **Construction Methods**

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

## (A) Safety Fencing

Posts shall be set at a maximum spacing of 10 ft., maintained in a vertical position and hand set or set with a post driver. Posts shall be installed a minimum of 2 ft. into the ground. If hand set, all backfill material shall be thoroughly tamped. Wood posts may be sharpened to a dull point if power driven. Posts damaged by power driving shall be removed and replaced prior to final acceptance. The tops of all wood posts shall be cut at a 30-degree angle. The wood posts may, at the option of the Contractor, be cut at this angle either before or after the posts are erected.

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

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

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

(B) Boundary Flagging

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

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

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

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

#### Measurement and Payment

*Safety Fence* will be measured and paid as the actual number of linear feet of polyethylene or polypropylene fence installed in place and accepted. Such payment will be full compensation including but not limited to furnishing and installing fence geotextile with necessary posts and post bracing, staples, tie wires, tools, equipment and incidentals necessary to complete this work.

Payment will be made under:

Pay Item Safety Fence **Pay Unit** Linear Foot

## PERMANENT SOIL REINFORCEMENT MAT:

#### Description

This work consists of furnishing and placing *Permanent Soil Reinforcement Mat*, of the type specified, over previously prepared areas as directed.

#### Materials

The product shall be a permanent erosion control reinforcement mat and shall be constructed of synthetic or a combination of coconut and synthetic fibers evenly distributed throughout the mat between a bottom UV stabilized netting and a heavy duty UV stabilized top net. The matting shall be stitched together with UV stabilized polypropylene thread to form a permanent three-dimensional structure. The mat shall have the following minimum physical properties:

Property	<b>Test Method</b>	Value	Unit
Light Penetration	ASTM D6567	9	%
Thickness	ASTM D6525	0.40	in
Mass Per Unit Area	ASTM D6566	0.55	lb/sy
Tensile Strength	ASTM D6818	385	lb/ft
Elongation (Maximum)	ASTM D6818	49	%
Resiliency	ASTM D1777	>70	%
UV Stability *	ASTM D4355	<u>&gt;</u> 80	%
Porosity (Permanent Net)	ECTC Guidelines	<u>&gt;</u> 85	%
Maximum Permissible Shear	Performance Bench	<u>&gt;</u> 8.0	$lb/ft^2$
Stress (Vegetated)	Test		
Maximum Allowable Velocity	Performance Bench	<u>&gt;</u> 16.0	ft/s
(Vegetated)	Test		

\*ASTM D1682 Tensile Strength and % strength retention of material after 1000 hours of exposure.

Submit a certification (Type 1, 2, or 3) from the manufacturer showing:

- (A) the chemical and physical properties of the mat used, and
- (B) conformance of the mat with this specification.

## **Construction Methods**

Matting shall be installed in accordance with Subarticle 1631-3(B) of the Standard Specifications.

All areas to be protected with the mat shall be brought to final grade and seeded in accordance with Section 1660 of the *Standard Specifications*. The surface of the soil shall be smooth, firm, stable and free of rocks, clods, roots or other obstructions that would prevent the mat from lying in direct contact with the soil surface. Areas where the mat is to be placed will not need to be mulched.

#### **Measurement and Payment**

*Permanent Soil Reinforcement Mat* will be measured and paid for as the actual number of square yards measured along the surface of the ground over which Permanent Soil Reinforcement Mat is installed and accepted. Overlaps will not be included in the measurement, and will be considered as incidental to the work. Such payment shall be full compensation for furnishing and installing the mat, including overlaps, and for all required maintenance. Payment will be made under:

Pay Item	Pay Unit
Permanent Soil Reinforcement Mat	Square Yard

## **SKIMMER BASIN WITH BAFFLES:**

#### Description

Provide a skimmer basin to remove sediment from construction site runoff at locations shown in the erosion control plans. See the Skimmer Basin with Baffles Detail sheet provided in the erosion control plans. Work includes constructing sediment basin, installation of temporary slope drain pipe and coir fiber baffles, furnishing, installation and cleanout of skimmer, providing and placing stone pad on bottom of basin underneath skimmer device, providing and placing a geotextile spillway liner, providing coir fiber mat stabilization for the skimmer outlet, disposing of excess materials, removing temporary slope drain, coir fiber baffles, geotextile liner and skimmer device, backfilling basin area with suitable material and providing proper drainage when basin area is abandoned.

#### Materials

Item	Section
Stone for Erosion Control, Class B	1042
Geotextile for Soil Stabilization, Type 4	1056

(East)

Fertilizer for Temporary Seeding	1060-2
Seed for Temporary Seeding	1060-4
Seeding and Mulching	1060-4
Matting for Erosion Control	1060-8
Staples	1060-8
Coir Fiber Mat	1060-14
Temporary Slope Drain	1622-2
Coir Fiber Baffle	1640

Provide appropriately sized and approved skimmer device.

Provide Schedule 40 PVC pipe with a length of 6 ft. to attach to the skimmer and the coupling connection to serve as the arm pipe. For skimmer sizes of 2.5 in. and smaller, the arm pipe diameter shall be 1.5 inches. For skimmer sizes of 3 in. and larger, refer to manufacturer recommendation.

Provide 4" diameter Schedule 40 PVC pipe to attach to coupling connection of skimmer to serve as the barrel pipe through the earthen dam.

The geotextile for the spillway liner shall meet the following minimum physical properties for low permeability, woven polypropylene geotextiles:

Property	<b>Test Method</b>	Value	Unit
Tensile Strength	ASTM D-4632	315	lb.
Tensile Elongation (Maximum)	ASTM D-4632	15	%
Trapezoidal Tear	ASTM D-4533	120	lbs.
CBR Puncture	ASTM D-6241	900	lbs.
UV Resistance	ASTM D-4355	70	%
(% retained at 500 hrs.)			
Apparent Opening Size (AOS)	ASTM D-4751	40	US Std. Sieve
Permittivity	ASTM D-4491	0.05	sec <sup>-1</sup>
Water Flow Rate	ASTM D-4491	4	gal/min/ft <sup>2</sup>

Anchors: Staples, stakes, or reinforcement bars shall be used as anchors.

#### Wooden Stakes:

Provide hardwood stakes 12"- 24" long with a 2" x 2" nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving through the coir fiber mat and down into the underlying soil. The other end of the stake needs to have a 1"- 2" long head at the top with a 1"- 2" notch following to catch and secure the coir fiber mat.

Steel Reinforcement Bars:

Provide uncoated #10 steel reinforcement bars 24" nominal length. The bars shall have a 4" diameter bend at one end with a 4" straight section at the tip to catch and secure the coir fiber mat.

## Staples:

Provide staples made of 0.125" diameter new steel wire formed into a u shape not less than 12" in length with a throat of 1" in width.

## **Construction Methods**

Excavate basin according to the erosion control plans with basin surface free of obstructions, debris, and pockets of low-density material. Install temporary slope drain pipe and construct the primary spillway according to the Skimmer Basin with Baffles Detail sheet in the erosion control plans. Temporary slope drain pipe at inlet of basin may be replaced by Type 4 geotextile as directed. Construct the coir fiber baffles according to *Roadway Standard Drawings* No. 1640.01 and Section 1640 of the *Standard Specifications*.

Install skimmer device according to manufacturer recommendations. Install 4" Schedule 40 PVC pipe into dam on the lower side of basin 1 ft. from the bottom of the basin and according to the detail, and extend the pipe so the basin will drain. Attach a 6 ft. arm pipe to the coupling connection and skimmer according to manufacturer recommendations. The coupling shall be rigid and non-buoyant and not exceed a diameter of 4" and 12" in length. Attach the rope included with the skimmer to the tee between the vent socket and the tube inlet, and the other end to a wooden stake or metal post. Clean out skimmer device when it becomes clogged with sediment and/or debris and is unable to float at the top of water in skimmer basin. Take appropriate measures to avoid ice accumulation in the skimmer device. Construct a stone pad of Class B stone directly underneath the skimmer device at bottom of basin. The pad shall be a minimum of 12" in height, and shall have a minimum cross sectional area of 4 ft. by 4 ft.

Line primary spillway with low permeability polypropylene geotextile unrolled in the direction of flow and lay smoothly but loosely on soil surface without creases. Bury edges of geotextile in a trench at least 5" deep and tamp firmly. If geotextile for the primary spillway is not one continuous piece of material, make horizontal overlaps a minimum of 18" with upstream geotextile overlapping the downstream geotextile. Secure geotextile with eleven gauge wire staples shaped into a u shape with a length of not less than 12" and a throat not less than 1" in width. Place staples along outer edges and throughout the geotextile a maximum of 3 ft. horizontally and vertically. Geotextile shall be placed to the bottom and across the entire width of the basin according to the Skimmer Basin with Baffles detail. Place sealant inside basin around barrel pipe on top of geotextile with a minimum width of 6 in.

At the skimmer outlet, provide a smooth soil surface free from stones, clods, or debris that will prevent contact of the coir fiber matting with the soil. Unroll the matting and apply without stretching such that it will lie smoothly but loosely on the soil surface. Wooden stakes, reinforcement bars, or staples may be used as anchors in accordance with the details in the plans and as directed. Place anchors across the matting at the ends approximately 1 ft. apart. Place anchors along the outer edges and down the center of the matting 3 ft. apart.

All bare side slope sections of the skimmer basin shall be seeded with a temporary or permanent seed mix as directed and in accordance with Articles 1620-3, 1620-4, 1620-5, 1660-4, 1660-5

and 1660-7 of the *Standard Specifications*. Straw or excelsior matting shall be installed on all bare side slope sections immediately upon the completion of seeding and in accordance with Article 1631-3 of the *Standard Specifications*.

## Measurement and Payment

*Silt Excavation* will be measured and paid for in accordance with Article 1630-4 of the *Standard Specifications*, as calculated from the typical section throughout the length of the basin as shown on the final approved plans.

*Geotextile for Soil Stabilization* will be measured and paid for in accordance with Article 270-4 of the *Standard Specifications*.

*Low Permeability Geotextile* will be measured and paid for as the actual number of square yards measured along the surface of the spillway over which the geotextile is installed and accepted.

*Coir Fiber Baffles* will be measured and paid for in accordance with Article 1640-4 of the *Standard Specifications*.

*Coir Fiber Mat* will be measured and paid for as the actual number of square yards measured along the surface of the ground over which coir fiber mat is installed and accepted.

*Temporary Slope Drain* will be measured and paid for in accordance with Article 1622-4 of the *Standard Specifications*.

*Stone for Erosion Control, Class* \_\_\_\_ will be measured and paid for in accordance with Article 1610-4 of the *Standard Specifications*.

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

*Seed for Temporary Seeding* will be measured and paid for in accordance with Article 1620-6 of the *Standard Specifications*.

*Fertilizer for Temporary Seeding* will be measured and paid for in accordance with Article 1620-6 of the *Standard Specifications*.

*Matting for Erosion Control* will be measured and paid for in accordance with Article 1631-4 of the *Standard Specifications*.

No measurement will be made for other items or for over excavation or stockpiling.

Payment will be made under:

Pay Item	Pay Unit
" Skimmer	Each
Coir Fiber Mat	Square Yard
Low Permeability Geotextile	Square Yard

## **EARTHEN DAM WITH SKIMMER:**

## Description

Provide an earthen dam with a skimmer attached to a barrel pipe at the outlet of a proposed roadway ditch to remove sediment from construction site runoff at locations shown in the erosion control plans. See the Earthen Dam with Skimmer Detail sheet provided in the erosion control plans. Work includes constructing earthen dam, installation of coir fiber baffles, furnishing, installation and cleanout of skimmer, providing and placing stone pad on bottom of ditch underneath skimmer device, providing and placing geotextile spillway liner, providing coir fiber mat stabilization for the skimmer outlet, removing earthen dam, coir fiber baffles, geotextile liner and skimmer device, and disposing of excess materials.

## Materials

Item	Section
Stone for Erosion Control, Class B	1042
Staples	1060-8
Coir Fiber Mat	1060-14
Coir Fiber Baffle	1640

Provide appropriately sized and approved skimmer device.

Provide Schedule 40 PVC pipe with a length of 6 ft. to attach to the skimmer and the coupling connection to serve as the arm pipe. For skimmer sizes of 2.5 in. and smaller, the arm pipe diameter shall be 1.5 inches. For skimmer sizes of 3 in. and larger, refer to manufacturer recommendation.

Provide 4" diameter Schedule 40 PVC pipe to attach to coupling connection of skimmer to serve as the barrel pipe through the earthen dam.

The geotextile for the spillway liner shall meet the following minimum physical properties for low permeability, woven polypropylene geotextiles:

Property	<b>Test Method</b>	Value	Unit
Tensile Strength	ASTM D-4632	315	lb.
Tensile Elongation (Maximum)	ASTM D-4632	15	%
Trapezoidal Tear	ASTM D-4533	120	lbs.

(East)

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CBR Puncture UV Resistance	ASTM D-6241 ASTM D-4355	900 70	lbs. %
(% retained at 500 hrs.)			
Apparent Opening Size (AOS)	ASTM D-4751	40	US Std. Sieve
Permittivity	ASTM D-4491	0.05	sec <sup>-1</sup>
Water Flow Rate	ASTM D-4491	4	gal/min/ft <sup>2</sup>

Anchors: Staples, stakes, or reinforcement bars shall be used as anchors.

## Wooden Stakes:

Provide hardwood stakes 12"- 24" long with a 2" x 2" nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving through the coir fiber mat and down into the underlying soil. The other end of the stake needs to have a 1"- 2" long head at the top with a 1"- 2" notch following to catch and secure the coir fiber mat. Steel Reinforcement Bars:

Provide uncoated #10 steel reinforcement bars 24" nominal length. The bars shall have a 4" diameter bend at one end with a 4" straight section at the tip to catch and secure the coir fiber mat.

Staples:

Provide staples made of 0.125" diameter new steel wire formed into a u shape not less than 12" in length with a throat of 1" in width.

## **Construction Methods**

Excavate proposed ditch according to the roadway plans and cross sections with ditch surface free of obstructions, debris, and pockets of low-density material. Construct earthen dam and install the primary spillway according to the Earthen Dam with Skimmer Detail sheet in the erosion control plans. Construct the coir fiber baffles according to *Roadway Standard Drawings* No. 1640.01 and Section 1640 of the *Standard Specifications*. Accumulated silt behind the earthen dam and baffles shall be removed regularly and as directed.

Install skimmer device according to manufacturer recommendations. Install 4" Schedule 40 PVC pipe into dam on the lower side of basin 1 ft. from the bottom of the basin and according to the detail, and extend the pipe so the basin will drain. Attach a 6 ft. arm pipe to the coupling connection and skimmer according to manufacturer recommendations. The coupling shall be rigid and non-buoyant and not exceed a diameter of 4" and 12" in length. Attach the rope included with the skimmer to the tee between the vent socket and the tube inlet, and the other end to a wooden stake or metal post. Clean out skimmer device when it becomes clogged with sediment and/or debris and is unable to float at the top of water impounded in the ditch. Take appropriate measures to avoid ice accumulation in the skimmer device. Construct a stone pad of Class B stone directly underneath the skimmer device at bottom of ditch. The pad shall be a minimum of 12" in height, and shall have a minimum cross sectional area of 4 ft. by 4 ft.

Line primary spillway with low permeability polypropylene geotextile unrolled in the direction of flow and lay smoothly but loosely on soil surface without creases. Bury edges of geotextile in a trench at least 5" deep and tamp firmly. If geotextile for the primary spillway is not one continuous piece of material, make horizontal overlaps a minimum of 18" with upstream geotextile overlapping the downstream geotextile. Secure geotextile with eleven gauge wire staples shaped into a u shape with a length of not less than 12" and a throat not less than 1" in width. Place staples along outer edges and throughout the geotextile a maximum of 3 ft. horizontally and vertically. Geotextile shall be placed to the bottom and across the entire width of the ditch according to the Earthen Dam with Skimmer Detail. Place sealant inside basin around barrel pipe on top of geotextile with a minimum width of 6 in.

At the skimmer outlet, provide a smooth soil surface free from stones, clods, or debris that will prevent contact of the coir fiber matting with the soil. Unroll the matting and apply without stretching such that it will lie smoothly but loosely on the soil surface. Wooden stakes, reinforcement bars, or staples may be used as anchors in accordance with the details in the plans and as directed. Place anchors across the matting at the ends approximately 1 ft. apart. Place anchors along the outer edges and down the center of the matting 3 ft. apart.

## **Measurement and Payment**

The construction of the earthen dam will be paid for as *Borrow Excavation* as provided in Section 230 of the *Standard Specifications* or included in the lump sum price for grading.

*Silt Excavation* will be measured and paid for in accordance with Article 1630-4 of the *Standard Specifications*, as calculated from the typical section throughout the length of the ditch as shown on the final approved plans.

*Low Permeability Geotextile* will be measured and paid for as the actual number of square yards measured along the surface of the spillway over which the geotextile is installed and accepted.

*Coir Fiber Baffles* will be measured and paid for in accordance with Article 1640-4 of the *Standard Specifications*.

*Coir Fiber Mat* will be measured and paid for as the actual number of square yards measured along the surface of the ground over which coir fiber mat is installed and accepted.

*Stone for Erosion Control, Class* \_\_\_\_ will be measured and paid for in accordance with Article 1610-4 of the *Standard Specifications*.

No measurement will be made for other items or for over excavation or stockpiling.

Payment will be made under:

Pay Item	Pay Unit
" Skimmer	Each
Coir Fiber Mat	Square Yard
Low Permeability Geotextile	Square Yard

## **COIR FIBER WATTLES WITH POLYACRYLAMIDE (PAM):**

## Description

Coir Fiber Wattles are tubular products consisting of coir fibers (coconut fibers) encased in coir fiber netting. Coir Fiber Wattles are used on slopes or channels to intercept runoff and act as a velocity break. Coir Fiber Wattles are to be placed at locations shown on the plans or as directed. Installation shall follow the detail provided in the plans and as directed. Work includes furnishing materials, installation of coir fiber wattles, matting installation, PAM application, and removing wattles.

## Materials

Coir Fiber Wattle shall meet the following specifications:

100% Coir (Coconut) Fibers		
Minimum Diameter	12 in.	
Minimum Density	3.5 lb/ft <sup>3</sup> +/- 10%	
Net Material	Coir Fiber	
Net Openings	2 in. x 2 in.	
Net Strength	90 lbs.	
Minimum Weight	2.6 lbs./ft. +/- 10%	

Anchors: Stakes shall be used as anchors.

Wooden Stakes:

Provide hardwood stakes a minimum of 2-ft. long with a 2 in. x 2 in. nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving down into the underlying soil.

Matting shall meet the requirements of Article 1060-8 of the *Standard Specifications*, or shall meet specifications provided elsewhere in this contract.

Provide staples made of 0.125" diameter new steel wire formed into a u shape not less than 12" in length with a throat of 1" in width.

Polyacrylamide (PAM) shall be applied in powder form and shall be anionic or neutrally charged. Soil samples shall be obtained in areas where the wattles will be placed, and from offsite material used to construct the roadway, and analyzed for the appropriate PAM flocculant to be utilized with each wattle. The PAM product used shall be listed on the North Carolina Department of Environmental Quality Division of Water Resources web site as an approved PAM product for use in North Carolina.

## **Construction Methods**

Coir Fiber Wattles shall be secured to the soil by wire staples approximately every 1 linear foot and at the end of each section of wattle. A minimum of 4 stakes shall be installed on the downstream side of the wattle with a maximum spacing of 2 linear feet along the wattle, and according to the detail. Install a minimum of 2 stakes on the upstream side of the wattle according to the detail provided in the plans. Stakes shall be driven into the ground a minimum of 10 in. with no more than 2 in. projecting from the top of the wattle. Drive stakes at an angle according to the detail provided in the plans.

Only install coir fiber wattle(s) to a height in ditch so flow will not wash around wattle and scour ditch slopes and according to the detail provided in the plans and as directed. Overlap adjoining sections of wattles a minimum of 6 in.

Installation of matting shall be in accordance with the detail provided in the plans, and in accordance with Article 1631-3 of the *Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

Apply PAM over the lower center portion of the coir fiber wattle where the water is going to flow over at a rate of 2 ounces per wattle, and 1 ounce of PAM on matting on each side of the wattle. PAM applications shall be done during construction activities after every rainfall event that is equal to or exceeds 0.50 in.

The Contractor shall maintain the coir fiber wattles until the project is accepted or until the wattles are removed, and shall remove and dispose of silt accumulations at the wattles when so directed in accordance with the requirements of Section 1630 of the *Standard Specifications*.

## Measurement and Payment

*Coir Fiber Wattles* will be measured and paid for by the actual number of linear feet of wattles which are installed and accepted. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Coir Fiber Wattles*.

Matting will be measured and paid for in accordance with Article 1631-4 of the *Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

*Polyacrylamide(PAM)* will be measured and paid for by the actual weight in pounds of PAM applied to the coir fiber wattles. Such price and payment will be full compensation for all work

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covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to apply the *Polyacrylamide(PAM)*.

Payment will be made under:

## Pay Item

Polyacrylamide(PAM) Coir Fiber Wattle

## **COIR FIBER WATTLE BARRIER:**

(5-20-13)

1630

## Description

Coir fiber wattle barriers are tubular products consisting of coir fibers (coconut fibers) encased in coir fiber or synthetic netting and used at the toe of fills or on slopes to intercept runoff. Coir fiber wattle barriers are to be placed at locations shown on the plans or as directed. Installation shall follow the detail provided in the plans and as directed. Work includes furnishing materials, installation, maintenance and removing coir fiber wattle barriers.

## Materials

Coir fiber wattle shall meet the following specifications:

Inner Material	100% Coir (Coconut) Fibers
Minimum Diameter	18"
Minimum Length	10 ft.
Minimum Density	$5 \text{ lb./c.f.} \pm 10\%$
Net Material	Coir (Coconut) or Synthetic
Net Openings	2" x 2"
Net Strength	90 lb.
Minimum Weight	$10 \text{ lb./ft.} \pm 10\%$

Stakes shall be used as anchors. Provide hardwood stakes a minimum of 2-ft long with a 2" x 2" nominal square cross section. One end of the stake shall be sharpened or beveled to facilitate driving down into the underlying soil.

Provide staples made of 0.125" diameter new steel wire formed into a U-shape not less than 12" in length with a throat of 1" in width.

## **Construction Methods**

Align coir fiber wattle barriers in an overlapping and alternating pattern. Excavate a trench the entire length of each wattle with a depth of 2" to 3" for the wattle to be placed. Secure coir fiber wattle barriers to the soil by wire staples approximately every linear foot and at the end of each wattle. Install at least 4 stakes on the downslope side of the wattle with a maximum spacing of

Pay Unit Pound Linear Foot 2 linear feet and according to the detail. Install at least 2 stakes on the upslope side of the coir fiber wattle barriers according to the detail provided in the plans. Drive stakes into the ground at least 10" with no more than 2" projecting from the top of the wattle. Drive stakes at an angle according to the detail provided in the plans.

For coir fiber wattle barriers used to reduce runoff velocity for large slopes, use a maximum spacing of 25 ft. for the barrier measured along the slope.

Maintain the coir fiber wattle barriers until the project is accepted or until the coir fiber wattle barriers are removed, and remove and dispose of silt accumulations at the coir fiber wattle barriers when so directed in accordance with Section 1630 of the *Standard Specifications*.

## Measurement and Payment

*Coir Fiber Wattle Barrier* will be measured and paid as the actual number of linear feet of coir fiber wattle barrier installed and accepted. Such price and payment will be full compensation for all work covered by this provision, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the coir fiber wattle barrier.

Payment will be made under:

**Pay Item** Coir Fiber Wattle Barrier **Pay Unit** Linear Foot

#### **CULVERT DIVERSION CHANNEL:**

#### Description

This work consists of providing a *Culvert Diversion Channel* to detour the existing stream around the culvert construction site at locations shown on the plans. Work includes constructing the diversion channel, disposing of excess materials, providing and placing geotextile liner, maintaining the diversion area in an acceptable condition, removing geotextile liner, backfilling diversion channel area with suitable material, and providing proper drainage when diversion channel area is abandoned.

#### Materials

Refer to Division 10

**Item** Geotextile for Soil Stabilization, Type 4

#### **Construction Methods**

Grade channel according to the plans with channel surface free of obstructions, debris, and pockets of low-density material. Utilize suitable material and provide disposal area for unsuitable material.

Section

1056

Line channel with geotextile unrolled in the direction of flow and lay smoothly but loosely on soil surface without creases. Bury top of slope geotextile edge in a trench at least 5" deep and tamp securely. Make vertical overlaps a minimum of 18" with upstream geotextile overlapping the downstream geotextile.

Secure geotextile with eleven gauge wire staples shaped into a u shape with a length of not less than 6" and a throat not less than 1" in width. Place staples along outer edges and throughout the geotextile a maximum of 3 ft. horizontally and vertically.

## **Measurement and Payment**

*Culvert Diversion Channel* will be measured and paid for as the actual number of cubic yards excavated, as calculated from the typical section throughout the length of the diversion channel as shown on the final approved plans.

*Geotextile for Soil Stabilization* will be measured and paid for in accordance with Article 270-4 of the *Standard Specifications*.

Such price and payment shall be considered full compensation for all work covered by this section including all materials, construction, maintenance, and removal of *Culvert Diversion Channel*.

Payment will be made under:

**Pay Item** Culvert Diversion Channel

## **IMPERVIOUS DIKE:**

#### Description

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

#### Materials

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

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

Pay Unit Cubic Yard

## **Measurement and Payment**

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

Payment will be made under:

Pay Item Impervious Dike Pay Unit Linear Foot

## **TEMPORARY PIPE FOR CULVERT CONSTRUCTION:**

#### Description

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

#### **Construction Methods**

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

#### **Measurement and Payment**

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

Payment will be made under:

#### **Pay Item**

\_\_\_ Temporary Pipe

#### **COIR FIBER MAT:**

#### Description

Furnish material, install and maintain coir fiber mat in locations shown on the plans or in locations as directed. Work includes providing all materials, excavating and backfilling, and placing and securing coir fiber mat with stakes, steel reinforcement bars or staples as directed.

Pay Unit Linear Foot

## Materials

**Item** Coir Fiber Mat **Section** 1060-14

Anchors: Stakes, reinforcement bars, or staples shall be used as anchors.

Wooden Stakes:

Provide hardwood stakes 12"- 24" long with a 2" x 2" nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving through the coir fiber mat and down into the underlying soil. The other end of the stake needs to have a 1"- 2" long head at the top with a 1"- 2" notch following to catch and secure the coir fiber mat.

Steel Reinforcement Bars:

Provide uncoated #10 steel reinforcement bars 24" nominal length. The bars shall have a 4" diameter bend at one end with a 4" straight section at the tip to catch and secure the coir fiber mat.

Staples:

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

#### **Construction Methods**

Place the coir fiber mat immediately upon final grading. Provide a smooth soil surface free from stones, clods, or debris that will prevent the contact of the mat with the soil. Unroll the mat and apply without stretching such that it will lie smoothly but loosely on the soil surface.

For stream relocation applications, take care to preserve the required line, grade, and cross section of the area covered. Bury the top slope end of each piece of mat in a narrow trench at least 6 in. deep and tamp firmly. Where one roll of matting ends and a second roll begins, overlap the end of the upper roll over the buried end of the second roll so there is a 6 in. overlap. Construct check trenches at least 12 in. deep every 50 ft. longitudinally along the edges of the mat or as directed. Fold over and bury mat to the full depth of the trench, close and tamp firmly. Overlap mat at least 6 in. where 2 or more widths of mat are installed side by side.

Place anchors across the mat at the ends approximately 1 ft. apart. Place anchors along the outer edges and down the center of the mat 3 ft. apart.

Adjustments in the trenching or anchoring requirements to fit individual site conditions may be required.

#### **Measurement and Payment**

*Coir Fiber Mat* will be measured and paid for as the actual number of square yards measured along the surface of the ground over which coir fiber mat is installed and accepted.

No measurement will be made for anchor items.

Payment will be made under:

**Pay Item** Coir Fiber Mat **Pay Unit** Square Yard

#### **FLOATING TURBIDITY CURTAIN:**

#### Description

This work consists of furnishing a *Floating Turbidity Curtain* to deter silt suspension and movement of silt particles during construction. The floating turbidity curtain shall be constructed at locations as directed.

#### Materials

The curtain material shall be made of a tightly woven nylon, plastic or other non-deteriorating material meeting the following specifications:

Property	Value
Grab tensile strength	*md-370 lbs *cd-250 lbs
Mullen burst stength	480 psi
Trapezoid tear strength	*md-100 lbs *cd-60 lbs
Apparent opening size	70 US standard sieve
Percent open area	4% permittivity 0.28 sec-1

\*md - machine direction\*cd - cross machine direction

In the event that more than one width of fabric is required, a 6" overlap of the material shall also be required.

The curtain material shall be supported by a flotation material having over 29 lbs/ft buoyancy. The floating curtain shall have a 5/16" galvanized chain as ballast and dual 5/16" galvanized wire ropes with a heavy vinyl coating as load lines.

## **Construction Methods**

The Contractor shall maintain the *Floating Turbidity Curtain* in a satisfactory condition until its removal is requested by the Engineer. The curtain shall extend to the bottom of the jurisdictional resource. Anchor the curtain according to manufacturer recommendations.

#### **Measurement and Payment**

*Floating Turbidity Curtain* will be measured and paid for as the actual number of square yards of curtain furnished as specified and accepted. Such price and payment will be full compensation for the work as described in this section including but not limited to furnishing all materials, tools, equipment, and all incidentals necessary to complete the work.

Payment will be made under:

**Pay Item** Floating Turbidity Curtain

## CONCRETE WASHOUT STRUCTURE:

(12-10-20)

#### Description

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

The concrete washout structure may include constructed devices above or below ground and or commercially available devices designed specifically to capture concrete wash water.

#### Materials

Item Temporary Silt Fence

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

Geomembrane basin liner shall meet the following minimum physical properties for low permeability; it shall consist of a polypropylene or polyethylene 10 mil think geomembrane. If the minimum setback dimensions can be achieved the liner is not required. (5 feet above groundwater, 50 feet from top of bank of perennial stream, other surface water body, or wetland.)

**Pay Unit** Square Yard

Section 1605

## **Construction Methods**

Build an enclosed earthen berm or excavate to form an enclosure in accordance with the details and as directed.

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

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

The construction details for the above grade and below grade concrete washout structures can be found on the following web page link:

https://connect.ncdot.gov/resources/roadside/SoilWaterDocuments/ConcreteWashoutStructurede tail.pdf

Alternate details for accommodating concrete washout may be submitted for review and approval. The alternate details shall include the method used to retain and dispose of the concrete waste water within the project limits and in accordance with the minimum setback requirements. (5 feet above groundwater, 50 feet from top of bank of perennial stream, other surface water body, or wetland.)

#### Maintenance and Removal

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

Inspect concrete washout structures for damage and maintain for effectiveness.

Remove the concrete washout structures and sign upon project completion. Grade the earth material to match the existing contours and permanently seed and mulch area.

#### **Measurement and Payment**

*Concrete Washout Structure* will be paid for per each enclosure installed in accordance with the details. If alternate details or commercially available devices are approved, then those devices will also be paid for per each approved and installed device.

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

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

No measurement will be made for other items or for over excavation or stockpiling.

Payment will be made under:

## Pay Item

Concrete Washout Structure

## **PUMP AROUND OPERATION:**

## Description

The work covered by this section consists of furnishing, installing, maintaining and removing any and all pump around systems used on this project. The Contractor shall install a pump around system in locations as shown in the plans and in other locations approved by the Engineer. The pump around system shall provide a passageway for the stream flow around the work site.

The quantity of pump around systems may be increased, decreased, or eliminated entirely as directed. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work. See NCDOT *Best Management Practices for Construction and Maintenance Activities* manual for example pump around operation.

## Materials

Item	Section
Special Stilling Basin	1639

Impervious Dike shall meet the specifications as provided elsewhere in this contract.

Pumps shall be of sufficient size to divert the stream flow around the work area, as approved by the Engineer.

#### **Construction Methods**

Install *impervious dike(s)* as shown on the plans or as directed. Pump water around the work site. If the water is turbid or exposed to bare soil, pump through a *special stilling basin*. Once the work is complete in an area remove the *impervious dike(s)* and pump system, and stabilize the area.

#### **Measurement and Payment**

Impervious Dike will be measured and paid for as provided elsewhere in this contract.

Special Stilling Basin will be measured and paid for in accordance with Article 1639-4 of the Standard Specifications.

Payment for pumping operations shall be considered incidental to the work of installing pipes, culverts and channels. The pumping operations shall include but not be limited to, diverting the

Pay Unit Each

1/26/2022

stream flow around the work area and pumping runoff from the work area into a stilling basin, special stilling basin or other sediment control device. No additional payment will be made for furnishing materials or maintenance of the pumping operations for the installation of pipes, culverts and channels.

The above prices and payments will be full compensation for all work covered by this section including, but not limited to furnishing all of the necessary materials, construction, maintenance and removal of the impervious dike and pump around system.



## Signals and Intelligent Transportation Systems Project Special Provisions (Version 18.5)

Prepared By: \_LEN\_\_\_\_ 2-Feb-22

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## 1. GENERAL REQUIREMENTS

## **1.1. DESCRIPTION**

## A. General

Conform to these Project Special Provisions, Project Plans, and the 2018 Standard Specifications for Roads and Structures (also referred to hereinafter as the "Standard Specifications") and the 2018 Roadway Standard Drawings (also referred hereinafter as the "Standard Drawings"). The current edition of these specifications and publications in effect on the date of advertisement will apply.

In the event of a conflict between these Project Special Provisions and the Standard Specifications, these Project Special Provisions govern.

## B. Scope

The scope of this project includes the installation of one new DMS pedestal structure supporting two new color DMS (Type-2C) in the medial of US 17 at -L- STA 306+00 between SR 1420 and SR 1106 in Martin County.

Note that the locations of each proposed device shown in the Project Plans are an approximation. Locate and mark proposed device locations in the field and receive approval from the Division Traffic Engineer before performing any construction. Do not construct any conduits or junction boxes to proposed devices until the device locations are approved by the Division Traffic Engineer. The Division Traffic Engineer can be reached at (252) 482-1850.

Integrate the new cellular modems furnished by the Department with existing communications infrastructure so that the new DMSs are accessible for control by the existing computer and network hardware and software at the NCDOT Division 1 office in Edenton, NC and the Statewide Operations Center in Raleigh, NC.

Conduct device and system tests as described in these Project Special Provisions.

## **1.2. MATERIALS**

#### A. Domestic Steel and Iron Products

See section 106-1 (B) of the Standard Specifications.

#### **B.** Qualified Products

Furnish new equipment, materials, and hardware unless otherwise required. Inscribe manufacturer's name, model number, serial number, and any additional information needed for proper identification on each piece of equipment housed in a case or housing.

Certain equipment listed in these Project Special Provisions must be pre-approved on the Department's 2018 ITS & Signals Qualified Products List (QPL) by the date of installation. Equipment, material, and hardware not pre-approved when required will not be allowed for use on the project.

The QPL is available on the Department's website. The QPL website is:

https://connect.ncdot.gov/resources/safety/Pages/ITS-and-Signals-Qualified-Products.aspx

## C. Information Technology Compliance

Conform to the State of North Carolina Information Technology (IT) policy and standards as described at http://it.nc.gov. The architecture of the IT modules must be approved by the NC-DOT IT and NC Office of Information Technology architecture groups.

## **1.3. PLAN OF RECORD DOCUMENTATION**

Comply with all requirements of Article 1098-1(F) of the Standard Specifications for providing plan of record documentation for all work performed under this Project.

## **1.4. WARRANTIES**

Comply with all requirements of Article 1098-1(D) of the Standard Specifications for providing manufacturer's warranties on Contractor-furnished equipment.

Upon successful completion of the 30-day observation period, transfer manufacturer's warranties with proper validation by the manufacturer to the Department or its designated maintaining agency.

## 2. ELECTRICAL SERVICE

## 2.1. DESCRIPTION

Install new electrical service equipment as shown in the Plans. The first item of work on this project is the installation of all electrical service pedestals, poles, and meter base/disconnect combination panels to expedite the power service connections. Comply with the National Electrical Code (NEC), the National Electrical Safety Code (NESC), the Standard Specifications, the Project Special Provisions, and all local ordinances. All work involving electrical service shall be coordinated with the appropriate utility company and the Engineer.

Obtain the maximum available ground fault current from the utility company. Print this information on a durable label and adhere to the dead front of the disconnect.

## 2.2. MATERIAL

## A. Wood Pole

Use 40' Class 4 or better wood poles for overhead electrical service structures as shown in the Plans. Refer to 2018 NCDOT *Standard Specifications for Roads and Structures* Article 1720-3.

## **B.** Meter Base/Disconnect Combination Panel

Furnish and install new meter base/disconnect combination panels as shown in the Plans. Provide meter base/disconnect combination panels that have a minimum of eight (8) spaces in the disconnect. Furnish a single pole 15A circuit breaker at CCTV-2, and 3 locations. Furnish a double pole 50A circuit breaker at DMS-1/CCTV-1 location, and at DMS-2 location. Furnish each with a minimum of 10,000 RMS symmetrical amperes short circuit current rating in a lockable NEMA 3R enclosure. Ensure meter base/ disconnect combination panel is listed as meeting UL Standard UL-67 and marked as being suitable for use as service equipment. Ensure circuit breakers are listed as meeting UL-489. Fabricate enclosure from galvanized steel and electrostatically apply dry powder paint finish, light gray in color, to yield a minimum thickness of 2.4 mils. All exterior surfaces must be powder coated steel. Provide ground bus and neutral bus with a minimum of four terminals and a minimum wire capacity range of number 8 through number 3/0 AWG.

Furnish NEMA Type 3R combinational panels rated 100 Ampere minimum for overhead services and 200 Ampere minimum for underground services that meet the requirements of the local utility. Provide meter base with sockets' ampere rating based on sockets being wired with a minimum of 167 degrees F insulated wire. Furnish 4 terminal, 600 volt, single phase, 3-wire meter bases that comply with the following:

- Line, Load, and Neutral Terminals accept 4/0 AWG and smaller Copper/Aluminum wire
- With or without horn bypass
- Made of galvanized steel
- Listed as meeting UL Standard US-414
- Overhead or underground service entrance specified.

Furnish 1.5" watertight hub for threaded rigid conduit with meter base.

At the main service disconnect, furnish and install UL-approved lightning arrestors that meet the following requirements:

Type of design	Silicon Oxide Varistor
Voltage	120/240 Single Phase, 3 wire
Maximum current	100,000 amps
Maximum energy	3000 joules per pole
Maximum number of surges	Unlimited
Response time one milliamp test	5 nanoseconds
Response time to clamp 10,000 amps	10 nanoseconds
Response time to clamp 50,000 amps	25 nanoseconds
Leak current at double the rated voltage	None
Ground wire	Separate

## C. Equipment Cabinet Disconnect

Provide new equipment cabinet disconnects at the locations shown in the Plans. Furnish double pole 50A circuit breakers at DMS locations. Furnish single pole 15A circuit breaker at CCTV locations. Furnish panels that have a minimum of four (4) spaces in the disconnect. Furnish circuit breakers with a minimum of 10,000 RMS symmetrical amperes short circuit current rating in a lockable NEMA 3R enclosure. Ensure meter base/ disconnect combination panel is listed as meeting UL Standard UL-67 and marked as being suitable for use as service equipment. Ensure circuit breakers are listed as meeting UL-489. Fabricate enclosure from galvanized steel and electrostatically apply dry powder paint finish, light gray in color, to yield a minimum thickness of 2.4 mils. All exterior surfaces must be powder coated steel. Provide ground bus and neutral bus with a minimum of four terminals and a minimum wire capacity range of number 8 through number 3/0 AWG.

## **D. 3-Wire Copper Service Entrance Conductors**

Furnish 3-wire stranded copper service entrance conductors with THWN rating. Provide conductors with black, red, and white insulation that are intended for power circuits at 600 Volts or less and comply with the following:

- Listed as meeting UL Standard UL-83
- Meets ASTM B-3 and B-8 or B-787 standards.

See the Plans for wire sizes.

#### E. 4-Wire Copper Feeder Conductors

Furnish 4-wire stranded copper feeder conductors with THWN rating for supplying power to DMS field equipment cabinets. Provide conductors with black, red, white, and green insulation that are intended for power circuits at 600 Volts or less and comply with the following:

- Listed as meeting UL Standard UL-83
- Meets ASTM B-3 and B-8 or B-787 standards.

See the Plans for wire sizes.

## F. Grounding System

Furnish 5/8"x10' copper clad steel grounding electrodes (ground rods), #4 AWG solid bare copper conductors, and mechanical crimping kits for grounding system installations. Comply with the NEC, Standard Specifications, these Project Special Provisions, and the Plans.

## 2.3. CONSTRUCTION METHODS

## A. General

Coordinate with the Engineer and the utility company to de-energize the existing service temporarily prior to starting any modifications.

Permanently label cables at all access points using nylon tags labeled with permanent ink. Ensure each cable has a unique identifier. Label cables immediately upon installation. Use component name and labeling scheme approved by the Engineer.

## **B.** Wood Pedestal

Install a 6" x 6" x 8'wood pedestal in compliance with all requirements of Section1720-3 of the Standard Specifications.

## C. Meter Base/Disconnect Combination Panel

Install meter base/disconnect combination panels with lightning arrestors as called for in the Plans. At all new DMS locations, route the feeder conductors from the meter base/disconnect to the DMS equipment cabinet in conduit. At all new CCTV locations, route the feeder conductors from the meter base/disconnect to the CCTV equipment cabinet in conduit. Provide rigid galvanized conduit for above ground and PVC for below ground installations.

## **D.** Electrical Service Disconnect

Install equipment cabinet disconnects and circuit breakers as called for in the Plans. Install THWN stranded copper feeder conductors as shown in Plans between the electrical service disconnect and the equipment cabinet disconnect. Route the conductors from the equipment cabinet disconnect to the equipment cabinet in rigid galvanized steel conduit. Bond the equipment cabinet disconnect in accordance with the NEC. Ensure that the grounding system complies with the grounding requirements of these Project Special Provisions, the Standard Specifications and the Plans.

## E. 3-Wire Copper Service Entrance Conductors

At locations shown in the Plans, furnish and install 3-wire THWN stranded copper service entrance conductors in 1.5 inch rigid galvanized risers as shown in the plans. Install a waterproof hub on top of the electrical service disconnect for riser entrance/exit. Size the conductors as specified in the Plans. Comply with the Standard Specifications and Standard Drawings and all applicable electrical codes.

## F. 4-Wire Copper Feeder Conductors

At locations shown in the Plans, install 4-wire THWN stranded copper feeder conductors to supply 240/120 VAC to the DMS field equipment cabinets. Size the conductors as specified

in the Plans. Comply with the Standard Specifications and Standard Drawings and all applicable electrical codes.

#### G. Grounding System

Install ground rods as indicated in the Plans. Connect the #4 AWG grounding conductor to ground rods using a mechanical crimping process. Test the system to ensure a ground resistance of 20-ohms or less is achieved. Drive additional ground rods as necessary or as directed by the Engineer to achieve the proper ground resistance.

## 2.4. MEASUREMENT AND PAYMENT

*Wood Pedestal* will be measured and paid as the actual number of complete and functional 6" x 6" x 8' wood pedestals installed for underground electrical services.

*Meter base/disconnect combination panel* will be measured and paid as the actual number of complete and functional meter base/disconnect combination panel service locations furnished, installed and accepted. Breakers, lightning arrestors, exposed vertical conduit runs to the cabinet, and any remaining hardware, fittings, and conduit bodies to connect the electrical service to the cabinet will be considered incidental to meter base/disconnect combination panels. All other required feeder conductors will be paid for separately.

*Equipment cabinet disconnect* will be measured and paid as the actual number of complete and functional equipment cabinet disconnects furnished, installed and accepted. Breakers, exposed vertical conduit runs to the cabinet, ground rods, ground wire and any remaining hardware and conduit to connect the equipment cabinet disconnect to the cabinet will be considered incidental to the equipment cabinet subpanel.

*3-Wire copper service entrance conductors* will be incidental to furnish and installing the meter base/disconnect combination panel.

4-Wire copper feeder conductors will be measured and paid as the actual linear feet of 4-wire THWN stranded copper feeder conductors furnished, installed and accepted. Payment is for all four conductors. Measurement will be for the actual linear footage of combined conductors after all terminations are complete. No separate payment will be made for each individual conductor. No separate payment will be made for different wire sizes. No payment will be made for excess wire in the cabinets.

5/8" X 10' grounding electrode (ground rod) will be measured and paid as the actual number of 5/8" copper clad steel ground rods furnished, installed and accepted. No separate payment will be made for mechanical crimping kit as they will be considered incidental to the installation of the ground rod.

*#4 solid bare copper grounding conductor* will be measured and paid as the actual linear feet of #4 AWG solid bare copper grounding conductor furnished, installed and accepted. Measurement will be along the approximate centerline from the base of the electrical service disconnect to the last grounding electrode.

Payment will be made under:

Pay Item	Pay Unit
Wood Pedestal	Each
Meter Base/Disconnect Combination Panel	Each
Equipment Cabinet Disconnect	Each
3-Wire Copper Service Entrance Conductors	Linear Foot
4-Wire Copper Feeder Conductors	Linear Foot
5/8" X 10' Grounding Electrode	Each
#4 Solid Bare Copper Grounding Conductor	Linear Foot

# 3. DYNAMIC MESSAGE SIGN (DMS)

#### **3.1. DESCRIPTION**

To ensure compatibility with the existing DMS Control Software deployed in the State, furnish NTCIP compliant DMSs that are fully compatible with Daktronics, Inc. Vanguard V4 or latest version software (also referred to hereinafter as the "Control Software"). Contact the engineer to inquire about the current version being used.

Furnish and install DMSs compliant with UL standards 48, 50 and 879.

Add and configure the new DMSs in the system using the Control Software and computer system. Furnish, install, test, integrate and make fully operational the new DMSs at locations shown in the Project Plans.

Furnish operating Dynamic Message Signs, not limited to, the following types. Dimensions represent DMS sizes commonly used by the Department, other size DMS may be specified in the project plans.

DMS Naming Convention		
Type Color		
Type 1 – Front Access	A – Amber – 66mm	
Type 2 – Walk-in	C – Full Color – 20mm	
Type 3 – Embedded		
Type 4 – Lane Control		

- **DMS Type 1A** Front Access Amber 66mm 27 pixels high by 60 pixels wide
  - 3 lines, 10 characters per line, using 18" high characters.
- **DMS Type 1C** Front Access Full Color 20mm 96 pixels high by 208 pixels wide
  - 3 lines, 11 characters per line, using 18" high characters.

- R-2511
  - DMS Type 2A Walk-in Amber 66mm 27 pixels high by 90 pixels wide
    - o 3 lines, 15 characters per line, using 18" high characters.
  - DMS Type 2C Walk-in Full Color 20mm 96 pixels high by 288 pixels wide
    - $\circ$  3 lines, 15 characters per line, using 18" high characters.
  - DMS Type 3A Embedded Front Access Tri-color 66mm 7 pixels high by 35 pixels wide
    - 1 line, 7 characters per line, using 18" high characters.
  - **DMS Type 3C** Embedded Front Access Full Color 20mm 24 pixels high by 160 pixels wide
    - 1 line, 8 characters per line, using 18" high characters.
  - DMS Type 4C Lane Control Sign Full Color 20mm 48- or 64-pixels square
    - 48 pixels high by 48 pixels wide
      - 1 line, 2 characters per line using 18" high characters
    - 64 pixels high x 64 pixel wide
      - 2 lines, 3 characters per line using 18" high characters

Use only UL listed and approved electronic and electrical components in the DMS system.

Use only approved DMS models listed on the NCDOT Qualified Products List (QPL) at the time of construction. NCDOT Qualified Products List can be accessed via official website at <a href="https://apps.ncdot.gov/products/qpl/">https://apps.ncdot.gov/products/qpl/</a>

# **3.2. MATERIALS**

# H. Environmental Requirements

Construct the DMS and DMS controller cabinet so the equipment within is protected against moisture, dust, corrosion, and vandalism.

Design the DMS system to comply with the requirements of Section 2.1 (Environmental and Operating Standards) of NEMA TS 4-2016.

# I. Viewing Requirements for all DMS

Each line of text should be clearly visible and legible to a person with 20/20 corrected vision from a distance of 900 feet in advance of the DMS at an eye height of 3.5 feet along the axis.

Any line must display equally spaced and equally sized alphanumeric individual characters. Each character must be at least 18 inches in height (unless otherwise noted in the plans) and composed from a luminous dot matrix.

# J. Housing Requirements for all DMS

Construct the external skin of the sign housing out of aluminum alloy 5052 H32 that is a minimum of 1/8 inches thick for all walk-in DMS and 0.090-inch-thick for all front access or embedded DMS. Ensure the interior structure is constructed of aluminum. Ensure that no internal frame connections or external skin attachments rely upon adhesive bonding or rivets. Ensure the sign housing meets the requirements of Section 3 of NEMA TS 4-2016.

Ensure that all drain holes and other openings in the sign housing are screened to prevent the entrance of insects. Design and construct the DMS unit for continuous usage of at least 20 years. Ensure that the top of the housing includes multiple steel lifting eyebolts or equivalent hoisting points. Ensure hoist points are positioned such that the sign remains level when lifted. Ensure that the hoist points and sign frame allow the sign to be shipped, handled, and installed without damage. Ensure all external assembly and mounting hardware, including but not limited to; nuts, bolts, screws, and locking washers are corrosion resistant galvanized steel and are sealed against water intrusion. Ensure all exterior housing surfaces, excluding the sign face, and all interior housing surfaces are a natural aluminum mill finish. Ensure signs are fabricated, welded, and inspected in accordance with the requirements of the current ANSI/AWS Structural Welding Code-Aluminum. Do not place a manufacturer name, logo, or other information on the front face of the DMS or shield visible to the motorist. Provide power supply monitoring circuitry to detect power failure in the DMS and to automatically report this fault to the Control Software. This requirement is in addition to reporting power failure at the controller cabinet. Do not paint the stainless-steel bolts on the Z-bar assemblies used for mounting the enclosure.

#### K. Housing Requirements for Walk-in type DMS

Ensure the sign housing meets the requirements of Section 3.2.8 of NEMA TS 4-2016. Ensure that exterior seams and joints, except the finish coated face pieces, are continuously welded using an inert gas welding method. Stitch weld the exterior housing panel material to the internal structural members to form a unitized structure. Ensure that exterior mounting assemblies are fabricated from aluminum alloy 6061-T6 extrusions a minimum of 3/16 inches thick. Ensure housing access is provided through an access door at each end of the sign enclosure that meets the requirements of NEMA TS 4-2016, Section 3.2.8.1. Ensure the access doors include a keyed tumbler lock and a door handle with a hasp for a padlock. Ensure the doors include a closed-cell neoprene gasket and stainless-steel hinges. Install one appropriately sized fire extinguisher within 12 inches of each maintenance door. Ensure the sign housing meets the requirements of NEMA TS 4-2016, Section 3.2.8.3 for service lighting. All service lighting should be LED, incandescent and fluorescent lamps are not permitted. Ensure that the sign housing includes LED emergency lighting that automatically illuminates the interior when the door is open in the event of a power outage. Emergency lighting must be capable of operation without power for at least 90 minutes. Ensure the sign housing meets the requirements of NEMA TS 4-2016, Section 3.2.9 for convenience outlets.

#### L. Housing Requirements for Front Access DMS

Comply with the requirements of Section 3.2.5 and 3.2.6 of NEMA TS 4-2016 as it applies to front access enclosures. The following requirements complement TS 4-2016. Ensure access door does not require specialized tools or excessive force to open. Provide multiple access doors that allow maintenance personnel access to 2 or 3 sign modules are a time. Vertically hinge the doors and design to swing out from the face to provide access to the enclosure interior. Extend each door the full height of the display matrix. Provide a retaining latch mechanism for each door to hold the door open at a 90-degree angle. Each door will form the face panel for a section of the sign. Mount the LED modules to the door such that they can be removed from the door when in the open position. Other sign components can be located inside the sign enclosure and be accessible through the door opening. Provide for each door a minimum of two (2) screw-type captive latches to lock them in the closed position and pull the door tight and compress a gasket located around the perimeter of each door. Install the gasket around the doors to prevent water from entering the cabinet.

#### M. Housing Face Requirements for all DMS

Ensure the sign face meets the requirements of NEMA TS 4-2016, Section 3.1.3. Protect the DMS face with contiguous, weather-tight, removable panels. The DMS front face shall be constructed with multiple rigid panels, each of which supports and protects a full-height section of the LED display matrix. The panels shall be fabricated using aluminum sheeting on the exterior and polycarbonate sheeting on the interior of the panel. These panels must be a polycarbonate material that is ultraviolet protected and have an antireflection coating. Prime and coat the front side of the aluminum mask, which faces the viewing motorists, with automotive-grade semi-gloss black acrylic enamel paint or an approved equivalent. Guarantee all painted surfaces provide a minimum outdoor service life of 20 years. Design the panels so they will not warp nor reduce the legibility of the characters. Differential expansion of the DMS housing and the front panel must not cause damage to any DMS component or allow openings for moisture or dust. Glare from sunlight, roadway lighting, commercial lighting, or vehicle headlights must not reduce the legibility or visibility of the DMS. Install the panels so that a maintenance person can easily remove or open them for cleaning.

#### N. Housing Face Requirements for Walk-in type DMS

The DMS front face shall be constructed with multiple rigid panels, each of which supports and protects a full-height section of the LED display matrix.

No exposed fasteners are allowed on the housing face. Ensure that display modules can be easily and rapidly removed from within the sign without disturbing adjacent display modules.

#### **O.** Housing Face Requirements for Front Access type DMS

The DMS front face shall be constructed with multiple vertically hinged rigid door panels, each of which contains a full-height section of the LED display matrix.

Any exposed fasteners on the housing face must be the same color and finish as the housing face. Only captive fasteners may be used on the housing face.

#### P. Housing Face Requirements for Embedded Front Access type DMS

Front Face shall be constructed with a single, horizontally hinged rigid face panel which contains a full-height section of the LED display matrix.

Any exposed fasteners on the housing face must be the same color and finish as the housing face. Only captive fasteners may be used on the housing face.

#### **Q. Sign Housing Ventilation System for all DMS**

Install a minimum of one (1) temperature sensor that is mounted near the top of the DMS interior. The sensor(s) will measure the temperature of the air in the enclosure over a minimum range of -40°F to +176°F. Ensure the DMS controller will continuously monitor the internal temperature sensor output and report to the DMS control software upon request.

Design the DMS with systems for enclosure ventilation, face panel fog and frost prevention, and safe over-temperature shutdown.

Design the DMS ventilation system to be thermostatically controlled and to keep the internal DMS air temperature lower than +140°F, when the outdoor ambient temperature is +115°F or less.

The ventilation system will consist of two or more air intake ports located near the bottom of the DMS rear wall. Cover each intake port with a filter that removes airborne particles measuring 500 microns in diameter and larger. Mount one or more ball bearing-type ventilation fans at each intake port. These fans will positively pressure the DMS enclosure.

Design the ventilation fans and air filters to be removable and replaceable from inside the DMS housing. To ease serviceability, mount the ventilation fans no more than four (4) feet from the floor of the DMS enclosure. Position ventilation fans so they do not prevent removal of an LED pixel board or driver board.

Provide each ventilation fan with a sensor to monitor its rotational speed, measured in revolutions per minute and report this speed to the sign controller upon request.

The ventilation system will move air across the rear of the LED modules in a manner such that heat is dissipated from the LED's. Design the airflow system to move air from the bottom of the enclosure towards the top to work with natural convection to move heat away from the modules.

Install each exhaust port near the top of the rear DMS wall. Provide one exhaust port for each air intake port. Screen all exhaust port openings to prevent the entrance of insects and small animals.

Cover each air intake and exhaust port with an aluminum hood attached to the rear wall of the DMS. Thoroughly seal all intakes and exhaust hoods to prevent water from entering the DMS. Provide a thermostat near the top of the DMS interior to control the activation of the ventilation system.

The DMS shall automatically shut down the LED modules to prevent damaging the LEDs if the measured internal enclosure air temperature exceeds a maximum threshold temperature. The threshold temperature shall be configurable and shall have a default factory setting of 140°F. The DMS provide an output to the controller to notify the Vanguard client when the DMS shuts down due to high temperature.

#### **R.** Sign Housing Ventilation System for Walk-in DMS

Ensure the sign includes a fail-safe ventilation subsystem that includes a snap disk thermostat that is independent of the sign controller. Preset the thermostat at  $140^{\circ}$ F. If the sign housing's interior reaches  $140^{\circ}$ F, the thermostat must override the normal ventilation system, bypassing the sign controller and turning on all fans. The fans must remain on until the internal sign housing temperature falls below  $115^{\circ}$ F.

#### S. Sign Housing Photoelectric sensors

Install three photoelectric sensors with <sup>1</sup>/<sub>2</sub> inch minimum diameter photosensitive lens inside the DMS enclosure. Use sensors that will operate normally despite continual exposure to direct sunlight. Place the sensors so they are accessible and field adjustable. Point one sensor north or bottom of the sign. Place the other two, one on the back wall and one on the front wall of the sign enclosure. Alternate designs maybe accepted, provided the sensor assemblies that are accessible and serviceable from inside the sign enclosure.

Provide controls so that the Engineer can field adjust the following:

- The light level emitted by the pixels in each Light Level Mode,
- The ambient light level at which each Light Level Mode is activated.

## T. Display Modules

Manufacture each display module with a standard number of pixels which can be easily removed. Assemble the modules onto the DMS assemblies contiguously to form a continuous matrix to display the required number of lines, characters, and character height.

Design display modules that are interchangeable, self-addressable, and replaceable without using special tools. Provide plug-in type power and communication cables to connect to a display module. Ensure that the sign has a full matrix display area as defined in NEMA TS 4-2016, Section 1.6.

Design each module to display:

- All upper- and lower-case letters,
- All punctuation marks,
- All numerals 0 to 9,
- Special user-created characters.

Display upper-case letters and numerals over the complete height of the module. Optimize the LED grouping and mounting angle within a pixel for maximum readability.

Design Type 3A and 3C DMS with at least the following message displays:

- A static display, green in color, reading "OPEN"
- A static display, red in color, reading "CLOSED"
- A static display, amber in color, with the ability to display a toll rate in the following format "\$ XX.XX"

#### Furnish two (2) spare display modules per each DMS installed for emergency restoration.

#### **U. Discrete LEDs**

Provide discrete LEDs with a nominal viewing cone of 30 degrees with a half-power angle of 15 degrees measured from the longitudinal axis of the LED. Make certain, the viewing cone tolerances are as specified in the LED manufacturer's product specifications and do not exceed +/- 3 degrees half-power viewing angle of 30 degrees.

Provide LEDs that are untinted, non-diffused, high output solid state lamps utilizing AlInGaP technology for Red and InGaN technology for Green and Blue. No substitutions will be allowed. Provide LEDs that emit a full color.

Provide LEDs with a MTBF (Mean Time Before Failure) of at least 100,000 hours of permanent use at an operating point of 140° F or below at a specific forward current of 20mA. Discrete LED failure is defined as the point at which the LED's luminous intensity has degraded to 50% or less of its original level.

Obtain the LEDs used in the display from a single LED manufacturer. Obtain them from batches sorted for luminous output, where the highest luminosity LED is not more than fifty percent more luminous than the lowest luminosity LED when the LEDs are driven at the same forward current. Do not use more than two successive and overlapping batches in the LED display.

Individually mount the LEDs on circuit boards that are at least 1/16" thick FR-4 fiberglass, flat black printed circuit board in a manner that promotes cooling. Protect all exposed metal on both sides of the LED pixel board (except the power connector) from water and humidity exposure by a

thorough application of acrylic conformal coating. Design the boards so bench level repairs to individual pixels, including discrete LED replacement and conformal coating repair is possible.

Operate the LED display at a low internal DC voltage not to exceed 24 Volts.

Design the LED display operating range to be  $-20^{\circ}$  F to  $+140^{\circ}$  F at 95% relative humidity, noncondensing.

Supply the LED manufacturer's technical specification sheet with the material submittals.

## V. LED Power Supplies

Power the LED Display by means of multiple regulated switching DC power supplies that operate from 120 volts AC input power and have an output of 24 volts DC or less. Wire the power supplies in a redundant parallel configuration that uses multiple power supplies per display. Provide the power supplies with current sharing capability that allows equal amounts of current to their portion of the LED display. Provide power supplies rated such that if one supply fails the remaining supplies will be able to operate their portion of the display under full load conditions (i.e. all pixels on at maximum brightness) and at a temperature of 140° F.

Provide power supplies to operate within a minimum input voltage range of +90 to +135 volts AC and within a temperature range of  $-22^{\circ}$  F to  $140^{\circ}$  F. Power supply output at  $140^{\circ}$  F must not deteriorate to less than 65% of its specified output at 70° F. Provide power supplies that are overload protected by means of circuit breakers, that have an efficiency rating of at least 75%, a power factor rating of at least .95, and are UL listed. Provide all power supplies from the same manufacturer and with the same model number for each Type of DMS. Design the power driver circuitry to minimize power consumption.

Design the field controller to monitor the operational status (normal or failed) of each individual power supply and be able to display this information on the Client Computer screen graphically. Color code power supply status, red for failed and green for normal.

#### W. LED Pixels

A pixel is defined as the smallest programmable portion of a display module that consists of a cluster of closely spaced discrete LEDs. Design each pixel with either 66mm or 20mm spacing depending on the type of DMS called for in the plans.

Construct the pixels with strings of LEDs. It is the manufacturer's responsibility to determine the number of LEDs in each string to produce the candela requirement as stated herein.

Use continuous current to drive the LEDs at the maximum brightness level. Design the light levels to be adjustable for each DMS / controller so the Engineer may set levels to match the luminance requirements at each installation site.

Ensure each pixel produces a luminous intensity of 40 Cd when driven with an LED drive current of 20 mA per string.

Power the LEDs in each pixel in strings. Use a redundant design so that the failure of an LED in one string does not affect the operation of any other string within the pixel and does not lower the luminous intensity of the pixel more than 25% of the 40Cd requirement. Provide the sign controller with the ability to detect the failure of any LED string and identify which LED string has failed.

#### X. DMS Mini Controller

For Walk-In and Front Access DMS Types only, furnish and install a mini controller inside the DMS that is interconnected with the main controller using a fiber-optic cable. The mini controller will enable a technician to perform all functions available from the main controller. Provide the

mini controller with an LCD/keypad interface. Size the LCD display screen to allow preview of an entire one-page message on one screen. Provide a 4 X 4 keypad.

#### Y. DMS Enclosure Structure Mounting

Mount the DMS enclosure and interconnect system securely to the supporting structures. Design the DMS enclosure supports and structure to allow full access to the DMS enclosure inspection door. Mount the DMS enclosure according to the manufacturer's recommendations.

<u>Furnish and install U-bolt connections of hanger beams to truss chords with a double nut at each</u> end of the U-bolt. Bring the double nuts tight against each other by the use of two wrenches.

Submit plans for the DMS enclosure, structure, mounting description and calculations to the Engineer for approval. Have such calculations and drawings approved by a Professional Engineer registered in the state of North Carolina, and bear his signature, seal, and date of acceptance.

Provide removable lifting eyes or the equivalent on the DMS enclosure rated for its total weight to facilitate handling and mounting the DMS enclosure.

Design the DMS structure to conform to the applicable requirements of the most recent version of the *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*, currently in use by the department and the section titled "DMS Assemblies" of these Project Special Provisions.

#### Z. DMS / DMS Controller Interconnect

Furnish and install all necessary cabling, conduit, and terminal blocks to connect the DMS and the DMS controller located in the equipment cabinet. Use approved manufacturer's specifications and the Project Plans for cable and conduit types and sizes. Use fiber-optic cable to interconnect sign and controller. Install fiber-optic interconnect centers in the sign enclosure and cabinet to securely install and terminate the fiber-optic cable. Submit material submittal cut sheets for the interconnect center.

#### AA. DMS Controller and DMS Cabinet

Furnish and install one DMS controller with accessories per DMS in a protective cabinet. Controlling multiple DMS with one controller is allowed when multiple DMS are mounted on the same structure. Mount the controller cabinet on the Sign support structure. Install cabinet so that the height from the ground to the middle of the cabinet is 4 feet. Ensure a minimum of 3' x 3' level working surface under each cabinet that provides maintenance technicians with a safe working environment.

Provide the DMS controller as a software-oriented microprocessor and with resident software stored in non-volatile memory. The Control Software, controller and communications must comply with the NTCIP Standards identified in these Project Special Provisions. Provide sufficient non-volatile memory to allow storage of at least 500 multi-page messages and a test pattern program.

For DMS Type 4C installations provide a single controller that can control up to eight (8) signs simultaneously.

Furnish the controller cabinet with, but not limited to, the following:

- Power supply and distribution assemblies,
- Power line filtering hybrid surge protectors,
- Radio Interference Suppressor,
- Communications surge protection devices,
- Industrial-Grade UPS system and local disconnect,

- Microprocessor based controller,
- Display driver and control system (unless integral to the DMS),
- RJ45 Ethernet interface port for local laptop computer,
- Local user interface,
- Interior lighting and duplex receptacle,
- Adjustable shelves as required for components,
- Temperature control system,
- All interconnect harnesses, connectors, and terminal blocks,
- All necessary installation and mounting hardware.

Furnish the DMS controller and associated equipment completely housed in a NEMA 3R cabinet made from 5052 H32 sheet aluminum at least 1/8" thick. Use natural aluminum cabinets. Perform all welding of aluminum and aluminum alloys in accordance with the latest edition of AWS D1.2, Structural Welding Code - Aluminum. Continuously weld the seams using Gas Metal Arc Welding (GMAW).

Slant the cabinet roof away from the front of the cabinet to prevent water from collecting on it.

Do not place a manufacturer name, logo, or other information on the faces of the controller cabinet visible to the motorist.

Provide cabinets capable of housing the components and sized to fit space requirement. Design the cabinet layout for ease of maintenance and operation, with all components easily accessible. Submit a cabinet layout plan for approval by the Engineer.

Locate louvered vents with filters in the cabinet to direct airflow over the controller and auxiliary equipment, and in a manner that prevents rain from entering the cabinet. Fit the inside of the cabinet, directly behind the vents, with a replaceable, standard size, commercially available air filter of sufficient size to cover the entire vented area.

Provide a torsionally rigid door with a continuous stainless-steel hinge on the side that permits complete access to the cabinet interior. Provide a gasket as a permanent and weather resistant seal at the cabinet door and at the edges of the fan / exhaust openings. Use a non-absorbent gasket material that will maintain its resiliency after long term exposure to the outdoor environment. Construct the doors so that they fit firmly and evenly against the gasket material when closed. Provide the cabinet door with louvered vents and air filters near the bottom as described in the paragraph above.

The cabinet shall contain a full-height standard EIA 19-inch rack. The rack shall be secured within the cabinet by mounts at the top and bottom.

The rack shall contain a minimum of one (1) pullout drawer. The drawer shall be suitable for storing manuals and small tools. The drawer shall be able to latch in the out position to function as a laptop/utility shelf.

Provide a convenient location on the inside of the door to store the cabinet wiring diagrams and other related cabinet drawings. Provide a Corbin #2 main door lock made of non-ferrous or stainless-steel material. Key all locks on the project alike and provide 1 key per lock to the Engineer. In addition, design the handle to permit padlocking.

Provide the interior of the cabinet with ample space for housing the controller and all associated equipment and wiring. Provide ample space in the bottom of the cabinet for the entrance and exit of all power, communications, and grounding conductors and conduit.

Arrange the equipment to permit easy installation of the cabling through the conduit so that they will not interfere with the operation, inspection, or maintenance of the unit. Provide adjustable metal shelves, brackets, or other support for the controller unit and auxiliary equipment. Leave a 3-inch minimum clearance from the bottom of the cabinet to all equipment, terminals, and bus bars.

Provide power supply monitoring circuitry to detect power failure and to automatically report the occurrence to the Control Software.

Install two 15-watt fluorescent light strips with shields, one in the top of the cabinet and the other under the bottom shelf. Design both lights to automatically turn on when the cabinet door is opened and turn off when the door closes.

Mount and wire a 120V (+10%) GFCI duplex receptacle of the 3-wire grounding type in the cabinet in a location that presents no electrical hazard when used by service personnel for the operation of power tools and work lights.

#### <u>No cabinet resident equipment may utilize the GFCI receptacle.</u> Furnish one spare non-<u>GFCI duplex receptacle for future equipment.</u>

Mount a bug-proof and weatherproof thermostatically controlled fan and safety shield in the top of the cabinet. Size the fan to provide at least for two air exchanges per minute. Fuse the fan at 125% of the capacity of the motor. The magnetic field of the fan motor must not affect the performance of the control equipment. Use a fan thermostat that is manually adjustable to turn on between 80° F and 160° F with a differential of not more than 10° F between automatic turn on and turn off. Mount it in an easily accessible location, but not within 6 inches of the fan.

Install additional fans and/or heaters as needed to maintain the temperature inside the cabinet within the operating temperature range of the equipment within the cabinet as recommended by equipment manufacturer(s).

#### 1. Wiring

The requirements stated herein apply wherever electrical wiring is needed for any DMS system assemblies and subassemblies such as controller cabinet, DMS enclosure, electrical panel boards etc.

Neatly arrange and secure the wiring inside the cabinet. Where cable wires are clamped to the walls of the control cabinet, provide clamps made of nylon, metal, plastic with rubber or neoprene protectors, or similar. Lace and jacket all harnesses or tie them with nylon tie wraps spaced at 6 inches maximum to prevent separation of the individual conductors.

Individually and uniquely label all conductors. Ensure all conductor labels are clearly visible without moving the conductor. Connect all terminal conductors to the terminal strip in right angles. Remove excess conductor before termination of the conductor. Mold the conductor in such a fashion as to retain its relative position to the terminal strip if removed from the strip. Do not run a conductor across a work surface with the exception of connecting to that work surface. No conductor bundles can be support by fasteners that support work surfaces. Install all connectors, devices and conductors in accordance to manufactures guidelines. Comply with the latest NEC guideline in effect during installation. No conductor or conductor bundle may hang loose or create a snag hazard. Protect all conductors from damage. Ensure all solder joints are completed using industry accepted practices and will not fail due to vibration or movement. Protect lamps and control boards from damage.

No splicing will be allowed for feeder conductors and communication cables from the equipment cabinet to the DMS enclosure.

Insulate all conductors and live terminals so they are not hazardous to maintenance personnel.

Route and bundle all wiring containing line voltage AC and / or shield it from all low voltage control circuits. Install safety covers to prevent accidental contact with all live AC terminals located inside the cabinet.

Use industry standard, keyed type connectors with a retaining feature for connections to the controller.

Label all equipment and equipment controls clearly.

Supply each cabinet with one complete set of wiring diagrams that identify the color-coding or wire tagging used in all connections. Furnish a water-resistant packet adequate for storing wiring diagrams, operating instructions, and maintenance manuals with each cabinet.

## 2. Power Supply and Circuit Protection

Design the DMS and controller for use on a system with a line voltage of 120V + 10% at a frequency of 60 Hz  $\pm$  3 Hz. Under normal operation, do not allow the voltage drop between no load and full load of the DMS and its controller to exceed 3% of the nominal voltage.

Blackout, brownout, line noise, chronic over-voltage, sag, spike, surge, and transient effects are considered typical AC voltage defects. Protect the DMS system equipment so that these defects do not damage the DMS equipment or interrupt their operation. Equip all cabinets with devices to protect the equipment in the cabinet from damage due to lightning and external circuit power and current surges.

#### 3. Circuit Breakers

Protect the DMS controller, accessories, and cabinet utilities with thermal magnetic circuit breakers. Provide the controller cabinet with a main circuit breaker sized according to the NEC. Use appropriately sized branch circuit breakers to protect the controller, sign display and accessories and for servicing DMS equipment and cabinet utilities.

Provide a subpanel in the sign enclosure with a main and branch circuit breakers sized appropriately per NEC.

Provide a detailed plan for power distribution within the cabinet and the sign. Label all breaker and conductor with size and loads. Have the plans signed and sealed by a NC registered PE and submit the plans for review and approval.

#### 4. Surge Suppressor

Install and clearly label filtering hybrid power line surge protectors on the load side of the branch circuit breakers in a manner that permits easy servicing. Ground and electrically bond the surge protector to the cabinet within 2 inches.

ie j	power mie surge protector that meets the ronowing requirements.		
	Peak surge current occurrences	20 minimum	
	Peak surge current for an 8 x 20 microsecond waveshape	50,000 Amperes	
	Energy Absorption	> 500 Joules	
	Clamp voltage	240 Volts	
	Response time	<1 nanosecond	
	Minimum current for filtered output	15 Amperes for 120VAC*	
	Temperature range	-40°F to +158°F	

Provide power line surge protector that meets the following requirements:

\*Capable of handling the continuous current to the equipment

## 5. Transients and Emissions

DMS and DMS controller will be designed in such a way to meet the latest NEMA TS-4 for Transients and Emissions.

#### 6. Transient Protection

The RS232 and Ethernet communication ports in the DMS sign controller shall be protected with surge protection between each signal line and ground. This surge protection shall be integrated internally within the controller.

#### 7. Lightning Arrester

Protect the system with an UL approved lightning arrester installed at the main service disconnect that meets the following requirements:

Type of design	Silicon Oxide Varistor
Voltage	120/240 Single phase, 3 wires
Maximum current	100,000 Amps
Maximum energy	3000 Joules per pole
Maximum number of surges	Unlimited
Response time one milliamp test	5 nanoseconds
Response time to clamp 10,000 amps	10 nanoseconds
Response time to clamp 50,000 amps	25 nanoseconds
Leak current at double the rated voltage	None
Ground Wire	Separate

#### 8. Uninterruptible Power Supply (UPS)

Provide the cabinet with an industrial grade power conditioning UPS unit to supply continuous power to operate the equipment connected to it if the primary power fails. <u>The UPS must continue</u> to condition power supplied to the DMS controller in the event of battery failure within the <u>UPS</u>. The UPS must detect a power failure and provide backup power within 20 milliseconds. Transition to the UPS source from primary power must not cause loss of data or damage to the equipment being supplied with backup power. Provide an UPS with at least three outlets for supplying conditioned AC voltage to the DMS controller. Provide a unit to meet the following requirements:

Input Voltage Range	120VAC +12%, -25%
Power Rating	1000 VA, 700 Watts
Input Frequency	45 to 65 Hz
Input Current	7.2A
Output Voltage	120VAC +/- 3%
Output Frequency	50/60 +/-1 Hz

Output Current	8.3A
Output Crest Factor Ratio	<ul><li>@50% Load Up to 4.8:1</li><li>@75% Load Up to 3.2:1</li><li>@100% Load Up to 2.4:1</li></ul>
Output THD	3% Max. (Linear) 5% Max. (Non-Linear)
Output Overload	110% for 10 min; 200% for 0.05 sec.
Output Dynamic Response	+/- 4% for 100% Step Load Change 0.5 ms Recovery Time.
Output Efficiency @ 100% Load	90% (Normal Mode)
Operating Temperature	-40° F to +165 ° F
Humidity	0% to 95% Non-condensing
Remote Monitoring Interface	RS-232
Protection	Input/Output Short Circuit Input/Output Overload Excessive Battery Discharge
Specifications	UL1778, FCC Class A, IEE 587

Provide the UPS unit capable of supplying <u>30 minutes</u> of continuous backup power to the cabinet equipment connected to it when the equipment is operating at full load.

#### 9. Controller Communications Interface

Provide the controller with the following interface ports:

- An EIA/TIA-232E port for remote communication using NTCIP,
- An 10/100 Ethernet port for remote communication using NTCIP,
- An EIA/TIA-232E port for onsite access using a laptop,
- An EIA/TIA-232E auxiliary port for communication with a field device such as a UPS,
- Fiber-optic ports for communication with the sign,
- RJ45 ports for communication with the sign using CAT-5 cable,
- RJ45 ports for communication with mini controller located inside the sign enclosure.

#### **10.** Controller Local User Interface

Provide the controller with a Local User Interface (LUI) for at least the following functions:

• On / Off Switch: controls power to the controller,

- Control Mode Switch: for setting the controller operation mode to either remote or local mode,
- LCD Display and Keypad: Allow user to navigate through the controller menu for configuration (display, communications parameter, etc.) running diagnostics, viewing peripherals status, message creation, message preview, message activation, etc. Furnish a LCD display with a minimum size of 240x64 dots with LED back light.

Protected access to the LUI with an alphanumeric and PIN passwords. Allow the user to select a preferred method of password protection. Default and hardcoded passwords are not allowed.

#### **11. Controller Address**

Assign each DMS controller a unique address. Preface all commands from the Control Software with a particular DMS controller address. The DMS controller compares its address with the address transmitted; if the addresses match, then the controller processes the accompanying data.

#### **12.** Controller Functions

Design the DMS controller to continuously control and monitor the DMS independent of the Control Software. Design the controller to display a message on the sign sent by the Control Software, a message stored in the sign controller memory, or a message created on site by an operator using the controller keypad.

Provide the DMS controller with a watchdog timer to detect controller failures and to reset the microprocessor, and with a battery backed up clock to maintain an accurate time and date reference. Set the clock through an external command from the Control Software or the Local User Interface.

#### **13. DMS Controller Memory**

Furnish each DMS controller with non-volatile memory. Use the non-volatile memory to store and reprogram at least one test pattern sequence and 500 messages containing a minimum of two pages of 45 characters per page. The Control Software can upload messages into and download messages from each controller's non-volatile memory remotely.

Messages uploaded and stored in the controller's non-volatile memory may be erased and edited using the Control Software and the controller. New messages may be uploaded to and stored in the controller's non-volatile memory using the Control Software and the controller.

#### **BB.** Equipment List

Provide a general description of all equipment and all information necessary to describe the basic use or function of the major system components. Include a general "block diagram" presentation. Include tabular charts listing auxiliary equipment, if any is required. Include the nomenclature, physical and electrical characteristics, and functions of the auxiliary equipment unless such information is contained in an associated manual; in this case include a reference to the location of the information.

Include a table itemizing the estimated average and maximum power consumption for each major piece of equipment.

#### CC. Physical Description

Provide a detailed physical description of size, weight, center of gravity, special mounting requirements, electrical connections, and all other pertinent information necessary for proper installation and operation of the equipment.

## DD. Parts List

Provide a parts list that contains all information needed to describe the characteristics of the individual parts, as required for identification. Include a list of all equipment within a group and a list of all assemblies, sub-assemblies, and replacement parts of all units. Arrange this data in a table, in alpha numerical order of the schematic reference symbols, which gives the associated description, manufacturer's name, and part number, as well as alternate manufacturers and part numbers. Provide a table of contents or other appropriate grouping to identify major components, assemblies, etc.

#### EE. Character Set Submittal

Submit an engineering drawing of the DMS character set including at a minimum, 26 upper case and lower case letters, 10 numerals, 9 punctuation marks (., !? - ``;:) 12 special characters (# & \* + / () [] <> @) and arrows at 0, 45, 90, 135, 180, 225, 270, and 315 degrees.

#### **FF.Wiring Diagrams**

Provide a wiring diagram for each DMS and each controller cabinet, as well as interconnection wiring diagrams for the system as a whole.

Provide complete and detailed schematic diagrams to component level for all DMS assemblies and subassemblies such as driver boards, control boards, DMS controller, power supplies, and etc. Ensure that each schematic enables an electronics technician to successfully identify any component on a board or assemblies and trace its incoming and outgoing signals.

#### GG. Routine of Operation

Describe the operational routine, from necessary preparations for placing the equipment into operation to securing the equipment after operation. Show appropriate illustrations with the sequence of operations presented in tabular form wherever applicable. Include in this section a total list of the test instruments, aids and tools required to perform necessary measurements and measurement techniques for each component, as well as set up, test, and calibration procedures.

#### HH. Maintenance Procedures

Specify the recommended preventative maintenance procedures and checks at pre-operation, monthly, quarterly, semiannual, annual, and "as required" periods to assure equipment operates reliably. List specifications (including tolerances) for all electrical, mechanical, and other applicable measurements and / or adjustments.

#### **II. Repair Procedures**

Include in this section all data and step by step procedures necessary to isolate and repair failures or malfunctions, assuming the maintenance technicians are capable of analytical reasoning using the information provided in the section titled "Wiring Diagrams and Theory of Operation."

Describe accuracy, limits, and tolerances for all electrical, physical, or other applicable measurements. Include instructions for disassembly, overhaul, and reassembly, with shop specifications and performance requirements.

Give detailed instructions only where failure to follow special procedures would result in damage to equipment, improper operation, danger to operating or maintenance personnel, etc. Include such instructions and specifications only for maintenance that specialized technicians and engineers in a modern electromechanical shop would perform. Describe special test set up, component fabrication, and the use of special tools, jigs, and test equipment.

#### JJ. Warranty

Ensure that the DMS system and equipment has a manufacturer's warranty covering defects for a minimum of five (5) years from the date of final acceptance by the Engineer.

# **3.3. CONSTRUCTION METODS**

## A. Description

This article establishes practices and procedures and gives minimum standards and requirements for the installation of DMS systems, auxiliary equipment and the construction of related structures.

Provide electrical equipment described in this specification that conforms to the standards of NEMA, UL, or Electronic Industries Association (EIA), wherever applicable. Provide connections between DMS equipment and DMS sign housing and electric utilities that conform to NEC standards.

Provide stainless steel screws, nuts, and locking washers in all external locations. Do not use selftapping screws unless specifically approved by the Engineer. Use parts made of corrosion resistant materials, such as plastic, stainless steel, brass, or aluminum. Use construction materials that resist fungus growth and moisture deterioration. Separate dissimilar metals by an inert dielectric material.

# **B.** Layout

The Regional ITS engineer or Division Traffic Engineer will establish the actual location of each DMS assembly. It is the Contractor's responsibility to ensure proper elevation, offset, and orientation of all DMS assemblies. The location of service poles as well as conduit lengths shown in the Project Plans, are approximate based on available project data. Make actual field measurements to place conduit and equipment at the required location.

#### C. Construction Submittal

When the work is complete, submit "as built" plans, inventory sheets, and any other data required by the Engineer to show the details of actual construction and installation and any modifications made during installation.

The "as built" plans will show: the DMS, controller, and service pole locations; DMS enclosure and controller cabinet wiring layouts; and wire and conduit routing. Show all underground conduits and cables dimensioned from fixed objects.

Include detailed drawings that identify the routing of all conductors in the system by cable type, color code, and function. Clearly label all equipment in the DMS system, controller cabinet, and DMS enclosure.

## **D.** Conduit

Install the conduit system in accordance with Section 1715 of the Standard Specifications and NEC requirements for an approved watertight raceway.

Make bends in the conduit so as not to damage it or change its internal diameter. Install watertight and continuous conduit with as few couplings as standard lengths permit.

Clean conduit before, during, and after installation. Install conduit in such a manner that temperature changes will not cause elongation or contraction that might damage the system.

Attach the conduit system to and install along the structural components of the Sign structure assemblies with beam clamps or stainless-steel strapping or inside the structure if there is available space. Install strapping according to the strapping manufacturer's recommendations and according to NEC requirements. Do not use welding or drilling to fasten conduit to structural components. Space the fasteners at no more than 4 feet for conduit 1.5 inches and larger or 6 feet for conduit smaller than 1.25 inches. Place fasteners no more than 3 feet from the center of bends, fittings, boxes, switches, and devices.

Flexible conduit will only be allowed when the conduits transition from the horizontal structure segment to the horizontal truss segment and from the horizontal truss segment to the rear entrance of the DMS when installing the DMS communications and feeder cables. The maximum length of flexible conduit allowed at each transition will be 5 feet.

Do not exceed the appropriate fill ratio on all cable installed in conduit as specified in the NEC.

#### E. Wiring Methods (Power)

Do not pull permanent wire through a conduit system until the system is complete and has been cleaned.

Color-code all conductors per the NEC. Use approved marking tape, paint, sleeves or continuous colored conductors for No.8 AWG and larger. Do not mark a white conductor in a cable assembly any other color.

Do not splice underground circuits unless specifically noted in the Project Plans.

#### F. Equipment and Cabinet Mounting

Mount equipment securely at the locations shown in the Project Plans, in conformance with the dimensions shown. Install fasteners as recommended by the manufacturer and space them evenly. Use all mounting holes and attachment points for attaching DMS enclosures and controller cabinets to the structures.

Drill holes for expansion anchors of the size recommended by the manufacturer of the anchors and thoroughly clean them of all debris.

Provide cabinets with all strapping hardware and any other necessary mounting hardware in accordance with these Project Special Provisions and the Project Plans.

Seal all unused conduit installed in cabinets at both ends to prevent water and dirt from entering the conduit and cabinet with approved sealing material.

Install a ground bushing attached inside the cabinet on all metal conduits entering the cabinet. Connect these ground bushings to the cabinet ground bus.

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Install a level concrete technician pad measuring a minimum 4 inches thick, 36 inches wide and 36 inches long at the front door of the DMS equipment cabinet as shown on the Typical Details sheet within the Project Plans.

#### G. Work Site Clean-Up

Clean the site of all debris, excess excavation, waste packing material, wire, etc. Clean and clear the work site at the end of each workday. Do not throw waste material in storm drains or sewers.

#### **3.4.GENERAL TEST PROCEDURE**

Test the DMS and its components in a series of functional tests and ensure the results of each test meet the specified requirements. These tests should not damage the equipment. The Engineer will reject equipment that fails to fulfill the requirements of any test. Resubmit rejected equipment after correcting non-conformities and re-testing; completely document all diagnoses and corrective actions. Modify all equipment furnished under this contract, without additional cost to the Department, to incorporate all design changes necessary to pass the required tests.

Provide 4 copies of all test procedures and requirements to the Engineer for review and approval at least 30 days prior to the testing start date.

Only use approved procedures for the tests. Include the following in the test procedures:

- A step-by-step outline of the test sequence that demonstrates the testing of every function of the equipment or system tested
- A description of the expected nominal operation, output, and test results, and the pass / fail criteria
- An estimate of the test duration and a proposed test schedule
- A data form to record all data and quantitative results obtained during the test
- A description of any special equipment, setup, manpower, or conditions required by the test

Provide all necessary test equipment and technical support. Use test equipment calibrated to National Institute of Standards and Technology (NIST) standards. Provide calibration documentation upon request.

Conform to these testing requirements and the requirements of these specifications. It is the Contractor's responsibility to ensure the system functions properly even after the Engineer accepts the CCTV test results.

Provide 4 copies of the quantitative test results and data forms containing all data taken, highlighting any non-conforming results and remedies taken, to the Engineer for approval. An authorized representative of the manufacturer must sign the test results and data forms.

#### **3.5.** COMPATIBILITY TESTS

#### A. DMS System

Compatibility Tests are applicable to DMS that the Contractor wishes to furnish but are of a different manufacturer or model series than the existing units installed in the Region. If required, the Compatibility Test shall be completed and accepted by the Engineer prior to approval of the material submittal.

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The Compatibility Test shall be performed in a laboratory environment at a facility chosen by the Engineer based on the type of unit being tested. Provide notice to the Engineer with the material submitted that a Compatibility Test is requested. The notice shall include a detailed test plan that will show compatibility with existing equipment. The notice shall be given a minimum of 15 calendar days prior to the beginning of the Compatibility Test.

The Contractor shall provide, install, and integrate a full-functioning unit to be tested. The Department will provide access to existing equipment to facilitate these testing procedures. The Engineer will determine if the Compatibility Test was acceptable for each proposed device. To prove compatibility the Contractor is responsible for configuring the proposed equipment at the applicable Traffic Operations Center (TOC) with the accompaniment of an approved TOC employee.

#### **3.6. OPERATIONAL FIELD TEST (ON-SITE COMMISSIONING)**

#### A. DMS System

Final DMS locations must be field verified and approved by the Engineer. Perform the following local operational field tests at the DMS assembly field site in accordance with the test plans. The Contractor is responsible for providing a laptop for camera control and positioning during the test. After completing the installation of the camera assemblies, including the camera hardware, power supply, and connecting cables, the contractor shall:

#### Local Field Testing

Furnish all equipment and labor necessary to test the installed camera and perform the following tests before any connections are made.

- Verify that physical construction has been completed.
- Inspect the quality and tightness of ground and surge protector connections.
- Check the power supply voltages and outputs, check connection of devices to power source.
- Verify installation of specified cables and connection between the DMS and control cabinet,
- Make sure cabinet wiring is neat and labeled properly; check wiring for any wear and tear; check for exposed or loose wires.
- Perform the DMS assembly manufacturer's initial power-on test in accordance with the manufacturer's recommendation.
- Set the DMS control address.

#### **Central Operations Testing**

- Interconnect the DMS's communication interface device with one of the following methods as depicted on the plans:
  - communication network's assigned Ethernet switch and assigned fiberoptic trunk cable and verify a transmit/receive LED is functioning and that the DMS is fully operational at the TOC.

OR

- to the DOT furnished cellular modem and verify a transmit/receive LED is functioning and that the DMS is fully operational at the TOC.
- Review DMS date and time and DMS controller information.
- Run DMS diagnostics and review results.
- Run DMS pixel test and review results.
- Run test message.
- Run test schedule.
- Program burn-in scenario.

Approval of Operational Field Test results does not relieve the Contractor to conform to the requirements in these Project Special Provisions. If the DMS system does not pass these tests, document a correction or substitute a new unit as approved by the Engineer. Re-test the system until it passes all requirements.

#### 3.7. MEASUREMENT AND PAYMENT

*Dynamic Message Sign* (\_Type-2C\_) will be measured and paid as the actual type and number of DMS furnished, installed, and accepted. Each DMS consists of a LED Dynamic Message Sign, spare display modules, warranty, strapping hardware, controller, UPS, controller cabinet, concrete technician pad, conduit, fittings, couplings, sweeps, conduit bodies, wire, flexible conduit, feeder conductors and communications cable between the controller cabinet and the DMS enclosure, connectors, circuit protection equipment, photo-electric sensors, tools, materials, all related testing, cost of labor, cost of transportation, incidentals, and all other equipment necessary to furnish and install the DMS system.

Payment will be made under:

Dynamic Message Sign (Type-2C).....Each

#### 4. NTCIP REQUIREMENTS

This section defines the NTCIP requirements for the DMSs covered by these Project Special Provisions and Project Plans.

#### 4.1. References

#### A. Standards

This specification references several standards through their NTCIP designated names. The following list provides the full reference to the current version of each of these standards.

Implement the most recent version of the standard including any and all Approved or Recommended Amendments to these standards for each NTCIP Component covered by these project specifications. Refer to the NTCIP library at <u>www.ntcip.org</u> for information on the current status of NTCIP standards.

Abbreviated Number	Title
NTCIP 1201	Global Object (GO) Definitions
NTCIP 1203	Object Definitions for Dynamic Message Signs
	SP-PMPP/232
NTCIP 2101	Subnet Profile for PMPP over RS-232
NTCIP 2104	SP-Ethernet Subnet Profile for Ethernet
NTCIP 2201	TP-Null Transport Profile
NTCIP 2202	Internet Transport Profile (TCP/IP and UDP/IP)
NTCIP 2301	AP for Simple Transportation Management Framework

# **B.** Features

Each DMS shall be required to support the following optional features, conformance groups and all functional requirements and objects that apply herein.

Feature	Reference
Time Management	NTCIP 1201 v3
Timebase Event Schedule	NTCIP 1201 v3
PMPP	NTCIP 1201 v3
Determine Sign Display Capabilities	NTCIP 1203 v03
Manage Fonts	NTCIP 1203 v03
Manage Graphics	NTCIP 1203 v03
Schedule Messages for Display	NTCIP 1203 v03
Change Message Display Based on and Internal	NTCIP 1203 v03
Event	
Control External Devices	NTCIP 1203 v03
Monitor Sign Environment	NTCIP 1203 v03
Monitor Door Status	NTCIP 1203 v03
Monitor Controller Software Operations	NTCIP 1203 v03
Monitor Automatic Blanking of Sign	NTCIP 1203 v03
Report	NTCIP 1103 v03

# C. Objects

The following table represents objects that are considered optional in the NTCIP standards but are required by this specification. It also indicated modified objects value ranges for certain objects. Each DMS shall provide the full, standard object range support (FSORS) of all the objects required by these specifications unless otherwise stated below.

Object	Reference	Requirement
moduleTable	NTCIP 1201 – 2.2.3	Shall contain at least one row with
		moduleType equal to 3 (software)
		The moduleMake specifies the name
		of the manufacturer, the
		moduleModel specifies the
		manufacturer's name of the
		component and the moduleVersion
		indicates the model version number
		of the component.
maxTimeBaseScheduleEntries	NTCIP 1201 -	Shall be at least 28
	2.4.3.1.	
maxDayPlans	NTCIP 1201 – 2.4.4.1	Shall be at least 20
maxDayPlanEvents	NTCIP 1201 – 2.4.4.2	Shall be at least 12
maxGroupAddresses	NTCIP 1201 – 2.7.1	Shall be at least 1
maxEventLogConfigs	NTCIP 1103 – A.7.4	Shall be at least 50
eventConfigMode	NTCIP 1103 -	The DMS shall support the
	A.7.5.3	following Event Configurations:
		onChange, greaterThanValue,
		smallerThanValue
eventConfigLogOID	NTCIP 1103 -	FSORS
	A.7.5.7	
eventConfigAction	NTCIP 1103 -	FSORS
	A.7.5.8	
maxEventLogSize	NTCIP 1103 – A.7.6	Shall be at least 20
maxEventClasses	NCTIP 1103 – A.7.2	Shall be at least 16
eventClassDescription	NTCIP 1103 -	FSORS
	A.7.3.4	
communityNamesMax	NTCIP 1103 – A.7.8	Shall be at least 3
numFonts	NTCIP 1203 – 5.4.1	Shall be at least 12
maxFontCharacters	NTCIP 1203 – 5.4.3	Shall be at least 255
defaultFlashOn	NTCIP 1203 – 5.5.3	The DMS shall support flash "on"
		times ranging from 0.1 to 9.9
		seconds in 0.1 second increments
defaultFlashOnActive	NTCIP 1203 – 5.5.4	The DMS shall support flash "on"
		times ranging from 0.1 to 9.9
		seconds in 0.1 second increments
defaultFlashOff	NTCIP 1203 - 5.5.5	The DMS shall support flash
		"off" times ranging from 0.1 to
		9.9 seconds in 0.1 second

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		increments
defaultFlassOffActive	NTCIP 1203 – 5.5.6	The DMS shall support flash
		"off" times ranging from 0.1 to
		9.9 seconds in 0.1 second
		increments
defaultBackgroundColor	NTCIP 1203 – 5.5.2	The DMS shall support the
		black background color
defaultForegroundColor	NTCIP 1203 - 5.5.2	The DMS shall support the
		amber foreground color
defaultJustificationLine	NTCIP 1203 - 5.5.9	The DMS shall support the
		following forms of line
		justification: left, center, and
		right
defaultJustificationPage	NTCIP 1203 - 5.5.11	The DMS shall support the
		following forms of page
		justification: top, middle, and
		bottom
defaultPageOnTime	NTCIP 1203 - 5.5.13	The DMS shall support page
-		"on" times ranging from 0.1 to
		25.5 seconds in 0.1 second
		increments
defaultPageOffTime	NTCIP 1203 - 5.5.15	The DMS shall support page
C		"off" times ranging from 0.0 to
		25.5 seconds in 0.1 second
		increments
defaultCharacterSet	NTCIP 1203 - 5.5.21	The DMS shall support the
		eight bit character set
dmsMaxChangeableMsg	NTCIP 1203 - 5.6.3	Shall be at least 100.
dmsMessageMultiString	NTCIP 1203 - 5.6.8.3	The DMS shall support any
0 0		valid MULTI string containing
		any subset of those MULTI
		tags listed in Table 3 (below)
dmsControlMode	NTCIP 1203 - 5.7.1	Shall support at least the
		following modes: local, central,
		and centralOverride
dmsSWReset	NTCIP 1203 - 5.7.2	FSORS
dmsMessageTimeRemaining	NTCIP 1203 - 5.7.4	FSORS
dmsShortPowerRecoveryMessage	NTCIP 1203 - 5.7.8	FSORS
dmsLongPowerRecoveryMessage	NTCIP 1203 - 5.7.9	FSORS
dmsShortPowerLossTime	NTCIP 1203 – 5.7.14	FSORS
dmsResetMessage	NTCIP 1203 - 5.7.11	FSORS
dmsCommunicationsLossMessage	NTCIP 1203 - 5.7.12	FSORS
dmsTimeCommLoss	NTCIP 1203 - 5.7.13	FSORS
	1,10H 1200 010	
	NTCIP 1203 - 5 7 15	FSORS
dmsEndDurationMessage dmsMultiOtherErrorDescription	NTCIP 1203 - 5.7.15 NTCIP 1203 - 5.7.20	FSORS If the vendor implements any

		the DMS shall provide
		meaningful error messages
		within this object whenever
		one of these tags generates an
		error
dmsIllumControl	NTCIP 1203 - 5.8.1	The DMS shall support the
		following illumination control
		modes: Photocell, and Manual
dmsIllumNumBrightLevels	NTCIP 1203 - 5.8.4	Shall be at least 100
dmsIllumLightOutputStatus	NTCIP 1203 - 5.8.9	FSORS
numActionTableEntries	NTCIP 1203 - 5.9.1	Shall be at least 200
watcdogFailureCount	NTCIP 1203 -	FSORS
-	5.11.1.5	
dmsStatDoorOpen	NTCIP 1203 -	FSORS
	5.11.1.6	
fanFailures	NTCIP 1203 -	FSORS
	5.11.2.3.1	
fanTestActivation	NTCIP 1203 -	FSORS
	5.11.2.3.2	
tempMinCtrlCabinet	NTCIP 1203 -	FSORS
	5.11.4.1	
tempMaxCtrlCabinet	NTCIP 1203 -	FSORS
	5.11.4.2	
tempMinSignHousing	NTCIP 1203 -	FSORS
	5.11.4.5	
tempMaxSignHousing	NTCIP 1203 -	FSORS
	5.11.4.6	

## **D. MULTI Tags**

Each DMS shall support the following message formatting MULTI tags. The manufacturer may choose to support additional standard or manufacturer specific MULTI tags.

Code	Feature	
f1	field 1 - time (12hr)	
f2	field 2 - time (24hr)	
f8	field 8 – day of month	
f9	field 9 – month	
f10	field 10 - 2 digit year	
f11	field 11 - 4 digit year	
fl (and /fl)	flashing text on a line by line basis with flash rates controllable in 0.5 second increments.	
fo	Font	
j12	Justification – line – left	
j12 j13	Justification – line – center	
jl4	Justification – line – right	

Code	Feature			
j15 jp2 jp3 jp4	Justification – line – full			
jp2	Justification – page – top			
jp3	Justification – page – middle			
jp4	Justification – page – bottom			
mv	moving text			
nl	new line			
np	new page, up to 2 instances in a message (i.e., up to 3			
	pages/frames in a message counting first page)			
pt	page times controllable in 0.5 second increments.			

#### E. Documentation

Supply software with full documentation, including a CD-ROM containing ASCII versions of the following MIB files in Abstract Syntax Notation 1 (ASN.1) format:

- The relevant version of each official standard MIB Module referenced by the device functionality.
- If the device does not support the full range of any given object within a Standard MIB Module, a manufacturer specific version of the official Standard MIB Module with the supported range indicated in ASN.1 format in the SYNTAX and/or DESCRIPTION fields of the associated OBJECT TYPE macro. Name this file identical to the standard MIB Module, except that it will have the extension ".man".
- A MIB Module in ASN.1 format containing any and all manufacturer-specific objects supported by the device with accurate and meaningful DESCRIPTION fields and supported ranges indicated in the SYNTAX field of the OBJECT-TYPE macros.
- A MIB containing any other objects supported by the device.

Allow the use of any and all of this documentation by any party authorized by the Department for systems integration purposes at any time initially or in the future, regardless of what parties are involved in the systems integration effort.

#### F. NTCIP Acceptance Testing

Test the NTCIP requirements outlined above by a third party testing firm. Submit to the Engineer for approval a portfolio of the selected firm. Include the name, address, and a history of the selected firm in performing NTCIP testing along with references. Also provide a contact person's name and phone number. Submit detailed NTCIP testing plans and procedures, including a list of hardware and software, to the Engineer for review and approval 10 days in advance of a scheduled testing date. Develop test documents based on the NTCIP requirements of these Project Special Provisions. The acceptance test will use the NTCIP Exerciser, and/or other authorized testing tools and will follow the guidelines established in the ENTERPRISE Test Procedures. Conduct the test in North Carolina on the installed system in the presence of the Engineer for review and approval. In case of failures, remedy the problem and have the firm retest in North Carolina. Continue process until all failures are resolved. The Department reserves the right to enhance these tests as deemed appropriate to ensure device compliance.

#### 4.2. Measurement and Payment

There will be no direct payment for the work covered by this section.

Payment for this work will be covered in the applicable sections of these Project Special Provisions at the contract unit price for "Dynamic Message Sign ()" and will be full compensation for all work listed above.

## 5. DMS PEDESTAL STRUCTURE

## 5.1. **DESCRIPTION**

This section includes all design, fabrication, furnishing, and erection of the DMS pedestal structure, platforms, walkways, ladders for access to the DMS inspection doors, and attachment of the DMS enclosures to the structure in accordance with the requirements of these Project Special Provisions and the Project Plans. Fabricate the supporting DMS assemblies from tubular steel. Furnish pedestal type DMS assemblies as shown in the Project Plans.

Provide pedestal DMS structures with a minimum of 25 feet clearance from the high point of the road to the bottom of the DMS enclosure.

Design the new DMS assemblies (including footings), DMS mounting assemblies, maintenance platforms, and access ladders and submit shop drawings for approval. A Professional Engineer that is registered in the state of North Carolina will prepare such computations and drawings. These must bear his signature, seal, and date of acceptance.

Furnish the back-to-back pedestal type DMS structure at the DMS-1/DMS-2 location with one ladder, safety cage and maintenance platform to service both DMSs.

"The provisions of Section 900 of the Standard Specifications apply to all work covered by this section.

The Standard Provisions SP09R005 and SP09R007 found at the link below apply to all work covered by this section.

https://connect.ncdot.gov/resources/Specifications/Pages/2018-Specifications-and-Special-Provisions.aspx

It is the Contractor's responsibility to verify DMS S-dimension elevation drawings for the DMS locations and provide them with the DMS shop drawings for the Engineer's approval.

#### 5.2. MATERIALS

Use materials that meet the requirements of:

- Section 906 of the 2018 Standard Specification for Roads and Structures.
- Standard Provision SP09R005 Foundations and Anchor Rod Assemblies for Metal Poles.
- Standard Provision SP09R007 Overhead and Dynamic Message Sign Foundations.

#### 5.3. CONSTRUCTION METHODS

#### A. General

Construct DMS structures and assemblies in accordance with the requirements of:

- Section 906 of the 2018 Standard Specification for Roads and Structures.
- Standard Provision SP09R005 Foundations and Anchor Rod Assemblies for Metal Poles.

• Standard Provision SP09R007 Overhead and Dynamic Message Sign Foundations.

# **B. DMS Maintenance Platform (Walkway)**

Provide a maintenance platform (walkway), a minimum of three feet wide with open skid resistant surface and safety railing on the DMS assemblies for access to one of the DMS inspection doors as shown on the plans. Provide platforms with fixed safety railings along both sides from the beginning of the platform to the inspection door. No gap is allowed between walkway and inspection door or along any part of the safety rails.

Ensure the design, fabrication and installation of the access platforms on new DMS structures complies with the following:

- A. The top of the platform grading surface is vertically aligned with the bottom of the DMS door,
- B. The DMS door will open 90-degrees from its closed position without any obstruction from the platform or safety handrails,
- C. The platform is rigidly and directly connected to the walkway brackets and there is no uneven surface between sections,
- D. Install a 4" x 4" safety angle parallel to and along both sides of the platform and extend it the entire length of the platform. Design the safety angle to withstand loading equivalent to the platform,
- E. Ensure the platform design allows full access to the DMS enclosure inspection doors with no interference or obstructions.

#### C. DMS Access Ladder

Provide a fixed ladder, of the same material as the pedestal structures, leading to and ending at the access platform. Equip the ladder with a security cover (ladder guard) and lock to prohibit access by unauthorized persons. Furnish the lock to operate with a Corbin #2 key and furnish two keys per lock. Design the rungs on 12-inch center to center typical spacing. Start the first ladder rung no more than 18 inches above the landing pad. Attach the security cover approximately 6 feet above the finished ground. Design the ladder and security cover as a permanent part of the DMS assembly and include complete design details in the DMS assembly shop drawings. Fabricate the ladder and cover to meet all OSHA requirements and applicable state and local codes, including but not limited to providing a ladder cage.

Furnish and install a level concrete pad a minimum of 4 inches deep, 24 inches wide, and 36 inches long to service as a landing pad for accessing the ladder. Design the landing pad to be directly below the bottom rung. Access to the ladder shall not be obstructed by the DMS foundation. Provide pre-formed or cast-in place concrete pads.

# 5.4. MEASUREMENT AND PAYMENT

*DMS Pedestal Structure* will be measured and paid as the actual number of dynamic message sign pedestal structure assemblies furnished, installed, and accepted. Payment includes all design, fabrication, construction, transportation, and attachment of the complete relocated dynamic message sign assemblies, supporting structure, hardware, access platform, direct tension indicators, preparing and furnishing shop drawings, additional documentation, incidentals, and all other equipment and features necessary to furnish the system described above.

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*DMS Access Ladder* will be measured and paid as the actual number of DMS access ladders, platform, walkway furnished, installed and accepted. Payment includes design, fabrication, transportation, attachment to the DMS assembly as described above, lock with two keys each, and concrete pad.

*Overhead Footings* will be measured and paid in cubic yards and will be full compensation for all materials and labor required in *Overhead and Dynamic Message Sign Foundations (SP09 R007) and Foundations and Anchor Rod Assemblies for Metal Poles* (PS09 R005) referred in the link above. Payment will be made according to PS09 R007

The contract unit price for Overhead Footings will be full compensation for providing labor, tools, equipment and foundation materials, stabilizing or shoring excavations, supplying and placing concrete, reinforcing steel, conduit, anchor rod assemblies and any incidentals necessary to construct sign foundations. Subsurface investigations required by the Engineer will be paid as extra work in accordance with Article 104-7 of the *2018 Standard Specifications for Roads and Structures*.

Payment will be made under:

DMS Pedestal Structure	Each
DMS Access Ladder	Each
Overhead Footings	CY

## 6. OBSERVATION PERIOD

#### 6.1. 30-DAY OBSERVATION PERIOD

The 30-Day Observation Period shall be considered part of work to be completed by the project completion date.

Upon successful completion of all project work the 30-day Observation Period may commence. Examples of project work includes but is not limited to:

- Installation of all project devices and communications infrastructure.
- Field Acceptance Testing of all devices.
- Central System Testing of all devices and network communications.
- Correction of all deficiencies and punch list items. (including minor construction items)

This observation consists of a 30-day period of normal, day-to-day operations of the field equipment in operation with new or existing central equipment without any failures. The purpose of this period is to ensure that all components of the system function in accordance with the Plans and these Project Special Provisions.

Respond to system or component failures (or reported failures) that occur during the 30-day Observation Period within twenty-four (24) hours. Correct any failures within forty-eight (48) hours (includes time of notification). Any failure that affects a major system component as defined below for more than forty-eight (48) hours will suspend the timing of the 30-day Observation Period beginning at the time when the Contractor is was notified that the failure occurred. After the cause of such failures has been corrected, timing of the 30-day Observation Period will resume. System or component failures that necessitate a redesign of any component or a failure in any of the major

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system components exceeding a total of three (3) occurrences will terminate the 30-day Observation Period for that system. The 30-day Observation Period will be restarted from day zero when the redesigned components have been installed and/or the failures corrected. The major system components are:

- CCTV Cameras and Central Operations
- Dynamic Message Sign (DMS) and Central equipment/Operations
- Portable Changeable Message Sign (PCMS)
- Communications infrastructure (examples: Fiber, Radios, Ethernet Switches, Core Switches, etc.)
- Any other ITS Devices not named above (examples: DSRC radios, Radar and Out-of-Street Detection, signals, etc.)

#### **6.2. FINAL ACCEPTANCE**

Final system acceptance is defined as the time when all work and materials described in the Plans and these Project Special Provisions have been furnished and completely installed by the Contractor; all parts of the work have been approved and accepted by the Engineer; and successful completion of the 30-day observation period.

The completed System will be ready for final acceptance upon the satisfactory completion of all acceptance tests as detailed in their respective Section of the Project Special provisions; the rectification of all punch-list discrepancies; and the submittal of all project documentation including as-built plans.

#### 6.3. MEASUREMENT AND PAYMENT

There will be no payment for this item of work as it is incidental to the project as a whole and to the item of work in which it is associated.

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**BEAUFORT & MARTIN COUNTIES** 

# **Project Special Provisions**

# **Structures & Culverts**

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#### PROJECT SPECIAL PROVISIONS STRUCTURE

#### **STEEL REINFORCED ELASTOMERIC BEARINGS** (6-22-16)

The 2018 Standard Specifications shall be revised as follows: In **Section 1079-2(A) – Elastomeric Bearings** add the following after the second paragraph:

Internal holding pins are required for all shim plates when the contract plans indicate the structure contains the necessary corrosion protection for a corrosive site.

Repair laminated (reinforced) bearing pads utilizing external holding pins via vulcanization. Submit product data for repair material and a detailed application procedure to the Materials and Tests Unit for approval before use and annually thereafter.

#### FALSEWORK AND FORMWORK

#### (2-14-22)

#### DESCRIPTION

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

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

Design and construct safe and adequate temporary works that will support all loads imposed and provide the necessary rigidity to achieve the lines and grades shown on the plans in the final structure. Project R-2511

#### MATERIALS

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

#### **DESIGN REQUIREMENTS**

#### Working Drawings

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

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

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

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

If requested by the Engineer, submit with the working drawings manufacturer's catalog data listing the weight of all construction equipment that will be supported on the temporary work. Show anticipated total settlements and/or deflections of falsework and forms on the working drawings. Include falsework footing settlements, joint take-up, and deflection of beams or girders.

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

Member Type (PCG)	Member Depth, (inches)	Max. Overhang Width, (inches)	Max. Slab Edge Thickness, (inches)	Max. Screed Wheel Weight, (lbs.)	Bracket Min. Vertical Leg Extension, (inches)
II	36	39	14	2000	26
III	45	42	14	2000	35
IV	54	45	14	2000	44

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MBT	63	51	12	2000	50
MBT	72	55	12	1700	48

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

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

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

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

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

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

Falsework hangers that support concentrated loads and are installed at the edge of thin top flange concrete girders (such as bulb tee girders) shall be spaced so as not to exceed 75% of the manufacturer's stated safe working load. Use of dual leg hangers (such as Meadow Burke HF-42 and HF-43) are not allowed on concrete girders with thin top flanges. Design the falsework and forms supporting deck slabs and overhangs on girder bridges so that there will be no differential settlement between the girders and the deck forms during placement of deck concrete.

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

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

Design falsework and formwork requiring submittals in accordance with the 1995 AASHTO *Guide Design Specifications for Bridge Temporary Works* except as noted herein.

Wind Loads

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

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

**Table 2.2 - Wind Pressure Values** 

Time of Removal

The following requirements replace those of Article 3.4.8.2.

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

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

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

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

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#### **BEAUFORT & MARTIN COUNTIES**

Edgecombe	80	Onslow	100	
Forsyth	70	Orange	70	

Review and Approval

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

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

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

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

#### **CONSTRUCTION REQUIREMENTS**

All requirements of Section 420 of the Standard Specifications apply.

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

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

#### Maintenance and Inspection

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

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

the cofferdams, shoring, sheathing, support of excavation structures, and support systems for load tests prior to loading.

Foundations

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

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

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

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

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

#### REMOVAL

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

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

#### METHOD OF MEASUREMENT

Unless otherwise specified, temporary works will not be directly measured.

#### **BASIS OF PAYMENT**

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

### BEAUFORT & MARTIN COUNTIES

#### SUBMITTAL OF WORKING DRAWINGS

(2-14-22)

#### GENERAL

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

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

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

#### **ADDRESSES AND CONTACTS**

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

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

Via US mail:	Via other delivery service:
Mr. B. C. Hanks, P. E. State Structures Engineer North Carolina Department of Transportation Structures Management Unit 1581 Mail Service Center Raleigh, NC 27699-1581	Mr. B. C. Hanks, P. E. State Structures Engineer North Carolina Department of Transportation Structures Management Unit 1000 Birch Ridge Drive Raleigh, NC 27610
Attention: Mr. J. L. Bolden, P. E.	Attention: Mr. J. L. Bolden, P. E.

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

For projects in Divisions 1-7, use the following Eastern Regional Office addresses:

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#### **BEAUFORT & MARTIN COUNTIES**

Via Email: <u>EastGeotechnicalSubmittal@ncdot.gov</u>

Via US mail:

Mr. David Hering, L.G., P. E. Assistant State Geotechnical Engineer – Eastern Region North Carolina Department of Transportation Geotechnical Engineering Unit Eastern Regional Office 1570 Mail Service Center Raleigh, NC 27699-1570 Via other delivery service:

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

For projects in Divisions 8-14, use the following Western Regional Office addresses:

Via Email: <u>WestGeotechnicalSubmittal@ncdot.gov</u>

Via US mail or other delivery service:

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

The status of the review of structure-related submittals sent to the Structures Management Unit can be viewed from the Unit's website, via the "<u>Drawing Submittal Status</u>" link. The status of the review of geotechnical-related submittals sent to the Geotechnical Engineering Unit can be viewed from the Unit's website, via the "<u>Geotechnical</u> <u>Construction Submittals</u>" link.

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

Primary Structures Contact:	James Bolden	(919) 707 – 6408
	jlbolden@ncdot	.gov
Secondary Structures Contacts:	Emmanuel Omil	e (919) 707 – 6451
	eomile@ncdot.g	OV

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#### **BEAUFORT & MARTIN COUNTIES**

Madonna Rorie (919) 707 – 6508

mrorie@ncdot.gov

Eastern Regional Geotechnical Contact (Divisions 1-7):

David Hering (919) 662 – 4710

dthering@ncdot.gov

Western Regional Geotechnical Contact (Divisions 8-14):

Eric Williams (704) 455 – 8902

ewilliams3@ncdot.gov

#### SUBMITTAL COPIES

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

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

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

#### STRUCTURE SUBMITTALS

Submittal	Submittal Required by Structures Management Unit?	Submittal Required by Geotechnical Engineering Unit?	Contract Reference Requiring Submittal <sup>1</sup>
Arch Culvert Falsework	Y	Ν	Plan Note, SN Sheet & "Falsework and Formwork"

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Box Culvert Falsework <sup>7</sup>	Y	Ν	Plan Note, SN Sheet & "Falsework and Formwork"
Cofferdams	Y	Y	Article 410-4
Foam Joint Seals <sup>6</sup>	Y	Ν	"Foam Joint Seals"
Expansion Joint Seals (hold down plate type with base angle)	Y	Ν	"Expansion Joint Seals"
Expansion Joint Seals (modular)	Y	Ν	"Modular Expansion Joint Seals"
Expansion Joint Seals (strip seals)	Y	Ν	"Strip Seal Expansion Joints"
Falsework & Forms <sup>2</sup> (substructure)	Y	Ν	Article 420-3 & "Falsework and Formwork"
Falsework & Forms (superstructure)	Y	Ν	Article 420-3 & "Falsework and Formwork"
Girder Erection over Railroad	Y	Ν	<b>Railroad Provisions</b>
Maintenance and Protection of Traffic Beneath Proposed Structure	Y	Ν	"Maintenance and Protection of Traffic Beneath Proposed Structure at Station"
Metal Bridge Railing	Y	Ν	Plan Note
Metal Stay-in-Place Forms	Y	Ν	Article 420-3
Metalwork for Elastomeric Bearings <sup>4,5</sup>	Y	Ν	Article 1072-8
Miscellaneous Metalwork 4,5	Y	Ν	Article 1072-8
Disc Bearings <sup>4</sup>	Y	Ν	"Disc Bearings"
Overhead and Digital Message Signs (DMS) (metalwork and foundations)	Y	Ν	Applicable Provisions
Placement of Equipment on Structures (cranes, etc.)	Y	Ν	Article 420-20
Prestressed Concrete Box Beam (detensioning sequences) <sup>3</sup>	Y	Ν	Article 1078-11

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Precast Concrete Box Culverts	Y	Ν	"Optional Precast Reinforced Concrete Box Culvert at Station"
Prestressed Concrete Cored Slab (detensioning sequences) <sup>3</sup>	Y	Ν	Article 1078-11
Prestressed Concrete Deck Panels	Y	Ν	Article 420-3
Prestressed Concrete Girder (strand elongation and detensioning sequences)	Y	Ν	Articles 1078-8 and 1078- 11
Removal of Existing Structure over Railroad	Y	Ν	<b>Railroad Provisions</b>
Revised Bridge Deck Plans (adaptation to prestressed deck panels)	Y	Ν	Article 420-3
Revised Bridge Deck Plans (adaptation to modular expansion joint seals)	Y	Ν	"Modular Expansion Joint Seals"
Sound Barrier Wall (precast items)	Y	Ν	Article 1077-2 & "Sound Barrier Wall"
Sound Barrier Wall Steel Fabrication Plans <sup>5</sup>	Y	Ν	Article 1072-8 & "Sound Barrier Wall"
Structural Steel <sup>4</sup>	Y	Ν	Article 1072-8
Temporary Detour Structures	Y	Y	Article 400-3 & "Construction, Maintenance and Removal of Temporary Structure at Station"
TFE Expansion Bearings <sup>4</sup>	Y	Ν	Article 1072-8

### FOOTNOTES

- 1. References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Articles refer to the *Standard Specifications*.
- 2. Submittals for these items are necessary only when required by a note on plans.

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- 3. Submittals for these items may not be required. A list of pre-approved sequences is available from the producer or the Materials & Tests Unit.
- 4. The fabricator may submit these items directly to the Structures Management Unit.
- 5. The two sets of preliminary submittals required by Article 1072-8 of the *Standard Specifications* are not required for these items.
- 6. Submittals for Fabrication Drawings are not required. Submittals for Catalogue Cuts of Proposed Material are required. See Section 5.A of the referenced provision.
- 7. Submittals are necessary only when the top slab thickness is 18" or greater.

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

## **GEOTECHNICAL SUBMITTALS**

#### FOOTNOTES

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- 1. References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Subarticles refer to the *Standard Specifications*.
- 2. Submit one hard copy of submittal to the Engineer. Submit a second copy of submittal electronically (PDF via email), US mail or other delivery service to the appropriate Geotechnical Engineering Unit regional office. Electronic submission is preferred.
- 3. The Pile Driving Equipment Data Form is available from: https://connect.ncdot.gov/resources/Geological/Pages/Geotech\_Forms\_Details.aspx

See second page of form for submittal instructions.

4. Electronic copy of submittal is required. See referenced provision.

## CRANE SAFETY

## (6-20-19)

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

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

## CRANE SAFETY SUBMITTAL LIST

- A. <u>Competent Person</u>: Provide the name and qualifications of the "Competent Person" responsible for crane safety and lifting operations. The named competent person will have the responsibility and authority to stop any work activity due to safety concerns.
- B. <u>**Riggers:**</u> Provide the qualifications and experience of the persons responsible for rigging operations. Qualifications and experience should include, but not be limited to, weight calculations, center of gravity determinations, selection and inspection of sling and rigging equipment, and safe rigging practices.
- C. <u>Crane Inspections:</u> Inspection records for all cranes shall be current and readily accessible for review upon request.
- D. <u>Certifications:</u> Crane operators shall be certified by the National Commission for the Certification of Crane Operators (NCCCO) or the National Center for

## BEAUFORT & MARTIN COUNTIES

Construction Education and Research (NCCER). Other approved nationally accredited programs will be considered upon request. In addition, crane operators shall have a current CDL medical card. Submit a list of crane operator(s) and include current certification for each type of crane operated (small hydraulic, large hydraulic, small lattice, large lattice) and medical evaluations for each operator.

## **GROUT FOR STRUCTURES**

(12-1-17)

## **1.0 DESCRIPTION**

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

## **2.0 MATERIAL REQUIREMENTS**

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

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

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

#### **3.0 SAMPLING AND PLACEMENT**

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

#### 4.0 BASIS OF PAYMENT

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

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## ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND (12-30-15) RENOVATION ACTIVITES

#### **1.0** INSPECTION FOR ASBESTOS CONTAINING MATERIAL

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

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

\_\_\_\_ ACM was found \_\_\_\_ ACM was not found

#### 2.0 REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING MATERIAL

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

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

#### **3.0 DEMOLITION NOTIFICATION**

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

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## **BEAUFORT & MARTIN COUNTIES**

HHCU. Reference the North Carolina Administrative Code, Chapter 10A, Subchapter 41C, Article .0605 for directives on revision submissions.

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

#### 4.0 SPECIAL CONSIDERATIONS

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

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

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

<u>Forsyth County</u> Environmental Affairs Department 537 N. Spruce Street Winston-Salem, NC 27101 (336) 703-2440

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

#### 5.0 Additional Information

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

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

#### 6.0 BASIS OF PAYMENT

Payment for the work required in this provision will be at the lump sum contract unit price for "Asbestos Assessment". Such payment will be full compensation for all asbestos inspections, reports, permitting and notifications.

## THERMAL SPRAYED COATINGS (METALLIZATION) (12-1-2017)

#### DESCRIPTION

Apply a thermal sprayed coating (TSC) and sealer to metal surfaces in accordance with the Thermal Sprayed Coatings (Metallization) Program and as specified herein when called for on the plans or by other Special Provisions. Use only Arc Sprayed application methods to apply TSC. The Engineer must approve other methods of application.

The Thermal Sprayed Coatings (Metallization) Program is available on the Materials and Tests Unit website.

#### QUALIFICATIONS

Only use NCDOT approved TSC Contractors meeting the requirements outlined in the Thermal Sprayed Coatings (Metallization) Program.

#### MATERIALS

Use only materials meeting the requirements of Section 7 of the Thermal Sprayed Coatings (Metallization) Program.

#### SURFACE PREPARATION AND TSC APPLICATION

Surface preparation of TSC surfaces shall meet the requirements of Section 8 of the Thermal Sprayed Coatings (Metallization) Program. Apply TSC with the alloy to the thickness specified on the plans or as required by Thermal Sprayed Coatings (Metallization) Program.

#### **INSPECTION AND TESTING**

The TSC Contractor must conduct inspections and tests listed in the Thermal Sprayed Coatings (Metallization) Program.

## **BEAUFORT & MARTIN COUNTIES**

#### REPAIRS

Perform all shop repairs in accordance with the procedures outlined in the Thermal Sprayed Coatings (Metallization) Program.

Repairs associated with field welding shall be made by removing the existing metallizing by blast or power tool cleaning. Affected areas shall be addressed as follows:

- For Marine Environments, incorporate a minimum surface preparation in accordance with SSPC SP-11 (Power Tool Cleaning to Bare Metal) and require an approved epoxy mastic coating applied in accordance with the manufacturer's recommendation. Apply a minimum of two (2) coats at a rate of 5-7 (WFT) per coat to the affected area.
- For Non-Marine Environments, incorporate a minimum surface preparation in accordance with SSPC SP-11 (Power Tool Cleaning to Bare Metal) and require an approved organic zinc-rich coating applied in accordance with the manufacturer's recommendation. Apply a minimum of two (2) coats at a rate of 5-7 (WFT) per coat to the affected area.
  - 1. Minor localized areas less than or equal to 0.1 ft<sup>2</sup> with exposed substrate shall be repaired as outlined above for marine and non-marine environments.
  - 2. Large localized areas greater than 0.1 ft<sup>2</sup> with exposed substrate shall require the Contractor to submit a detailed repair procedure to the Engineer for review and approval.
- Repair methods for areas where the substrate has not been exposed shall be mutually agreed upon between the Contractor and TSC Contractor as approved by the Engineer.

#### TWELVE MONTH OBSERVATION PERIOD

All TSC materials applied under the Thermal Sprayed Coatings (Metallization) Program shall be evaluated twelve (12) months after project acceptance for defective materials and workmanship.

#### **BASIS OF PAYMENT**

The contract price bid for the metal component to which the TSC is applied will be full compensation for the thermal sprayed coating.

#### 18" GALVANIZED STEEL SHEET PILES

(SPECIAL)

The 2018 Standard Specifications shall be revised as follows:

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Replace the first paragraph of Section **1084-2** – **STEEL SHEET PILES** with the following:

Steel sheet piles detailed for permanent applications shall be hot rolled and meet ASTM A572 or ASTM A690 unless otherwise required by the plans. Steel sheet piles shall be coated as required by the plans. Galvanized sheet piles shall be coated in accordance with Section 1076. Complete all work in accordance with the contract plans and Section 452 of the Standard Specifications except measurement and payment for the steel sheet piles will be as described below.

Sheet piles will be measured and paid as the actual number of square feet of sheet piles completed and accepted. In determining this quantity, the sheet pile length used in the computation is the sheet pile length shown on the plans. The sheet pile heights are measured as the difference between the top elevation as shown on the plans and the bottom of the steel sheet piles.

Payment will be made under:

## **PROJECT SPECIAL PROVISION**

(10-18-95) (Rev. 3-21-17)

## PERMITS

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

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

The Contractor shall comply with all applicable permit conditions during construction of this project. Those conditions marked by \* are the responsibility of the Department and the Contractor has no responsibility in accomplishing those conditions.

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 2018 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.

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## **U.S. ARMY CORPS OF ENGINEERS**

#### WILMINGTON DISTRICT

#### Action Id. SAW-2004-11082 County: Beaufort County U.S.G.S. Quad: Old Ford

#### **GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION**

Permittee:	<u>Paul Williams</u>		
	NCDOT Division 1		
Address:	<b><u>113 Airport Drive</u></b>		
	<b>Edenton NC, 27932</b>		
Telephone Number:	<u>(252) 482-1861</u>		
Size (acres)	Project area ROW for 11 miles	Nearest Town	Williamston
Nearest Waterway	Smithwick Creek	<b>River Basin</b>	Pamlico
USGS HUC	03020103	Coordinates	Latitude: 35.68976
			Longitude: <u>-77.080023</u>
Location description	n: The project is located along the US 17 H	<u> Iighway corridor</u>	· between the community of Old Ford in Beaufort
County running ap	proximately 10.6 miles north to Mill Inn F	Road near the toy	<u>wn of Williamston in Martin County, North</u>
<u>Carolina.</u>			
median for approx	imately 10.6 miles. The bridge over Gum S	Swamp will be re	US 17 from a 2 lane to a 4 lane with a raised placed with dual bridges along with multiple npacts associated with this project are covered
Applicable Law:	<ul> <li>Section 404 (Clean Water Act, 33 USC</li> <li>Section 10 (Rivers and Harbors Act, 33</li> </ul>	/	
Authorization: Reg	ional General Permit Number and/or Nationv	vide Permit Numł	per: RGP 31

# SEE ATTACHED RGP or NWP GENERAL, REGIONAL AND/OR SPECIAL CONDITIONS

Your work is authorized by the above referenced permit provided it is accomplished in strict accordance with the attached conditions and your submitted application and attached information dated June 23, 2021 and Utility Supplemental Plans dated August 4, 2021. Any violation of the attached conditions or deviation from your submitted plans may subject the permittee to a stop work order, a restoration order, a Class I administrative penalty, and/or appropriate legal action.

This verification will remain valid until the expiration date identified below unless the nationwide and/or regional general permit authorization is modified, suspended or revoked. If, prior to the expiration date identified below, the nationwide and/or regional general permit authorization is reissued and/or modified, this verification will remain valid until the expiration date identified below, provided it complies with all requirements of the modified nationwide permit. If the nationwide and/or regional general permit authorization expires or is suspended, revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide and/or regional general permit, will remain authorized provided the activity is completed within twelve months of the date of the nationwide and/or regional general permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

Activities subject to Section 404 (as indicated above) may also require an individual Section 401 Water Quality Certification. You should contact the NC Division of Water Resources (telephone 919-807-6300) to determine Section 401 requirements.

For activities occurring within the twenty coastal counties subject to regulation under the Coastal Area Management Act (CAMA), prior to beginning work you must contact the N.C. Division of Coastal Management in Elizabeth City, NC, at (252) 264-3901.

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits.

If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact <u>Kyle Barnes at (910) 251-4584 or Kyle.W.Barnes@usace.army.mil</u>.

Corps Regulatory Official:	Kill Barnes	Date: November 23, 2021
Expiration Date of Verification:		

#### SAW-2004-11082

#### A. Determination of Jurisdiction:

- 1. There are waters, including wetlands, on the above described project area that may be subject to Section 404 of the Clean Water Act (CWA) (33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction. Please note, if work is authorized by either a general or nationwide permit, and you wish to request an appeal of an approved JD, the appeal must be received by the Corps and the appeal process concluded prior to the commencement of any work in waters of the United States and prior to any work that could alter the hydrology of waters of the United States.
- 2. There are Navigable Waters of the United States within the above described project area subject to the permit requirements of Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403) and Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- 3. There are waters, including wetlands, within the above described project area that are subject to the permit requirements of Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- 4. A jurisdiction determination was not completed with this request. Therefore, this is not an appealable action. However, you may request an approved JD, which is an appealable action, by contacting the Corps for further instruction.
- 5. The aquatic resources within the above described project area have been identified under a previous action. Please reference the approved jurisdictional determination issued . Action ID: SAW- .

# **B.** Basis For Jurisdictional Determination: <u>All Waters and Wetlands within the project area flow unimpeded to</u> <u>either the Tar River or the Roanoke River which are TNW's.</u>

#### C. Remarks:

#### **D.** Attention USDA Program Participants

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

#### E. Appeals Information for Approved Jurisdiction Determinations (as indicated in A2 and A3 above).

If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

US Army Corps of Engineers South Atlantic Division Attn: Philip Shannin, Appeal Review Officer 60 Forsyth Street SW, Room 10M15 Atlanta, Georgia 30303-8801 Phone: (404) 562-5137

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by  $\underline{N/A}$ .

It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.

Corps Regulatory Official:

yle Barnes

Date of JD: November 19, 2021

Expiration Date of JD: None

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete our Customer Satisfaction Survey, located online at <u>http://corpsmapu.usace.army.mil/cm\_apex/f?p=136:4:0</u>.

#### SAW-2004-11082

Copy furnished:

Paul Williams NCDOT Division 1 113 Airport Drive Edenton NC, 27932

#### SPECIAL CONDITIONS

Conditions listed below are related to the activities required for the construction, maintenance, repair, and removal of utility lines for water and other substances and electricity, excluding oil, natural gas and products derived from oil or natural gas.

- A. Electric utility lines and telecommunication lines: This NWP authorizes discharges of dredged or fill material into waters of the United States and structures or work in navigable waters for crossings of those waters associated with the construction, maintenance, or repair of electric utility lines and telecommunication lines. There must be no change in pre-construction contours of waters of the United States. An "electric utility line and telecommunication line" is defined as any cable, line, fiber optic line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and internet, radio, and television communication.
- **B.** Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the electric utility line or telecommunication line crossing of each waterbody.
- C. Electric utility line and telecommunications substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with an electric utility line or telecommunication line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States. This NWP does not authorize discharges of dredged or fill material into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.
- **D.** Foundations for overhead electric utility line or telecommunication line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead electric utility line or telecommunication line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.
- E. Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of electric utility lines or telecommunication lines, including overhead lines and substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges of dredged or fill material into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.
- **F.** This NWP authorizes, to the extent that Department of the Army authorization is required, temporary structures, fills, and work necessary for the remediation of inadvertent returns of drilling fluids to waters of the United States through sub-soil fissures or fractures that might occur during horizontal directional

drilling activities conducted for the purpose of installing or replacing electric utility lines or telecommunication lines. These remediation activities must be done as soon as practicable, to restore the affected waterbody. District engineers may add special conditions to this NWP to require a remediation plan for addressing inadvertent returns of drilling fluids to waters of the United States during horizontal directional drilling activities conducted for the purpose of installing or replacing electric utility lines or telecommunication lines.

- **G.** This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the electric utility line 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.
- **H.** 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.
- I. 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.
- **J.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable
- **K.** 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).
- L. 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.
- **M.** 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.
- **N.** 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).
- **O.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

- **P.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.
- **Q.** 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.
- **R.** 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 preconstruction elevations. The affected areas must be revegetated, as appropriate.
- **S.** 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.
- **T.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
- U. (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 designated critical habitat or critical habitat proposed for such designation. 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 CFR402.02 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 species proposed for listing) or designated critical habitat (or critical habitat proposed 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, 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 species proposed for listing) or designated critical habitat proposed for such designation), the pre-construction notification must include the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or critical habitat proposed for such designation) 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 species proposed for listing) or 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 species proposed for listing) or designated critical habitat proposed for such designation) 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 species proposed for listing or designated critical habitat (or critical habitat proposed for such designation), or until ESA section 7 consultation or conference 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 or conference 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 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 world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa/ respectively.

- V. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring that an action authorized by an 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.
- **W.** 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. 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.

- X. 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 an 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.
- **Y.** 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 3/100-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 3/100-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 a 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.

Z. 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 CFR 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.

- AA. 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.
- **BB.** 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.
- **CC.** 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)

**DD.** 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.

#### EE. <u>Required Mitigation:</u>

NCDOT is required to mitigate for unavoidable impacts to jurisdictional Waters and Wetlands associated with the R-2511 project. The following impacts shall be mitigated at a 2:1 ratio: **1.277 acres** of Riparian wetlands, **0.35 acres** of Non-Riparian wetlands and **635 linear feet** of stream in the Tar-Pamlico 03020103 HUC as well as **2.495 acres** of Riparian wetlands and **1322 linear feet** in the Roanoke 03010107 HUC. The attached mitigation transfer form shall be provided back to the USACE upon completion of mitigation and prior to the impacts to jurisdictional Waters and Wetlands.

#### Definitions:

<u>Best management practices (BMPs)</u>: 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.

<u>Compensatory mitigation</u>: 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.

<u>Currently serviceable</u>: 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.

<u>Discharge</u>: The term "discharge" means any discharge of dredged or fill material into waters of the United States. <u>Ecological reference</u>: 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.

<u>Enhancement:</u> 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.

<u>Establishment (creation)</u>: 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.

<u>High Tide Line</u>: 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.

<u>Historic Property:</u> 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).

<u>Independent utility:</u> 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.

<u>Indirect effects:</u> 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.

<u>Navigable waters:</u> Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

<u>Non-tidal wetland</u>: 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).

<u>Open water</u>: 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.

<u>Ordinary High Water Mark:</u> 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.

<u>Practicable:</u> Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

<u>Pre-construction notification:</u> 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.

<u>Preservation</u>: 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.

<u>Re-establishment:</u> 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.

<u>Rehabilitation</u>: 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.

<u>Restoration</u>: 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.

<u>Riffle and pool complex</u>: 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.

<u>Riparian areas</u>: 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.)

<u>Shellfish seeding</u>: 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.

<u>Single and complete linear project</u>: 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.

<u>Single and complete non-linear project</u>: 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.

<u>Stormwater management:</u> 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.

<u>Stormwater management facilities:</u> 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.

<u>Stream bed:</u> 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.

<u>Stream channelization</u>: 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.

<u>Structure</u>: 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.

<u>Tidal wetland:</u> 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.

<u>Tribal lands</u>: 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.

<u>Tribal rights:</u> 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.

<u>Vegetated shallows</u>: 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.

<u>Waterbody</u>: 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 single 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, *Federal Register* (86 FR 2744) announcing the reissuance of 12 existing (NWPs) and four new NWPs, as well as the reissuance of NWP general conditions and definitions with some modifications.

#### A. EXCLUDED WATERS 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 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. above 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

A. <u>Mitigation for Loss of Stream Bed</u>. 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.

B. <u>Riprap.</u> 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.

C. <u>Culvert Placement</u>. 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.

D. <u>Utility Lines</u>. 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.

E. <u>Temporary Access Fills.</u> 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.

#### F. 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.

G. <u>ESA Programmatic Biological Opinions</u>. 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 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/.

### H. 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. 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/

Action ID Number: <u>SAW-2004-11082</u>

County: Beaufort/Martin Counties

Permittee: <u>Paul Williams</u> NCDOT Division 1

Project Name: NCDOT/FROM SR1205 SOUTH ALONG US17 TO BE/ TIP # R-2511

Date Verification Issued: November 23, 2021

Project Manager: <u>Kyle Barnes</u>

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

## US ARMY CORPS OF ENGINEERS WILMINGTON DISTRICT Attn: Kyle Barnes

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. Failure to comply with any terms or conditions of this authorization may result in the Corps suspending, modifying or revoking the authorization and/or issuing a Class I administrative penalty, or initiating other appropriate legal action.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and condition of the said permit, and required mitigation was completed in accordance with the permit conditions.

**Signature of Permittee** 

Date

DEPARTMENT OF THE ARMY Wilmington District, Corps of Engineers 69 Darlington Avenue Wilmington, North Carolina 28403-1343

Regional General Permit No. <u>SAW-198200031 (RGP 31)</u> Name of Permittee: <u>North Carolina Department of Transportation</u> Effective Date: <u>May 26, 2020</u> Expiration Date: May 25, 2025

## DEPARTMENT OF THE ARMY REGIONAL GENERAL PERMIT

A regional general permit (RGP) to perform work in or affecting navigable waters of the United States and waters of the United States, upon recommendation of the Chief of Engineers, pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403), and Section 404 of the Clean Water Act (33 U.S.C. 1344), is hereby modified and re-issued by authority of the Secretary of the Army by the

District Commander U.S. Army Engineer District, Wilmington Corps of Engineers 69 Darlington Avenue Wilmington, North Carolina 28403-1343

TO AUTHORIZE THE DISCHARGE OF DREDGED OR FILL MATERIAL IN WATERS OF THE UNITED STATES (U.S.), INCLUDING WETLANDS, ASSOCIATED WITH BEST-FIT WIDENING PROJECTS, OR PHASES OF "PHASED" BEST-FIT WIDENING PROJECTS, THAT (1) HAVE UNDERGONE INTERAGENCY REVIEW AND COMPLETED THE INTERAGENCY MERGER PROCESS, AND (2) WOULD CAUSE ONLY MINIMAL INDIVIDUAL AND CUMULATIVE ADVERSE ENVIRONMENTAL EFFECTS. THESE PROJECTS ARE CONDUCTED BY THE VARIOUS DIVISIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT), INCLUDING THE NCDOT DIVISION OF HIGHWAYS, RAIL, BICYCLE/PEDESTRIAN, ETC.

## Detailed Description/Terms

The Merger Process merges the requirements of the National Environmental Policy Act (NEPA) with those of Section 404 of the Clean Water Act (CWA).

A best-fit widening project, or a phase of a "phased" best-fit widening project, must complete the interagency Merger Process in order to qualify for authorization under RGP 31.

Projects that require an Environmental Impact Statement (EIS) cannot be authorized by RGP 31.

Best-fit widening projects, or phases of "phased" best-fit widening projects, may include a small amount of new location roadway for components such as interchanges, intersections, road segments, etc., provided that (1) the Merger Team concurs on the new location portion, and (2) the Corps determines that the amount of new location roadway is acceptable for authorization under RGP 31. Note that "new location roadway" is not limited to the examples provided above.

If the Merger Process for a specific best-fit widening project, or a phase of a "phased" best-fit widening project, is modified to exclude Concurrence Points (CPs), or changed in any way that prevents the interagency Merger Team from concurring, non-concurring, or abstaining (for those agencies that are allowed to abstain under the Merger Memorandum of Understanding) on all CPs, RGP 31 cannot be used to authorize the best-fit widening project or phase. Note that combining CPs is acceptable in some circumstances and will not prevent a best-fit widening project or phase from being authorized under RGP 31.

The Corps will determine if RGP 31 can be used to authorize a particular best-fit widening project, as follows:

- **Best-fit widening projects that are <u>not</u> phased** this decision will not be made by the Corps until (1) the best-fit widening project completes the full Merger Process (i.e., all CPs have been completed) for road widening projects; (2) the prospective permittee completes final design for the project; (3) the prospective permittee submits a pre-construction notification (PCN) for the project to the Corps, and; (4) the Corps completes the evaluation of the PCN. If the Corps determines that the project qualifies for use of RGP 31, and once all other requirements are satisfied, the Corps will issue a verification letter for the use of RGP 31 for impacts to waters of the U.S. for the best-fit widening project.
- **Best-fit widening projects that are phased** this decision will not be made by the Corps until (1) the entire best-fit widening project completes the Merger Process, up to and including completion of CP 4A (Avoidance/Minimization); (2) the initial phase to be constructed (Phase 1) completes CPs 4B and 4C; (3) the prospective permittee completes final design for Phase 1; (4) the prospective permittee submits a PCN for the entire project to the Corps, and; (5) the Corps completes the evaluation of the PCN. If the Corps determines that the project qualifies for use of RGP 31, and once all other requirements are satisfied, the Corps will issue a verification letter for the use of RGP 31 for impacts to waters of the U.S. for the project, but the verification letter will authorize construction of Phase 1 <u>only</u>.

Authorization of impacts for Phase 2 - with the exception of (1) noted above, Phase 2 will be processed as Phase 1 was, i.e., Phase 2 completes CPs 4B and 4C, the prospective permittee completes final design for Phase 2, the prospective permittee submits a PCN to the Corps for evaluation, and the Corps completes the re-evaluation of the PCN. If the

Corps determines that the project <u>still</u> qualifies for use of RGP 31, and once all other requirements are satisfied, the Corps will issue a re-verification letter for the use of RGP 31 authorizing Phase 2 construction. If there are additional phases of a project, the same process will apply.

Phased Projects - if, after the entire project completes CP 4A, project impacts to waters of the U.S. for a particular phase increase or change to such a degree that the Corps determines that the proposed impacts of that phase would cause more than minimal individual and cumulative adverse environmental effects, RGP 31 will no longer be available for use and an Individual Permit will be required for the remainder of the project. This will apply even if impacts to waters of the U.S. for previous phases of that specific project were authorized by RGP 31.

If the Programmatic Merger Process changes while a best-fit widening project, or phase of a "phased" best-fit widening project, is in the Merger Process (e.g., if the Merger Process is updated or revised on a programmatic scale), the Merger Process for widening projects that was in place when the project review by the interagency Merger Team began (i.e., at CP 1), will remain in effect, unless the Merger Team concurs that the new programmatic process may be used. If the Merger Teams concurs that the new programmatic process may be used for a phase of a "phased" best-fit widening project, that process will be used for the remainder of the project/all phases.

While there is no impact limit under RGP 31, the Corps will require an Individual Permit if the proposed impacts (permanent and/or temporary) of a best-fit widening project, or phases of a "phased" best-fit widening project, would have more than minimal individual and cumulative adverse environmental effects. Additionally, if the Corps determines, on a case-by-case basis, that the concerns for the aquatic environment so indicate, he/she may exercise discretionary authority to override this RGP and require an Individual Permit.

## 1. Special Conditions.

a. The prospective permittee must submit a pre-construction notification (PCN) and applicable supporting information to the District Engineer and receive written verification from the Corps that the proposed work complies with this RGP prior to commencing any activity authorized by this RGP.

b. If the project <u>will not impact</u> a designated "Area of Environmental Concern" (AEC) in the twenty\* (20) counties of North Carolina covered by the North Carolina Coastal Area Management Act (CAMA) ("CAMA counties"), a consistency submission is not required. If the project <u>will impact</u> a designated AEC and meets the definition of "development", the prospective permittee must obtain the required CAMA permit. Development activities shall not commence until a copy of the approved CAMA permit is furnished to the appropriate Corps Regulatory Field Office (Wilmington Field Office – 69 Darlington Avenue, Wilmington, NC 28403 or Washington Field Office – 2407 West 5th Street, Washington, NC 27889).

## \*The 20 CAMA counties in North Carolina include Beaufort, Bertie, Brunswick, Camden,

# Carteret, Chowan, Craven, Currituck, Dare, Gates, Hertford, Hyde, New Hanover, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrrell, and Washington.

c. No work shall be authorized by this RGP within the 20\* CAMA counties without prior consultation with the National Oceanic and Atmospheric Administration's (NOAA) Habitat Conservation Division. For each activity reviewed by the Corps where it is determined that the activity may affect Essential Fish Habitat (EFH) for federally managed species, an EFH Assessment shall be prepared by the prospective permittee and forwarded to the Corps and NOAA Fisheries for review and comment prior to authorization of work.

d. Culverts and pipes. The following conditions [(1)-(8)] apply to the construction of culverts/pipes, and work on existing culverts/pipes.

Additionally, if the proposed work would affect an existing culvert/pipe (e.g., culvert/pipe extensions), the prospective permittee must include actions (in the PCN) to correct any existing deficiencies that are located:

- At the inlet and/or outlet of the existing culvert/pipe, IF these deficiencies are/were caused by the existing culvert/pipe, or
- Near the inlet or outlet of the existing culvert/pipe, IF these deficiencies are/were caused by the existing culvert/pipe.

These deficiencies may include, but are not limited to, stream over-widening, bank erosion, streambed scour, perched culvert/pipes, and inadequate water depth in culvert(s). Also note if the proposed work would address the existing deficiency or eliminate it – e.g., bank erosion on left bank, but the culvert extension will be placed in this eroded area. If the prospective permittee is unable to correct the deficiencies caused by the existing culvert/pipe, they must document the reasons in the PCN for Corps consideration.

(1) No activity may result in substantial, permanent disruption of the movement of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area. Measures will be included that will promote the safe passage of fish and other aquatic organisms.

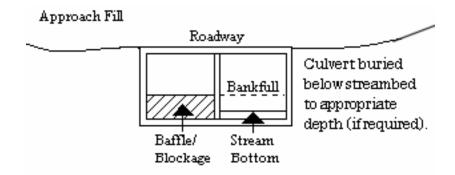
(2) The dimension, pattern, and profile of the stream above and below a culvert/pipe shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. It is acceptable to use rock vanes at culvert/pipe outlets to ensure, enhance, or maintain aquatic passage. Pre-formed scour holes are acceptable when designed for velocity reduction. The width, height, and gradient of a proposed opening shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow will be determined from gauge data, if available. In the absence of such data, bankfull flow will be used as a comparable level.

(3) Burial/depth specifications: If the project is located within any of the 20\* CAMA counties, culvert/pipe inverts will be buried at least one foot below normal bed elevation when they are placed within the Public Trust AEC and/or the Estuarine Waters AEC as designated by CAMA. If the project is located outside of the 20\* CAMA counties, culvert/pipe inverts will be buried at least one foot below the bed of the stream for culverts/pipes that are greater than 48 inches in diameter. Culverts/pipes that are 48 inches in diameter or less shall be buried or placed on the stream bed as practicable and appropriate to maintain aquatic passage, to include passage during drought or low flow conditions. Every effort shall be made to maintain the existing channel slope. A waiver from the burial/depth specifications in this condition may be requested in writing. The prospective permittee is encouraged to request agency input about waiver requests as early as possible, and prior to submitting the PCN for a specific project; this will allow the agencies time to conduct a site visit, if necessary, and will prevent time delays and potential project revisions for the prospective permittee. The waiver will only be issued by the Corps if it can be demonstrated that the impacts of complying with burial requirements would result in more adverse impacts to the aquatic environment.

(4) Appropriate actions to prevent destabilization of the channel and head cutting upstream shall be incorporated in the design and placement of culverts/pipes.

(5) Culverts/pipes placed within riparian and/or riverine wetlands must be installed in a manner that does not restrict the flow and circulation patterns of waters of the U.S. Culverts/pipes placed across wetland fills purely for the purposes of equalizing surface water do not have to be buried, but must be of adequate size and/or number to ensure unrestricted transmission of water.

(6) Bankfull flows (or less) shall be accommodated through maintenance of the existing bankfull channel cross sectional area in no more than one culvert/pipe or culvert/pipe barrel. Additional culverts/pipes or barrels at such crossings shall be allowed only to receive flows exceeding the bankfull flow. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if it can be demonstrated that it is not practicable to comply with this condition.



(7) Where adjacent floodplain is available, flows exceeding bankfull will be accommodated by installing culverts/pipes at the floodplain elevation. When multiple culverts/pipes are used, baseflow must be maintained at the appropriate width and depth by the construction of floodplain benches, sills, and/or construction methods to ensure that the overflow culvert(s)/pipe(s) is elevated above the baseflow culvert(s)/pipe(s).

(8) The width of the baseflow culvert/pipe shall be comparable to the width of the bankfull width of the stream channel. If the width of the baseflow culvert/pipe is wider than the stream channel, the culvert/pipe shall include baffles, benches and/or sills to maintain the width of the stream channel. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if it can be demonstrated that it is not practicable or necessary to include baffles, benches or sills.

See the remaining special conditions for additional information about culverts/pipes in specific areas.

e. Discharges into 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 during the period between February 15th and June 30th, without prior written approval from the Corps and the appropriate wildlife agencies (NCDMF, NCWRC, and/or the National Marine Fisheries Service (NMFS)). Discharges into waters of the U.S. designated by NCWRC as primary nursery areas in inland waters are prohibited during the period between February 15th and September 30th, without prior written approval from the Corps and the appropriate wildlife agencies by NCDMF as primary nursery areas shall be coordinated with NCDMF prior to being authorized by this RGP. Coordination with NCDMF may result in a required construction moratorium during periods of significant biological productivity or critical life stages.

The prospective permittee should contact:

NC Division of Marine Fisheries	North Carolina Wildlife Resources Commission
3441 Arendell Street	Habitat Conservation Division
Morehead City, NC 28557	1721 Mail Service Center
<b>Telephone 252-726-7021</b>	Raleigh, NC 27699-1721
or 800-682-2632	Telephone (919) 707-0220

f. This permit does not authorize the use of culverts in areas designated as anadromous fish spawning areas by the NCDMF or the NCWRC.

g. No in-water work shall be conducted in waters of the U.S. designated as Atlantic sturgeon critical habitat during the periods between February 1st and 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 during the periods between February 1st and June 30th, and between August 1st to October 31st, without prior written approval from NMFS.

h. Before discharging dredged or fill material into waters of the U.S. in designated trout watersheds in North Carolina, the PCN will be sent to the NCWRC and the Corps concurrently. See https://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Trout.aspx for the designated trout watersheds. The PCN shall summarize alternatives to conducting work in waters of the U.S. in trout watersheds that were considered during the planning process and detail why alternatives were or were not selected. For proposals where (1) a bridge in a trout stream will be replaced with a culvert, or (2) a culvert will be placed in a trout stream, the PCN must also include a compensatory mitigation plan for all loss of stream bed, and details of any on-site evaluations that were conducted to determine that installation of a culvert will not adversely affect passage of fish or other aquatic biota at the project site. The evaluation information must include factors such as the proposed slope of the culvert and determinations of how the slope will be expected to allow or impede passage, the necessity of baffles and/or sills to ensure passage, design considerations to ensure that expected baseflow will be maintained for passage and that post-construction velocities will not prevent passage, site conditions that will or will not allow proper burial of the culvert, existing structures (e.g., perched culverts, waterfalls, etc.) and/or stream patterns up and downstream of the culvert site that could affect passage and bank stability, and any other considerations regarding passage. The level of detail for this information shall be based on site conditions (i.e., culverts on a slope over 3% will most likely require more information than culverts on a slope that is less than 1%, etc.). Also, in order to evaluate potential impacts, the prospective permittee will describe bedforms that will be impacted by the proposed culvert – e.g., pools, glides, riffles, etc. The NCWRC will respond to both the prospective permittee and the Corps.

i. For all activities authorized by this RGP that involve the use of riprap material for bank stabilization, the following measures shall be applied:

(1) Where bank stabilization is conducted as part of an activity, natural design, bioengineering, and/or geoengineering methods that incorporate natural durable materials, native seed mixes, and native plants and shrubs are to be utilized, as appropriate to site conditions, to the maximum extent practicable.

(2) Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters; however, the prospective permittee may request a waiver from this requirement. The waiver request must be in writing. The Corps will only issue a waiver if the prospective permittee demonstrates that the impacts of complying with this requirement would result in greater adverse impacts to the aquatic environment. Note that filter fabric is not required if the riprap will be pushed or "keyed" into the bank of the waterbody.

(3) The placement of riprap shall be limited to the areas depicted on submitted work plan drawings.

(4) Riprap shall not be placed in a manner that prevents or impedes fish passage.

(5) Riprap shall be clean and free from loose dirt or any pollutant except in trace quantities that will not have an adverse environmental effect.

(6) Riprap shall be of a size sufficient to prevent its movement from the authorized alignment by natural forces under normal conditions.

(7) Riprap material shall consist of clean rock or masonry material such as, but not limited to, granite, marl, or broken concrete.

j. Discharges of dredged or fill material into waters of the U.S., including wetlands, must be minimized or avoided to the maximum extent practicable.

k. Generally, off-site detours are preferred to avoid and minimize impacts to the human and natural environment; however, if an off-site detour is considered impracticable, then an onsite detour may be considered as a necessary component of the actions authorized by this RGP. Impacts from the detour may be considered temporary and may not require compensatory mitigation if the impacted area is restored to pre-construction elevations and contours after construction is complete. The permittee shall also restore natural hydrology and stream corridors (if applicable) and reestablish native vegetation/riparian corridors. If the construction of a detour (on-site or off-site) includes standard undercutting methods, removal of all material and backfilling with suitable material is required. See special condition "s" for additional information.

1. All activities authorized by this RGP shall, to the maximum extent practicable, be conducted "in the dry", with barriers installed between work areas and aquatic habitat to protect that habitat from sediment, concrete, and other pollutants. Where concrete is utilized, measures will be taken to prevent live or fresh concrete, including bags of uncured concrete, from coming into contact with waters of the U.S. until the concrete has set and cured. All water in the work area that has been in contact with concrete shall only be returned to waters of the U.S. when it no longer poses a threat to aquatic organisms (concrete is set and cured).

m. In cases where new alignment approaches are to be constructed and the existing approach fill in waters of the U.S. is to be abandoned and no longer maintained as a roadway, the abandoned fill shall be removed and the area will be restored to pre-construction elevations and contours. The permittee shall also restore natural hydrology and stream corridors (if applicable), and reestablish native vegetation/riparian corridors, to the extent practicable. This activity may qualify as compensatory mitigation credit for the project and will be assessed on a case-by-case basis in accordance with Special Conditions "q" and "r" in this document. Any proposed on-site wetland restoration area must be void of utility conflicts and/or utility maintenance areas. A restoration plan detailing this activity will be required with the submittal of the PCN.

n. 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 and storm water management activities, 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).

o. The project must be implemented and/or conducted so that all reasonable and practicable measures to ensure that equipment, structures, fill pads, and work associated with the project do not adversely affect upstream and/or downstream reaches. Adverse effects include, but are not limited to, channel instability, scour, flooding, and/or shoreline/streambank erosion. During construction, the permittee shall routinely monitor for these effects, cease all work if/when detected, take initial corrective measures to correct actively eroding areas, and notify the Corps immediately. Permanent corrective measures may require additional authorization from the Corps.

p. All PCNs will describe sedimentation and erosion control structures and measures proposed for placement in waters of the U.S. To the maximum extent practicable, structures and measures will be depicted on maps, surveys or drawings showing location and impacts to jurisdictional wetlands and streams. In addition, appropriate soil and erosion control measures must be established and maintained during construction. All fills, temporary and permanent, must be adequately stabilized at the earliest practicable date to prevent erosion of fill material into adjacent waters or wetlands.

q. Compensatory mitigation will be required for permanent impacts resulting in a loss of waters of the U.S. due to culvert/pipe installation and other similar activities. Mitigation may be required for stream relocation projects (see Special Condition "r" below). When compensatory mitigation is required, the prospective permittee will attach a proposed mitigation plan to the PCN. Compensatory mitigation proposals will be written in accordance with currently approved Wilmington District guidance and Corps mitigation regulations, unless the purchase of mitigation credits from an approved mitigation bank or the North Carolina Division of Mitigation Services (NCDMS) is proposed to address all compensatory mitigation requirements. The Corps Project Manager will make the final determination concerning the appropriate amount and type of mitigation.

r. Stream Relocations (non-tidal only) - for the purposes of permitting, stream relocations are considered a loss of waters of the U.S. Depending on the condition and location of (1) the existing stream, and (2) the relocated channel, stream relocation(s) may provide a functional uplift. The Corps will determine if an uplift is possible based on the information submitted with the PCN. If the anticipated uplift(s) occurs, it may offset, either partially or fully, the loss associated with a stream relocation(s) - (i.e., due to the uplift, either no compensatory mitigation would be required for the stream relocation itself, or compensatory mitigation would be required at a reduced ratio).

Because the amount of potential uplift is dependent upon the condition (or quality) of the channel to be relocated, there is no pre-determined amount of uplift needed to satisfy the requirements for a successful relocation project. After performing the evaluation(s) noted in this

document, the prospective permittee will propose a certain amount of uplift potential and the Corps project manager will make the final determination. Baseline conditions and subsequent monitoring must show that the relocated channel is providing/will provide aquatic function at, or above, the level provided by the baseline (pre-project) condition. If the required uplift is not achieved, the work will not be in compliance with this special condition of RGP 31 and remediation will be required through repair (and continued monitoring), or by the permittee providing compensatory mitigation (e.g., mitigation credit through an approved bank, mitigation credit through NCDMS, etc.).

Compensatory mitigation, in addition to the stream relocation activity, may be required if the Corps determines that (a) no uplift in stream function is achievable, (b) the proposed uplift in stream function is not sufficient, by itself, (c) the risks associated with achieving potential uplifts in stream function are excessive, and/or (d) the time period for achieving the potential uplifts/functional success is too great.

On-site compensatory mitigation is not the same as stream relocation. While stream relocation simply moves a stream to a nearby, geographically similar area, it does not generate mitigation credits. If NCDOT proposes to generate compensatory mitigation on a project site, NCDOT must submit a mitigation plan that complies with 33 CFR 332.4.

The prospective permittee is required to submit the following information for any proposed project that involves stream relocation, regardless of the size/length of the stream relocation (note that 1-5 below only apply to stream relocations and <u>not</u> to compensatory mitigation):

\*

- (1) A statement detailing why relocating the stream is unavoidable. In order to ensure that this action is separate from a compensatory mitigation project, the need for the fill must be related to road/interchange/intersection construction or improvement, and the project must meet the requirements set forth in the full description/terms on pages 1-3 of this permit.
- (2) An evaluation of effects on the relocated stream and buffer from utilities, or potential for impact from utility placement in the future.
- (3) An evaluation of the baseline condition of the stream to be relocated. In order to demonstrate a potential uplift, the prospective permittee must provide the baseline (pre-impact) condition of the stream that is proposed for relocation. The prospective permittee will document the baseline condition of the stream by using the Corps' (Wilmington District's) current functional assessment method e.g., the North Carolina Stream Assessment Method (NCSAM). The functional assessment must be used to identify specific areas where an uplift would reasonably be expected to occur, and also show important baseline functions that will remain after the relocation.

- (4) An evaluation of the potential uplifts to stream function for the relocated channel. The amount of detail required in the plan will be commensurate with the functional capacity of the original stream and proposed uplift(s). Low functional capacity will warrant less monitoring and less detail in the plan in order to ensure that the relocated channel provides the same, or better/increased, suite of aquatic functions as the existing channel.
- (5) A proposed monitoring plan for the relocated channel (and buffer, if applicable), will be prepared in accordance with current District guidance. The level of detail needed in the plan will be directly related to the quality of baseline functions and the anticipated uplift, therefore it is recommended that a pre-application discussion occur with the Corps Project Manager as early as possible. For example, if the risk for achieving the anticipated functional uplift is moderate or low, or if there is a low amount of proposed uplift, less information and monitoring will be required in the proposed relocation plan; similar to the requirements found in the "2003 Stream Mitigation Guidelines". If the risk for uplift is higher, or if there is a high amount of proposed uplift, additional monitoring and information will be required, trending toward the prescriptions found in the most recent Wilmington District Compensatory Mitigation Guidance – e.g., the 2016 Wilmington District Stream and Wetland Compensatory Mitigation Update. All monitoring will be for at least 5 years unless the Corps project manager determines that (a) a specific project requires less than 5 years due to site conditions or limited risk/uplift potential, and/or complexity (or simplicity) of the existing channel and/or the relocation work, or (b) the Corps project manager determines (during the monitoring period) that the 5 years of monitoring may be reduced (or that no further monitoring is required) based on monitoring information received once the stream relocation has been completed.

s. Upon completion of any work authorized by this RGP, all temporary fills (to include culverts, pipes, causeways, etc.) will be completely removed from waters of the U.S. and the areas will be restored to pre-construction elevations and contours. The permittee shall also restore natural hydrology and stream corridors (if applicable), and reestablish native vegetation/riparian corridors. This work will be completed within 60 days of completion of project construction. If this timeframe occurs while a required moratorium of this permit is in effect, the temporary fill shall be removed in its entirety within 60 days of the moratorium end date. If vegetation cannot be planted due to the time of the year, all disturbed areas will be seeded with a native mix appropriate for the impacted area, and vegetation will be planted during the next appropriate time frame. A native seed mix may contain non-invasive small grain annuals (e.g. millet and rye grain) to ensure adequate cover while native vegetation becomes established. The PCN must include a restoration plan showing how all temporary fills and structures will be removed and how the area will be restored to pre-project elevations and contours.

t. Once the authorized work in waters of the U.S. is complete, the permittee shall sign and return the compliance certificate that is attached to the RGP verification letter.

u. The District Engineer will consider any comments from Federal and/or State agencies concerning the proposed activity's compliance with the terms and conditions of this RGP.

v. The Corps may place additional special conditions, limitations, or restrictions on any verification of the use of RGP 31 on a project-by-project basis.

2. General Conditions.

a. Except as authorized by this RGP or any Corps approved modification to this RGP, no excavation, fill or mechanized land-clearing activities shall take place within waters or wetlands, at any time during construction or maintenance of the project. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities connected with the project.

b. Authorization under this RGP does not obviate the need to obtain other federal, state, or local authorizations.

c. All work authorized by this RGP must comply with the terms and conditions of the applicable CWA Section 401 Water Quality Certification for this RGP issued by the North Carolina Division of Water Resources (NCDWR).

d. The permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside of the permit area. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).

e. The activities authorized by this RGP must not interfere with the public's right to free navigation on all navigable waters of the U.S. No attempt will be made by the permittee to prevent the full and free use by the public of all navigable waters at, or adjacent to, the authorized work for a reason other than safety.

f. The permittee understands and agrees that if future operations by the U.S. 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, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

g. The permittee, upon receipt of a notice of revocation of this RGP for the verified individual activity, may apply for an individual permit, or will, without expense to the U.S. and in such time and manner as the Secretary of the Army or his/her authorized representative may direct, restore the affected water of the U.S. to its former conditions.

h. This RGP does not authorize any activity that would conflict with a federal project's congressionally authorized purposes, established limitations or restrictions, or limit an agency's ability to conduct necessary operation and maintenance functions. Per Section 14 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. 408), no project that has the potential to take possession of or make use of for any purpose, or build upon, alter, deface, destroy, move, injure, or obstruct a federally constructed work or project, including, but not limited to, levees, dams, jetties, navigation channels, borrow areas, dredged material disposal sites, flood control projects, etc., shall be permitted unless the project has been reviewed and approved by the appropriate Corps approval authority. Permittees shall not begin the activity authorized by this RGP until notified by the Corps that the activity may proceed.

i. The permittee shall obtain a Consent to Cross Government Easement from the appropriate Corps District's Land Use Coordinator prior to any crossing of a Corps easement and/or prior to commencing construction of any structures, authorized dredging, or other work within the right-of-way of, or in proximity to, a federally designated disposal area.

j. The permittee will allow the Wilmington District Engineer or his/her representative to inspect the authorized activity at any time deemed necessary to ensure that the activity is being performed or maintained in strict accordance with the Special and General Conditions of this permit.

k. This RGP does not grant any property rights or exclusive privileges.

1. This RGP does not authorize any injury to the property or rights of others.

m. This RGP does not authorize the interference with any existing or proposed federal project.

n. In issuing this permit, the Federal Government does not assume any liability for the following:

(1) Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

(2) Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the U.S. in the public interest.

(3) Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

(4) Design or construction deficiencies associated with the permitted work.

(5) Damage claims associated with any future modification, suspension, or revocation of this permit.

o. Authorization provided by this RGP may be modified, suspended or revoked in whole, or in part, if the Wilmington District Engineer, acting for the Secretary of the Army, determines that such action would be in the best public interest. The term of this RGP shall be five (5) years unless subject to modification, suspension, or revocation. Any modification, suspension, or revocation of this authorization will not be the basis for any claim for damages against the U.S. Government.

p. No activity may occur in a component of the National Wild and Scenic Rivers 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 designation or study status. 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, etc.).

### q. Endangered Species.

(1) No activity is authorized under this RGP 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 this RGP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(2) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal prospective permittees (and when FHWA is the lead federal agency) must provide the District Engineer with the appropriate documentation to demonstrate compliance with those requirements. The District Engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the RGP activity, or whether additional ESA consultation is necessary.

(3) Non-federal prospective permittees - for activities that might affect federallylisted endangered or threatened species or designated critical habitat, the PCN must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The District Engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat. In cases where the non-federal prospective permittee has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the prospective permittee shall not begin work until the Corps has provided notification that the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(4) As a result of formal or informal consultation with the U.S. Fish and Wildlife Service (USFWS) or NMFS, the District Engineer may add species-specific endangered species conditions to the RGP verification letter for a project.

(5) Authorization of an activity by a RGP 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 USFWS or the NMFS, the ESA prohibits any person subject to the jurisdiction of the U.S. 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.

(6) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS in North Carolina at the addresses provided below, or from the USFWS and NMFS via their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac\_and http://www.noaa.gov/fisheries.html respectively.

USFWS offices in North Carolina:

The Asheville USFWS Office covers all NC counties west of, and including, Anson, Stanly, Davidson, Forsyth and Stokes Counties.

US Fish and Wildlife Service Asheville Field Office 160 Zillicoa Street Asheville, NC 28801 Telephone: (828) 258-3939

The Raleigh USFWS Office covers all NC counties east of, and including, Richmond, Montgomery, Randolph, Guilford, and Rockingham Counties.

US Fish and Wildlife Service Raleigh Field Office Post Office Box 33726 Raleigh, NC 27636-3726 Telephone: (919) 856-4520

r. The Wilmington District, USFWS, NCDOT, and the FHWA have conducted programmatic Section 7(a)(2) consultation for a number of federally listed species and habitat, and programmatic consultation concerning other federally listed species and/or habitat 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 RGP 31 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 RGP 31. 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 RGP 31. If the terms and conditions of a specific PBO (or PBOs) apply to a project, the Corps will include this/these requirements in any RGP 31 verification that may be issued for a project. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its PBO, and with the ESA.

s. Northern long-eared bat (NLEB) (Myotis septentrionalis). Standard Local Operating Procedures for Endangered Species (SLOPES) for the NLEB have been approved by the Corps and the U.S. Fish and Wildlife Service. See http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/ESA/. This SLOPES details how the Corps will make determinations of effect to the NLEB when the Corps is the lead federal agency for an NCDOT project that is located in the western 41 counties of North Carolina. This SLOPES does not address NCDOT projects (either federal or state funded) in the eastern 59 counties of North Carolina. Note that if another federal agency is the lead federal agency for a project in the western 41 counties, procedures for satisfying the requirements of Section 7(a)(2) of the ESA will be dictated by that agency and will not be applicable for consideration under the SLOPES; however, information that demonstrates the lead federal agency's (if other than the Corps) compliance with Section 7(a)(2) / 4(d) Rule for the NLEB, will be required in the PCN. Note that at the time of issuance of RGP 31, the federal listing status of the NLEB as "Threatened" is being litigated at the National level. If, as a result of litigation, the NLEB is federally listed as "Endangered", this general condition ("s") will no longer be applicable because the 4(d) Rule, and this NLEB SLOPES, will no longer apply/be valid.

t. For proposed activities the sixteen (16) counties listed below, prospective permittees must provide a copy of the PCN to the USFWS, 160 Zillicoa Street, Asheville, North Carolina 28801. This PCN must be sent concurrently to the USFWS and the Corps Project Manager for that specific county.

The 16 counties with tributaries that drain to designated critical habitat that require notification to the Asheville USFWS are: Avery, Cherokee, Forsyth, Graham, Haywood, Henderson, Jackson, Macon Mecklenburg, Mitchell, Stokes, Surry, Swain, Transylvania, Union and Yancey.

u. If the permittee discovers or observes any live, damaged, injured or dead individual of an endangered or threatened species during construction, the permittee shall immediately notify the Wilmington District Engineer so that required coordination can be initiated with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service.

## v. Historic Properties.

(1) In cases where the District Engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places (NRHP), the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(2) Federal prospective permittees (or when FHWA is the lead federal agency) should follow their own procedures for complying with the requirements of Section 106 of the NHPA. Federal prospective permittees must provide the District Engineer with the appropriate documentation to demonstrate compliance with those requirements; this includes copies of correspondence sent to all interested, federally recognized tribes and a summary statement about tribal consultation efforts or, if the Corps enters into a Programmatic Agreement (PA) with the FHWA/NCDOT, documentation that the FHWA/NCDOT has complied with PA requirements. The District Engineer will review the documentation and determine whether it is sufficient to address Section 106 compliance for this RGP activity, or whether additional Section 106 consultation is necessary.

(3) Non-federal prospective permittees - the PCN must state which historic properties may be affected by the proposed work 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 resources can be sought from the State Historic Preservation Officer (SHPO) and/or Tribal Historic Preservation Officer (THPO), as appropriate, and the NRHP (see 33 CFR 330.4(g)). When reviewing PCNs, the District Engineer will comply with the current procedures for addressing the requirements of Section 106 of the NHPA. The District Engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the District Engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties.

(4) Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)).

(5) Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to a prospective permittee 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 will 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 prospective permittee. 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 prospective permittee, 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.

w. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this general permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

x. Permittees are advised that development activities in or near a floodway may be subject to the National Flood Insurance Program that prohibits any development, including fill, within a floodway that results in any increase in base flood elevations. This general permit does not authorize any activity prohibited by the National Flood Insurance Program.

y. The permittee must install and maintain, at his/her expense, any signal lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, on authorized facilities. For further information, the permittee should contact Coast Guard Sector North Carolina at (910) 772-2191 or email Coast Guard Fifth District at cgd5waterways@uscg.mil.

z. The permittee must maintain any structure or work authorized by this general permit in good condition and in conformance with the terms and conditions of this general permit. The permittee is not relieved of this requirement if the permittee abandons the structure or work. Transfer in fee simple of the work authorized by this general permit will automatically transfer this general permit to the property's new owner, with all of the rights and responsibilities enumerated herein. The permittee must inform any subsequent owner of all activities undertaken under the authority of this general permit and provide the subsequent owner with a copy of the terms and conditions of this general permit.

aa. At his or her sole discretion, any time during the processing cycle, the Wilmington District Engineer may determine that this general permit will not be applicable to a specific proposal. In such case, the procedures for processing an individual permit in accordance with 33 CFR 325 will be available.

bb. Except as authorized by this general permit or any Corps approved modification to this general permit, all fill material placed in waters or wetlands shall be generated from an upland source and will be clean and free of any pollutants except in trace quantities. Metal products, organic materials (including debris from land clearing activities), or unsightly debris will not be used.

cc. Except as authorized by this general permit or any Corps approved modification to this general permit, all excavated material will be disposed of in approved upland disposal areas.

dd. Activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon this general permit will remain authorized provided the activity is completed within twelve months of the date of the general permit's expiration, modification, or revocation. Activities completed under the authorization of this general permit that were in effect at the time the activity was completed continue to be authorized by the general permit.

ee. The permittee is responsible for obtaining any "take" permits required under the USFWS's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the USFWS to determine if such "take" permits are required for a particular activity.

ff. The activity must comply with applicable FEMA approved state or local floodplain management requirements.

gg. There will be no unreasonable interference with navigation or the right of the public to riparian access by the existence or use of activities authorized by this RGP.

hh. Unless authorization to fill those specific wetlands or mudflats has been issued by the Corps, heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

ii. This RGP will not be applicable to proposed construction when the Wilmington District Engineer determines that the proposed activity will significantly affect the quality of the human environment and determines that an EIS must be prepared.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

CLARK.ROBERT.J AMES.10189013 03 Digitally signed by CLARK.ROBERT.JAMES.1018 901303 Date: 2020.05.26 14:49:22 -04'00'

> Robert J. Clark Colonel, U. S. Army District Commander

DocuSign Envelope ID: 2297FB36-77FF-41EB-B590-C722F96084B3



ROY COOPER Governor ELIZABETH S. BISER Secretary S. DANIEL SMITH Director

NORTH CAROLINA Environmental Quality

> December 17, 2021 Martin County Beaufort County NCDWR Project No. 20211026 TIP R-2511

# **REISSUANCE of APPROVAL of 401 WATER QUALITY CERTIFICATION with ADDITIONAL CONDITIONS**

Mr. Paul Williams NCDOT Division 1 113 Airport Drive Edenton, NC 27932

Dear Mr. Williams:

You have our approval, in accordance with the conditions listed below, for the following impacts for the purpose of the widening of US 17 in Martin and Beaufort Counties:

Site	Wetland Type	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact
							(ac)
1	riparian				< 0.01	0.01	0.01
2	non-riparian	0.26	0.01		0.05		0.32
5	riparian	1.00	0.04		0.27	0.83	2.14
6	non-riparian	0.02	< 0.01		0.01		0.02
7	riparian	0.11			0.03	0.13	0.27
8	riparian	1.10		0.06	0.32	0.76	2.24
9	riparian	0.64	0.03	0.01	0.15	0.22	1.05
12	riparian		< 0.01			0.03	0.03
14	riparian	< 0.01	0.05		0.08	0.86	0.99
Total		3.14	0.14	0.07	0.91	2.84*	7.1

#### Wetland Impacts in the Roanoke and Tar-Pamlico River Basins

\* all hand clearing impacts due to utilities

#### Open Water Impacts in the Roanoke River Basin

Site	Туре	Basin	Fill (ac)		
12	Pond	Roanoke	0.50		



Site	Туре	Basin	Permanent (linear ft)	Temporary (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
1	Р	Tar-Pam	79	20	99	n/a
2	Р	Tar-Pam	351	13	364	351
3	Р	Tar-Pam	284	38	322	n/a
4	Ι	Tar-Pam	129	10	139	n/a
5	Р	Tar-Pam	7	155	162	n/a
7	Р	Roanoke	128	20	148	n/a
8	Р	Roanoke	286	9	295	n/a
9	Р	Roanoke	227	36	263	n/a
10	Ι	Roanoke	129	13	142	n/a
11	Р	Roanoke	512	42	554	512
12	Р	Roanoke	40	10	50	n/a
13	Р	Roanoke	169	20	189	n/a
Total			2,341	386	2,727	863

Stream Impacts in the Roanoke and Tar-Pamlico River Basins

n/a= stream impacts < 300 lf and/or intermittent stream, no mitigation required

#### **Tar-Pamlico Riparian Buffer Impacts**

Site	Zone 1 Impact (sq ft)	<i>minus</i> Wetlands in Zone 1 (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required (using 3:1 ratio)	Zone 2 Impact (sq ft)	<i>minus</i> Wetlands in Zone 2 (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required (using 1.5:1 ratio)
1	5529	176	5353	n/a*	4527	6	4521	n/a*
2	16327	2030	14297	42,891	10878	2688	8190	12,285
3	14972		14972	44,916	8618		8618	12,927
4	8377		8377	n/a*	5662		5662	n/a*
5	8230	8230	0	n/a**	5181	5181	0	n/a**
Total	53,435	10,436	42,999	87,807	34,866	7,875	26,991	25,212

\* = impact < 1/3 ac, mitigation not required

\*\* = impact due to bridge construction, mitigation not required

The project shall be constructed in accordance with your application dated received June 23, 2021 and additional information received November 30, 2021. After reviewing your application, we have decided that these impacts are covered by General Water Quality Certification Number 4135. This certification corresponds to the Regional General Permit Number 198200031 issued by the Corps of Engineers. In addition, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control, Non-Discharge and Water Supply Watershed regulations. This approval will expire with the accompanying 404 permit.

This approval is valid solely for the purpose and design described in your application (unless modified below). Should your project change, you must notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to streams (now or in the future) exceed 300 linear feet, compensatory mitigation may be required as



described in 15A NCAC 2H .0506 (h) (6) and (7). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 2B.0714. For this approval to remain valid, you must adhere to the conditions listed in the attached certification(s) and any additional conditions listed below.

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#### **Condition(s) of Certification:**

#### **Project Specific Conditions**

- 1. Compensatory mitigation for 863 linear feet of impact to streams is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through the North Carolina Division of Mitigation Service (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. The DMS has indicated in a letter dated June 29, 2021 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the DMS Mitigation Banking Instrument signed July 28, 2010. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
- 2. Compensatory mitigation for impacts to **4.12** acres of wetlands (3.78 ac riparian, 0.35 ac non-riparian) is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Division of Mitigation Services (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. DMS has indicated in a letter dated June 29, 2021 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed July 28, 2010.
- 3. Compensatory mitigation for impacts to 29,269 square feet of protected riparian buffers in Zone 1 shall be required at a 3:1 ratio for a total of 87,807 square feet of required Zone 1 mitigation. Compensatory mitigation for impacts to 16,808 square feet of protected riparian buffers in Zone 2 shall be required at a ratio of 1.5:1 for a total of 25,212 square feet of required Zone 2 mitigation. We understand that you have chosen to perform compensatory mitigation for impacts to protected buffers through use of the North Carolina Division of Mitigation Services (DMS) (formerly NCEEP). Mitigation for unavoidable impacts to Tar-Pamlico Buffers shall be provided in the Tar-Pamlico River Basin and done in accordance with 15A NCAC .02B .0295. The DMS has indicated in a letter dated June 29, 2021 that they will assume responsibility for satisfying the compensatory mitigation Banking Instrument signed June 14, 2016.

#### **General Conditions**

- 4. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
- \* 5. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
  - 6. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]
  - 7. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers. [15A NCAC 02H.0506(b)(2)]
  - 8. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. [15A NCAC 02H.0506(b)(3)]



9. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]

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- 10. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage. [15A NCAC 02H.0506(b)(2)]
- 11. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water. [15A NCAC 02H.0506(b)(3) and (c)(3)]
- 12. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. [15A NCAC 02B.0200]
- 13. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions. [15A NCAC 02H.0506(b)(2)]
- 14. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. [15A NCAC 02H.0506(b)(3)]
- 15. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. [15A NCAC 02H.0506(b)(2)]
- 16. 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. [15A NCAC 02H .0506{b)(3) and (c)(3) and 15A NCAC 02B .0200]
  - a. 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 *NCDOT Sediment and Erosion Control Manual*.
  - b. 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.
  - c. 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.
  - d. If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-1, WS-11, 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 Watershed*. [15A NCAC 02H.0506(b)(3) and (c)(3); GC 4135]



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

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- 18. Erosion control matting in riparian areas shall not contain a plastic or nylon mesh grid which can impinge and entrap small animals. Matting should be secured in place by staples, stakes, or wherever possible live stakes of native trees. Riparian areas are defined as a distance 25 feet from top of stream bank. [15A NCAC 02B.0201]
- 19. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, then design and placement of temporary erosion control measures shall not be conducted in a manner that may result in disequilibrium of wetlands, stream beds, or banks, adjacent to or upstream and downstream of the above structures. All sediment and erosion control devices shall be removed from wetlands and waters and the natural grade restored within two (2) months of the date that the Division of Energy, Mining and Land Resources (DEMLR) or locally delegated program has released the specific area within the project. [15A NCAC 02H.0506(b)(3) and (c)(3)]
- 20. Pursuant to 15A NCAC 2B.0734(11), temporary sediment and erosion control devices are not allowed in Zone 1 of the Tar-Pamlico riparian buffer outside of the approved project impacts. Sediment and erosion control devices shall be allowed in Zone 2 of the buffers provided that the vegetation in Zone 1 is not compromised and that discharge is released as diffuse flow. Upon completion of construction the disturbed area shall be restored to preconstruction topographic and hydrologic conditions and replanted with comparable vegetation within 2 months of when construction is completed. At the end of 5 years any restored wooded riparian buffer shall comply with the restoration criteria in Rule .0295(i) of this subchapter.
- 21. All stormwater runoff shall be directed as sheetflow through stream buffers at non-erosive velocities, unless otherwise approved by this certification. Insert buffer rule citation. [15A NCAC 2B.0734 (11)]
- 22. As a condition of this 401 Water Quality Certification, the bridge demolition and construction must be accomplished in strict compliance with the most recent version of NCDOT's Best Management Practices for Construction and Maintenance Activities. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
- 23. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) where possible before entering the stream. To meet the requirements of NCDOT's NPDES permit NCS0000250, please refer to the most recent version of the North Carolina Department of Transportation Stormwater Best Management Practices Toolbox manual for approved measures. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
- 24. All bridge construction shall be performed from the existing bridge, temporary work bridges, temporary causeways, or floating or sunken barges. If work conditions require barges, they shall be floated into position and then sunk. The barges shall not be sunk and then dragged into position. Under no circumstances should barges be dragged along the bottom of the surface water. [15A NCAC 02H .0506(b)(3)]
- 25. Bridge piles and bents shall be constructed using driven piles (hammer or vibratory) or drilled shaft construction methods. More specifically, jetting or other methods of pile driving are prohibited without prior written approval from the NCDWR first. [15A NCAC 02H.0506(b)(2)]
- 26. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. [15A NCAC 02H.0506(b)(2)]
- 27. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H.0506(b)(2)]
- 28. No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. This water shall be captured, treated, and disposed of properly. [15A NCAC 02H .0506(b)(3)]



29. A turbidity curtain will be installed in the stream if driving or drilling activities occur within the stream channel, on the stream bank, or within 5 feet of the top of bank, or during the removal of bents from an old bridge. This condition can be waived with prior approval from the NCDWR. [15A NCAC 02H .0506(b)(3)]

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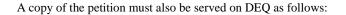
- 30. NCDOT shall be in compliance with the NCS00250 issued to the NCDOT, including the applicable requirements of the NCG01000.
- 31. Native riparian vegetation must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. [15A NCAC 02B.0506(b)(2)]
- 32. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]
- 33. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B.0200]
- 34. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B.0506(b)(2)]
- 35. The NCDOT will conduct a pre-construction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand the permit conditions and any potential issues at the permitted site. NCDWR staff shall be invited to the pre-construction meeting. [15A NCAC 02H.0506(b)(2) and (b)(3)]
- \* 36. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete the "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0502(f)]
  - 37. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission. The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings 6714 Mail Service Center Raleigh, NC 27699-6714 Telephone: (919) 431-3000, Facsimile: (919) 431-3100





Mr. Bill F. Lane, General Counsel Department of Environmental Quality 1601 Mail Service Center

This letter completes the review of the Division of Water Resources under Section 401 of the Clean Water Act. If you have any questions, please contact Garcy Ward at (252)948-3917 or garcy.ward@ncdenr.gov.

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Sincerely,

DocuSigned by: Amy Chapman

S. Darfel®Smith, Director Division of Water Resources

Electronic copy only distribution:

Kyle Barnes, US Army Corps of Engineers, Washington Field Office Garcy Ward, NC Division of Water Resources Washington Regional Office File Copy



## STATE OF NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES

## WATER QUALITY GENERAL CERTIFICATION NO. 4135

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR US ARMY CORPS OF ENGINEERS

- NATIONWIDE PERMIT NUMBER 14 (LINEAR TRANSPORTATION PROJECTS), AND
- REGIONAL GENERAL PERMIT 198200031 (NCDOT BRIDGES, WIDENING PROJECTS, INTERCHANGE IIMPROVEMENTS)

Water Quality Certification Number 4135 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) (14) of the US Army Corps of Engineers regulations and Regional General Permit 198200031.

The State of North Carolina certifies that the specified category of activity will not violate 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: December 1, 2017

Signed this day: December 1, 2017

By

for Linda Culpepper Interim Director

# Activities meeting any one (1) of the following thresholds or circumstances require <u>written</u> <u>approval</u> for a 401 Water Quality Certification from the Division of Water Resources (DWR):

- a) If any of the conditions of this Certification (listed below) cannot be met; or
- b) Any temporary or permanent impacts to wetlands, open waters and/or streams, except for construction of a driveway to a single family residential lot that is determined to not be part of a larger common plan of development, as long as the driveway involves a travel lane of less than 25 feet and total stream impacts of less than 60 feet, including any topographic/slope stabilization or in-stream stabilization needed for the crossing; or
- c) Any stream relocation or stream restoration; or
- d) Any high-density project, as defined in 15A NCAC 02H .1003(2)(a) 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<sup>1</sup> or a state-approved local government stormwater program<sup>2</sup>.

Projects that have vested rights, exemptions, or grandfathering from state or locallyimplemented stormwater programs and projects that satisfy state or locallyimplemented stormwater programs through use of community in-lieu programs **require written approval**; or

- e) 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.
- f) Any permanent impacts to waters, or to wetlands adjacent to waters, designated as Trout except for driveway projects that are below threshold (b) above provided that:
  - i. The impacts are not adjacent to any existing structures
  - ii. All conditions of this General Certification can be met, including adherence to any moratoriums as stated in Condition #10; and
  - iii. A *Notification of Work in Trout Watersheds Form* is submitted to the Division at least 60 days prior to commencement of work; or
- g) Any permanent impacts to coastal wetlands [15A NCAC 07H .0205], or Unique Wetlands (UWL); or
- h) Any impact associated with a Notice of Violation or an enforcement action for violation(s) of NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), NC Surface Water or Wetland Standards (15A NCAC 02B .0200), or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200); or

<sup>&</sup>lt;sup>1</sup> e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES

<sup>&</sup>lt;sup>2</sup> e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program

- \* i) 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" 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 or a Minor Variance is issued by a delegated or designated local government implementing a state riparian buffer program pursuant to 143-215.23

Activities included in this General Certification that do not meet one of the thresholds listed above do not require written approval.

### I. ACTIVITY SPECIFIC CONDITIONS:

- \* 1. If this Water Quality Certification is used to access residential, commercial or industrial building sites, then all parcels owned by the applicant that are part of the single and complete project authorized by this Certification must be buildable without additional impacts to streams or wetlands. If required in writing by DWR, the applicant shall provide evidence that the parcels are buildable without requiring additional impacts to wetlands, waters, or state regulated riparian buffers. [15A NCAC 02H .0506(b)(4) and (c)(4)]
  - 2. For road and driveway construction purposes, this Certification shall only be utilized from natural high ground to natural high ground. [15A NCAC 02H .0506(b)(2) and (c)(2)]
- \*3. Deed notifications or similar mechanisms shall be placed on all lots with retained jurisdictional wetlands, waters, and state regulated riparian buffers within the project boundaries in order to assure compliance with NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), and/or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200). These mechanisms shall be put in place at the time of recording of the property or individual parcels, whichever is appropriate. [15A NCAC 02H .0506(b)(4) and (c)(4)]
  - 4. For the North Carolina Department of Transportation, compliance with the NCDOT's individual NPDES permit NCS000250 shall serve to satisfy this condition. All other high-density projects that trigger threshold item (d) above shall comply with one of the following requirements: [15A NCAC 02H .0506(b)(5) and (c)(5)]

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- a. Provide a completed Stormwater Management Plan (SMP) for review and approval, including all appropriate stormwater control measure (SCM) supplemental forms and associated items, that complies with the high-density development requirements of 15A NCAC 02H .1003. Stormwater management shall be provided throughout the entire project area in accordance with 15A NCAC 02H .1003. For the purposes of 15A NCAC 02H .1003(2)(a), density thresholds shall be determined in accordance with 15A NCAC 02H .1017.
- b. Provide documentation (including calculations, photos, etc.) that the project will not cause degradation of downstream surface waters. Documentation shall include a detailed analysis of the hydrological impacts from stormwater runoff when considering the volume and velocity of stormwater runoff from the project built upon area and the size and existing condition of the receiving stream(s).

Exceptions to this condition require application to and written approval from DWR.

## **II. GENERAL CONDITIONS:**

- \*1. When written authorization is required, the plans and specifications for the project are incorporated into the authorization by reference and are an enforceable part of the Certification. Any modifications to the project require notification to DWR and may require an application submittal to DWR with the appropriate fee. [15A NCAC 02H .0501 and .0502]
  - 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) as authorized in the written approval from DWR; or beyond the thresholds established for use of this Certification without written authorization. [15A NCAC 02H .0501 and .0502]

No removal of vegetation or other impacts of any kind shall occur to state regulated riparian buffers beyond the footprint of impacts approved in a Buffer Authorization or Variance or as listed as an exempt activity in the applicable riparian buffer rules. [15A NCAC 02B .0200]

\* 3. In accordance with 15A NCAC 02H .0506(h) and Session Law 2017-10, compensatory mitigation may be required for losses of greater than 300 linear feet of perennial streams and/or greater than one (1) acre of wetlands. Impacts associated with the removal of a dam shall not require mitigation when the removal complies with the requirements of Part 3 of Article 21 in Chapter 143 of the North Carolina General Statutes. Impacts to isolated and other non-404 jurisdictional wetlands shall not be combined with 404 jurisdictional wetlands for the purpose of determining when impact thresholds trigger a mitigation requirement. For linear publicly owned and maintained transportation projects that are not determined to be part of a larger common plan of development by the US Army Corps of Engineers, compensatory mitigation may be required for losses of greater than 300 linear feet per perennial stream.

Compensatory stream and/or wetland mitigation shall be proposed and completed in compliance with G.S. 143-214.11. For applicants proposing to conduct mitigation within a project site, a complete mitigation proposal developed in accordance with the most recent guidance issued by the US Army Corps of Engineers Wilmington District shall be submitted for review and approval with the application for impacts.

- 4. All activities shall be in compliance with any applicable State Regulated Riparian Buffer Rules in Chapter 2 of Title 15A.
- 5. 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. [15A NCAC 02H .0506(b)(3) and (c)(3) and 15A NCAC 02B .0200]

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 *NCDOT 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*.

- 6. Sediment and erosion control measures shall not be placed in wetlands or waters except within the footprint of temporary or permanent impacts authorized under this Certification. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0501 and .0502]
- 7. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within wetlands. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02B .0201]

8. An NPDES Construction Stormwater Permit (NCG010000) is required for construction projects that disturb one (1) or more acres of land. The NCG010000 Permit allows stormwater to be discharged during land disturbing construction activities as stipulated in the conditions of the permit. If the project is covered by this permit, full compliance with permit conditions including the erosion & sedimentation control plan, inspections and maintenance, self-monitoring, record keeping and reporting requirements is required. [15A NCAC 02H .0506(b)(5) and (c)(5)]

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 (NCS000250) stormwater permit. [15A NCAC 02H .0506(b)(5) and (c)(5)]

- 9. 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 DOT Construction and Maintenance Activities Manual, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(3) and (c)(3)]
- 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. [15A NCAC 02H .0506 (b)(2) and 15A NCAC 04B .0125]

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. A copy of the approval from the resource agency shall be forwarded to DWR.

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.

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. [15A NCAC 02H .0506(b)(2) and (c)(2)]

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 multiple pipes or barrels are required, they shall be designed to mimic the existing stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel shall be avoided.

When topographic constraints indicate culvert slopes of greater than 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, etc.). Notification, including supporting documentation to include a location map of the culvert, culvert profile drawings, and slope calculations, shall be provided to DWR 60 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 60 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.

If other site-specific topographic constraints preclude the ability to bury the culverts as described above and/or it can be demonstrated that burying the culvert would result in destabilization of the channel, then exceptions to this condition require application to and written approval from DWR.

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.

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. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(5)]

- 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. [15A NCAC 02B .0200 and 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. [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. For projects that receive written approval, no temporary impacts are allowed beyond those included in the application and authorization. All temporarily impacted sites shall be restored and stabilized with native vegetation. [15A NCAC 02H .0506(b)(2) and (c)(2)]
- 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 Certification. [15A NCAC 02H .0506(b)(2) and (c)(2)]
- 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 stream elevation and streambank contours are restored and maintained. 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 in a manner that precludes aquatic life passage. [15A NCAC 02H .0506(b)(2)]
- 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. [15A NCAC 02H .0506(b)(2)]
- 19. Applications for 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.

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- 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. [15A NCAC 02H .0506(b)(3) and (c)(3) and 15A NCAC 02B .0211 (12)]
- 21. Heavy equipment working in wetlands shall be placed on mats or other measures shall be taken to minimize soil disturbance. [15A NCAC 02H .0506(b)(3) and (c)(3)]
- 22. In accordance with 143-215.85(b), the applicant 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.
- \* 23. If an environmental document is required under the State Environmental Policy Act (SEPA), then this General Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse. If an environmental document is required under the National Environmental Policy Act (NEPA), then this General Certification is not valid until a Categorical Exclusion, the Final Environmental Assessment, or Final Environmental Impact Statement is published by the lead agency. [15A NCAC 01C .0107(a)]
  - 24. This General Certification does not relieve the applicant 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.
  - 25. The applicant 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. If DWR determines that such standards or laws are not being met, including failure to sustain a designated or achieved use, or that State or Federal law is being violated, or that further conditions are necessary to assure compliance, then DWR may revoke or modify a written authorization associated with this General Water Quality Certification. [15A NCAC 02H .0507(d)]
  - 26. 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 Certification. A copy of this Certification, including all conditions shall be available at the project site during the construction and maintenance of this project. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

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- \* 27. When written authorization is required for use of this Certification, upon completion of all permitted impacts included within the approval and any subsequent modifications, the applicant shall be required to return a certificate of completion (available on the DWR website <u>https://edocs.deg.nc.gov/Forms/Certificate-of-Completion</u>). [15A NCAC 02H .0502(f)]
  - 28. Additional site-specific conditions, including monitoring and/or modeling requirements, may be added to the written approval letter for projects proposed under this Water Quality Certification in order to ensure compliance with all applicable water quality and effluent standards. [15A NCAC 02H .0507(c)]
  - 29. If the property or project is sold or transferred, the new permittee shall be given a copy of this Certification (and written authorization if applicable) and is responsible for complying with all conditions. [15A NCAC 02H .0501 and .0502]

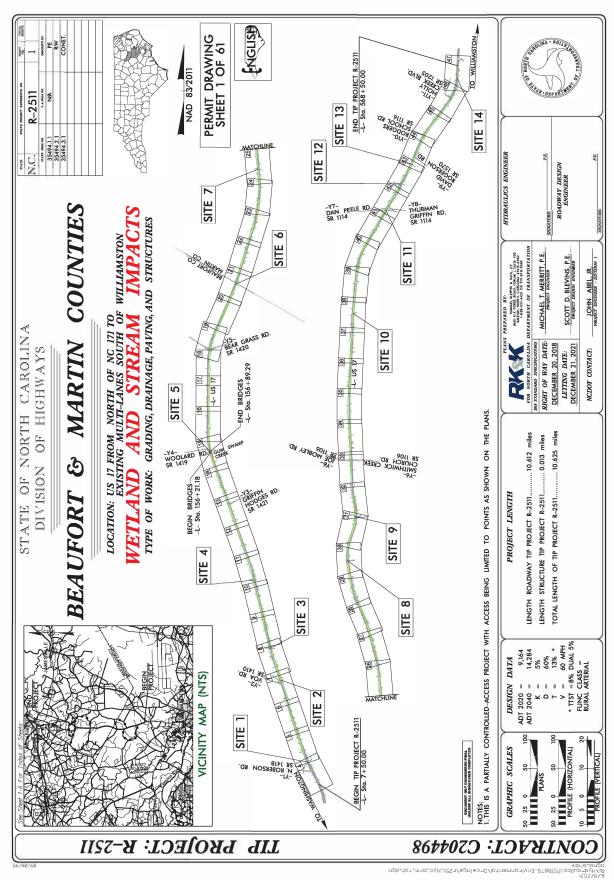
## III. GENERAL CERTIFICATION ADMINISTRATION:

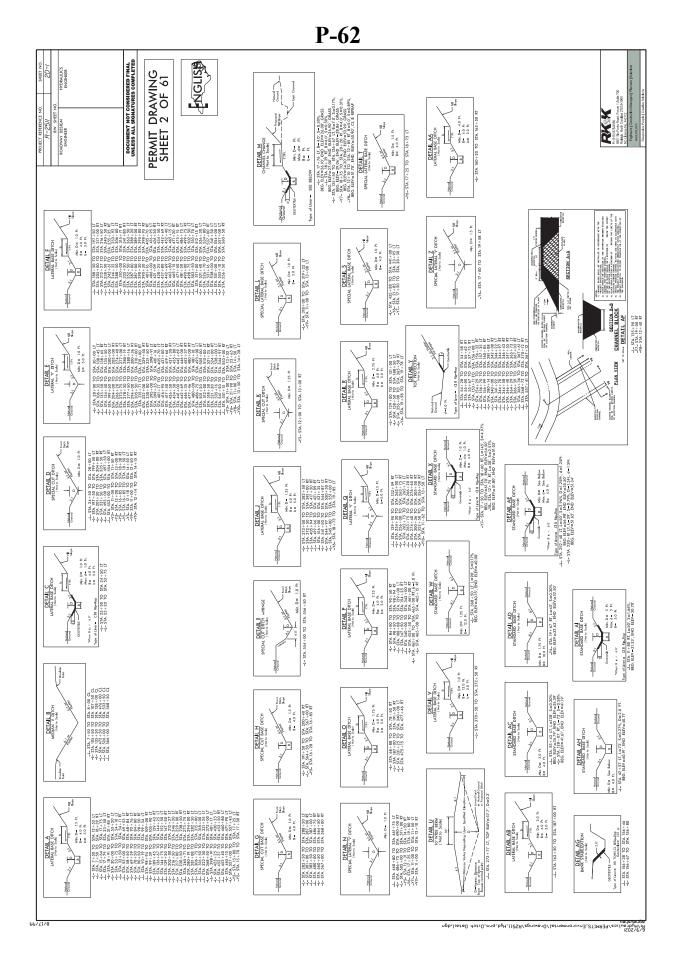
- \* 1. In accordance with North Carolina General Statute 143-215.3D(e), written approval for a 401 Water Quality General Certification must include the appropriate fee. An applicant for a CAMA permit under Article 7 of Chapter 113A of the General Statutes for which a Water Quality Certification is required shall only make one payment to satisfy both agencies; the fee shall be as established by the Secretary in accordance with 143-215.3D(e)(7).
  - 2. This Certification neither grants nor affirms any property right, license, or privilege in any waters, or any right of use in any waters. This Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and this Certification does not create any prescriptive right or any right of priority regarding any usage of water. This 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 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.
  - 3. This Certification grants permission to the Director, an authorized representative of the Director, or DWR staff, upon the presentation of proper credentials, to enter the property during normal business hours. [15A NCAC 02H .0502(e)]
  - 4. This General Certification shall expire on the same day as the expiration date of the corresponding Nationwide Permit and/or Regional General 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 Certification. This General Certification is rescinded when the US Army Corps of Engineers reauthorizes any of the corresponding Nationwide Permits and/or Regional General Permits or when deemed appropriate by the Director of the Division of Water Resources.

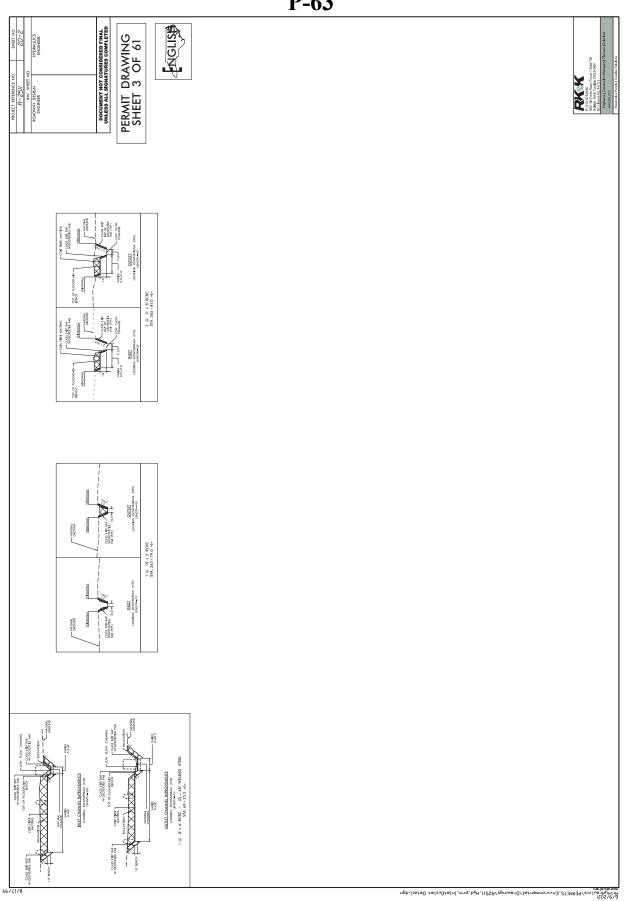
## GC4135

- 5. 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.
- \* 6. The Director of the North Carolina Division of Water Resources may require submission of a formal application for Individual Certification for any project in this category of activity 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 degrade the waters so that existing uses of the water or downstream waters are precluded.

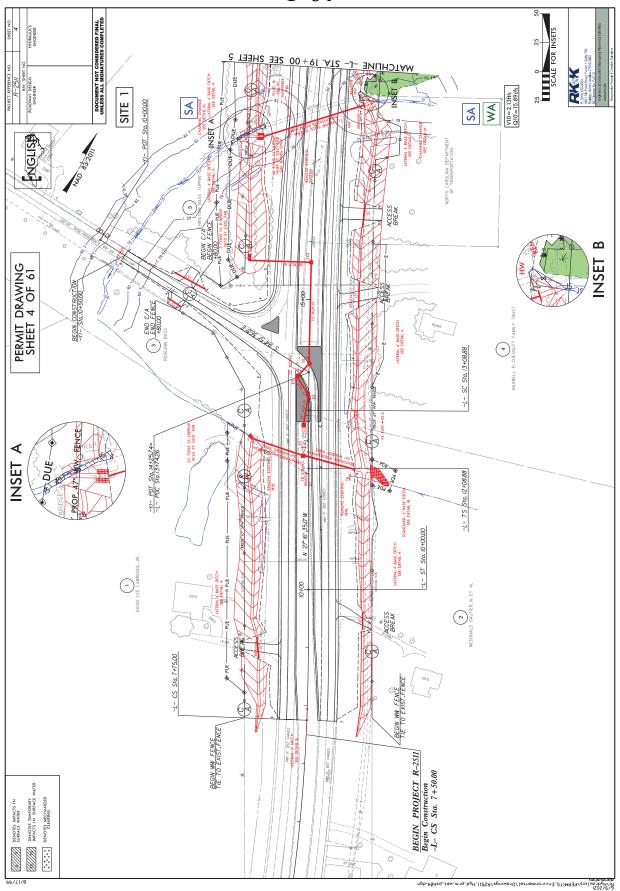
History Note: Water Quality Certification (WQC) Number 4135 issued December 1, 2017 replaces WQC Number 4088 issued March 3, 2017; WQC 3886 issued March 12, 2012; WQC Number 3820 issued April 6, 2010; WQC Number 3627 issued March 2007; WQC Number 3404 issued March 2003; WQC Number 3375 issued March 18, 2002; WQC Number 3289 issued June 1, 2000; WQC Number 3103 issued February 11, 1997; WQC Number 2732 issued May 1, 1992; WQC Number 2666 issued January 21, 1992; WQC Number 2177 issued November 5, 1987.





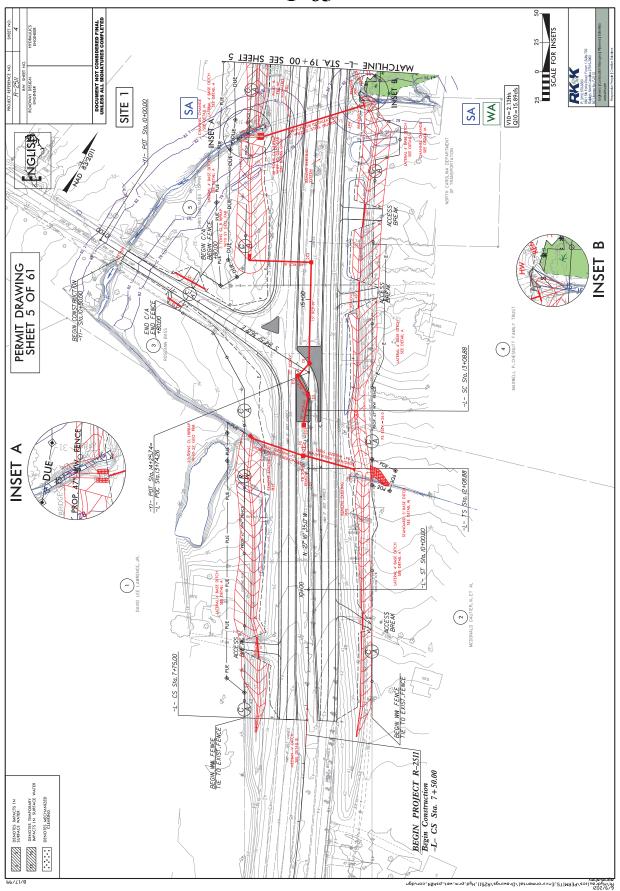


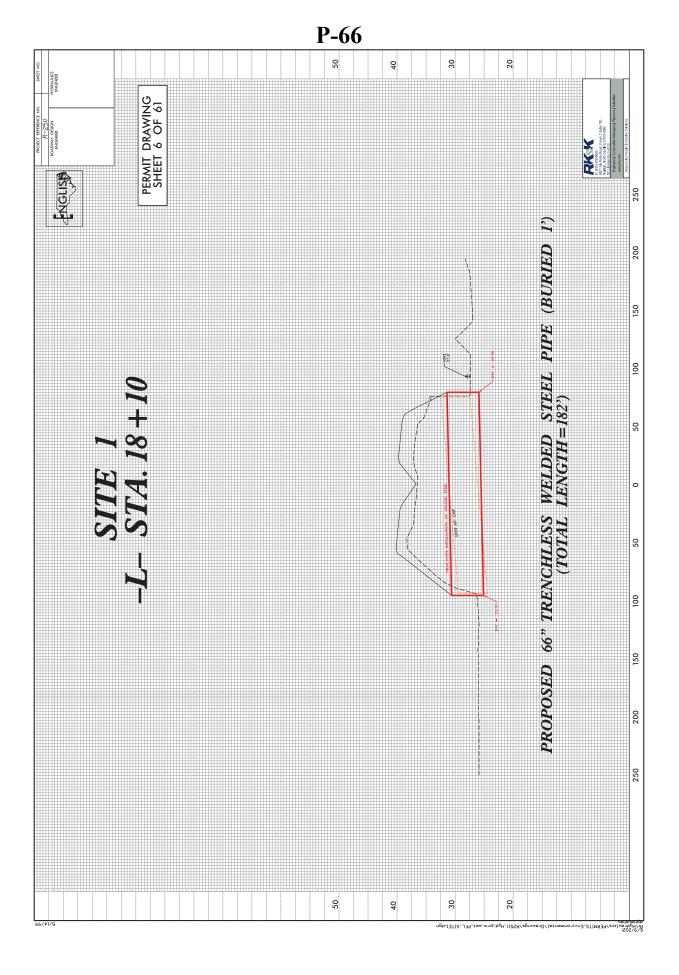
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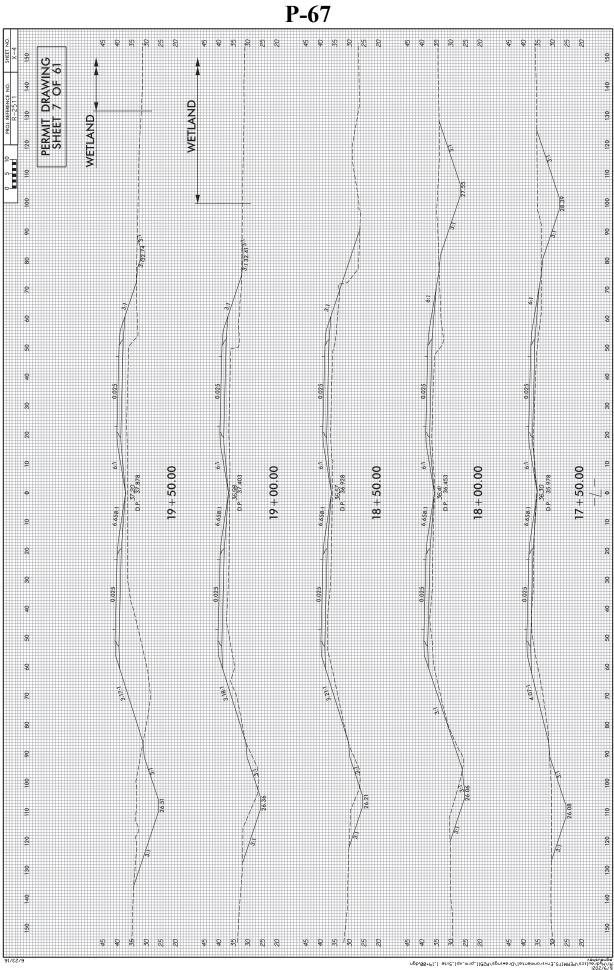


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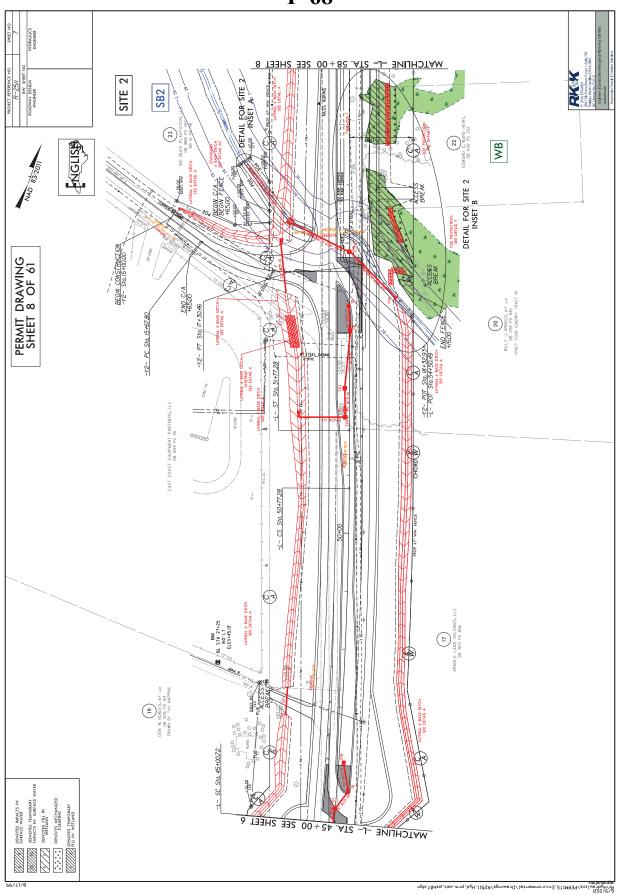


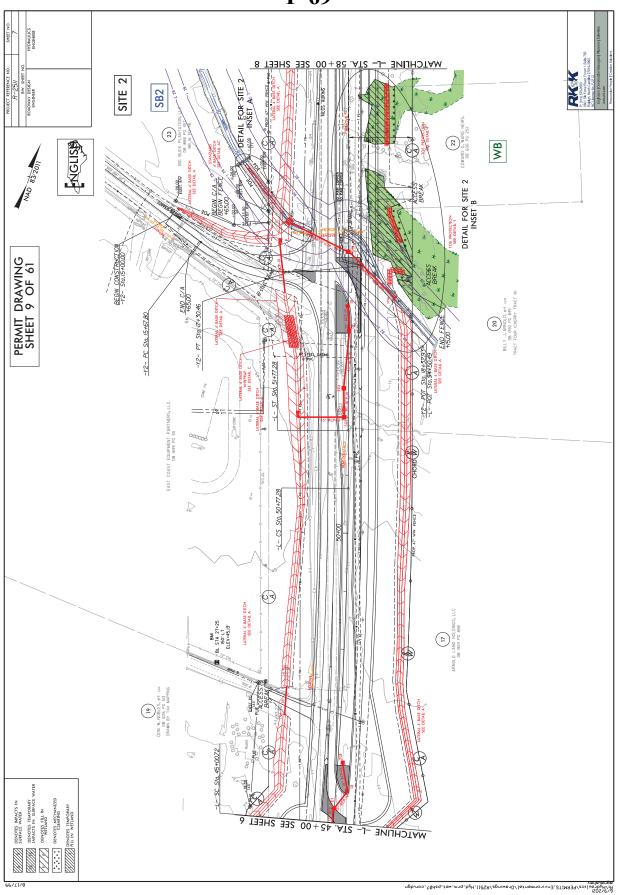


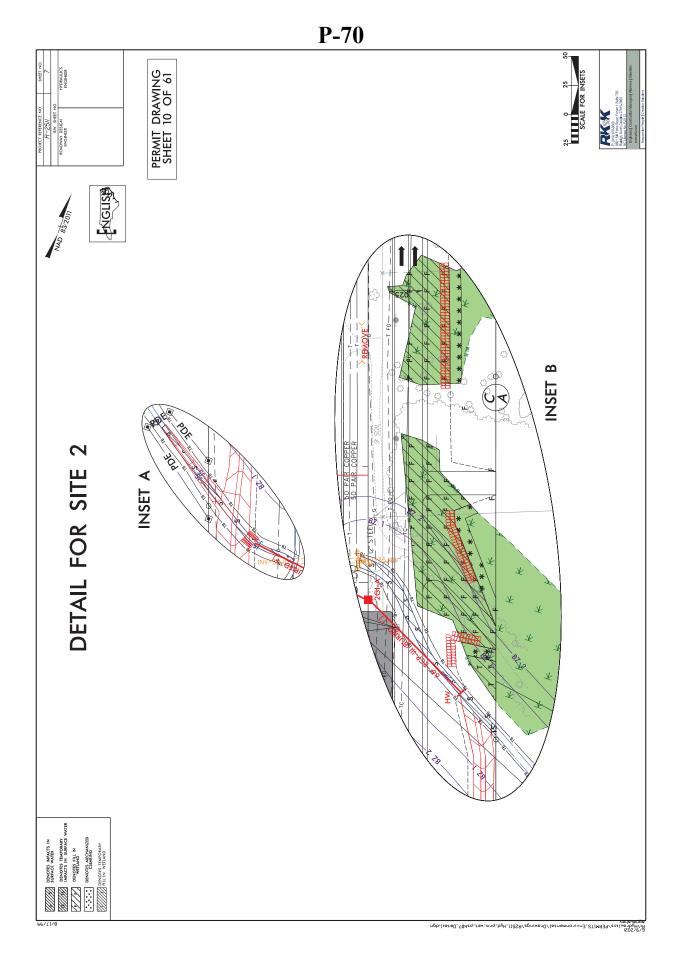


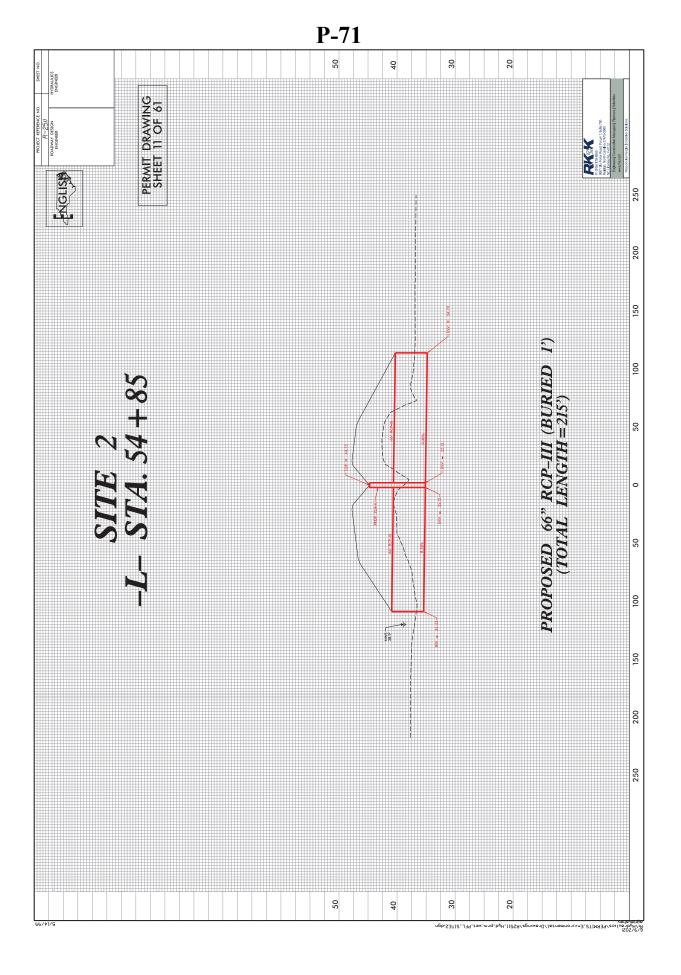
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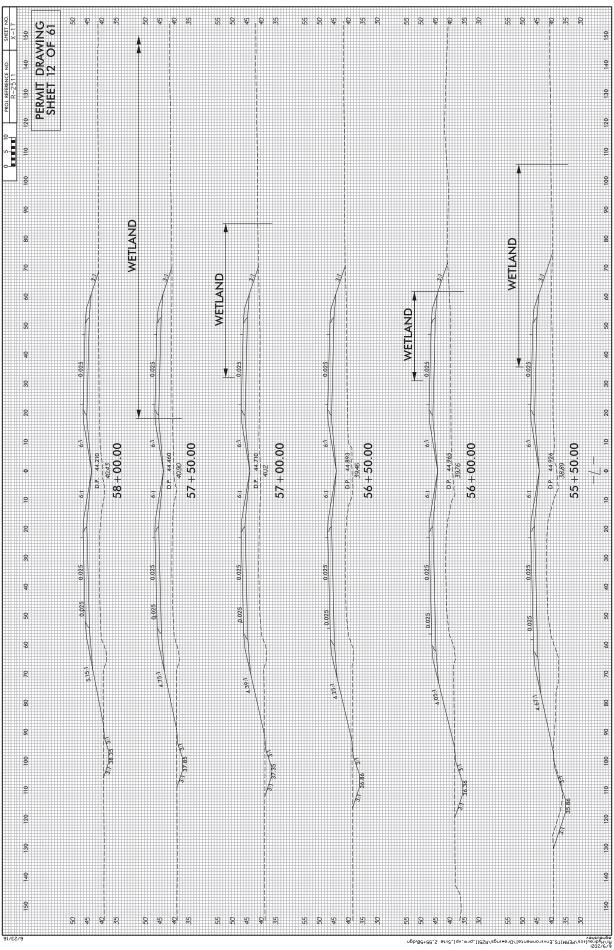
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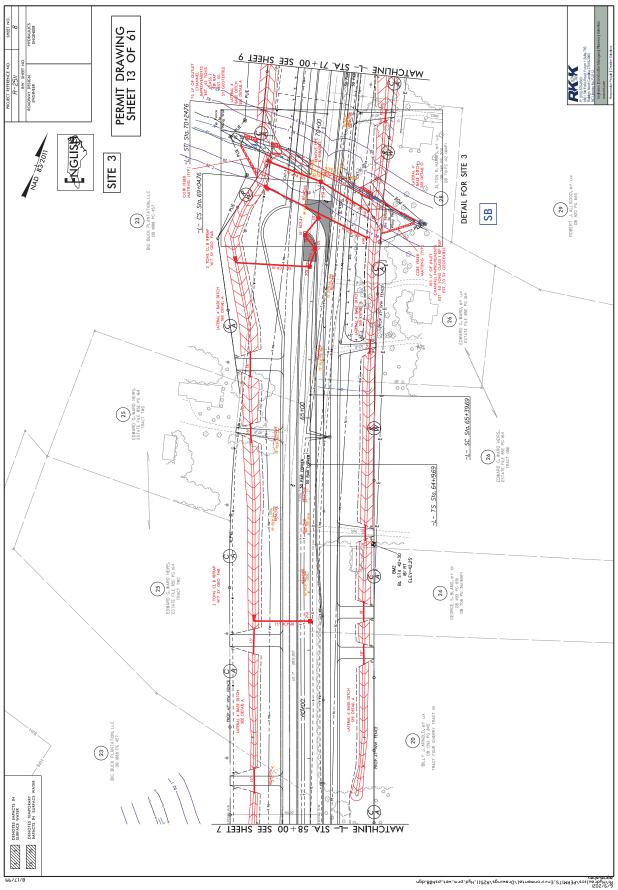




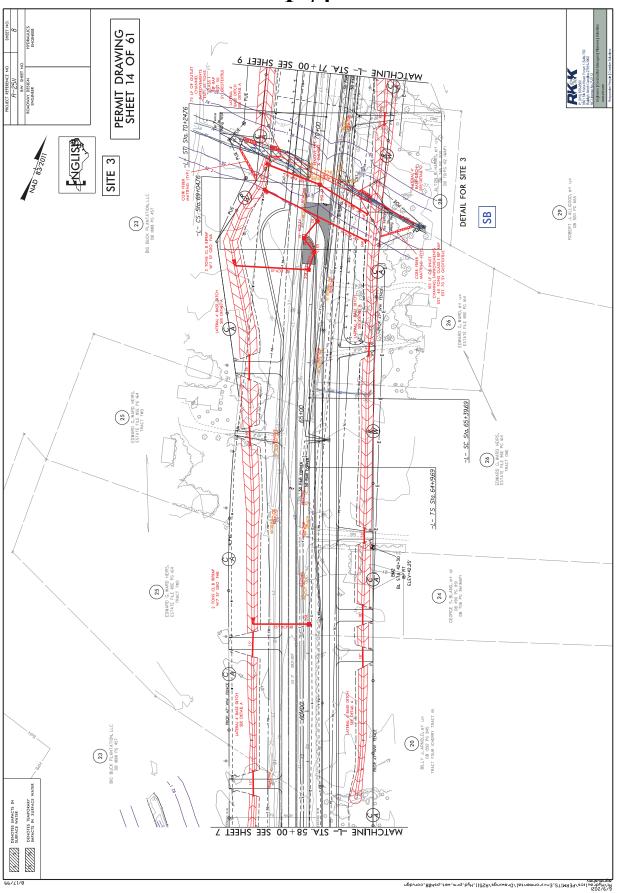




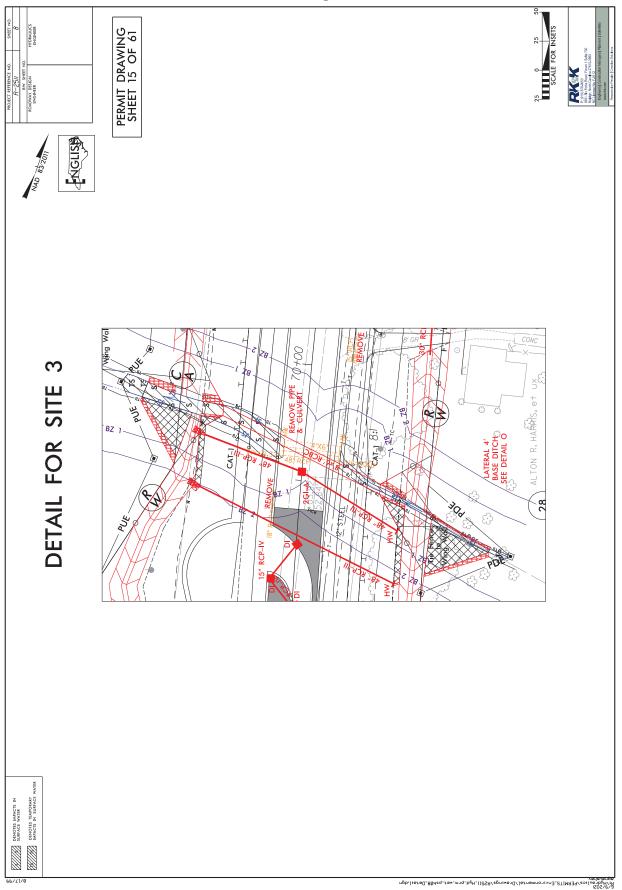
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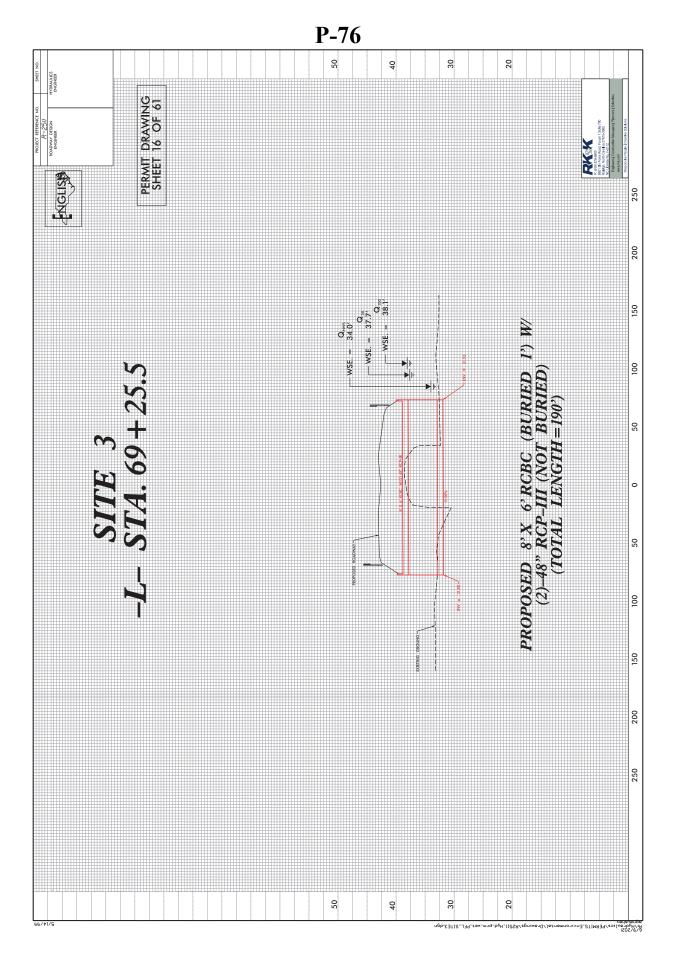
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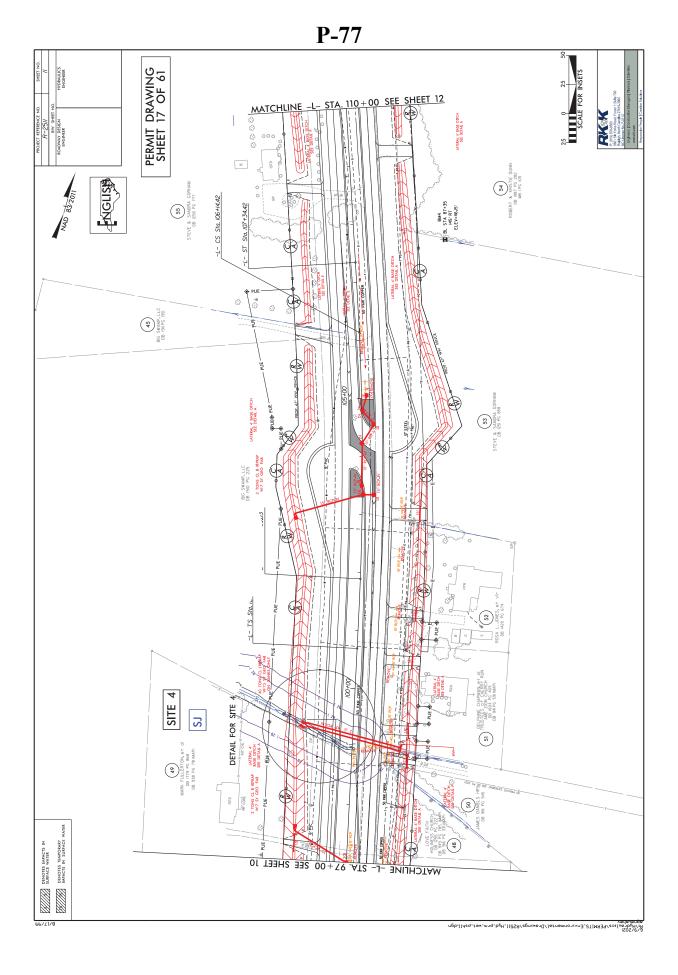


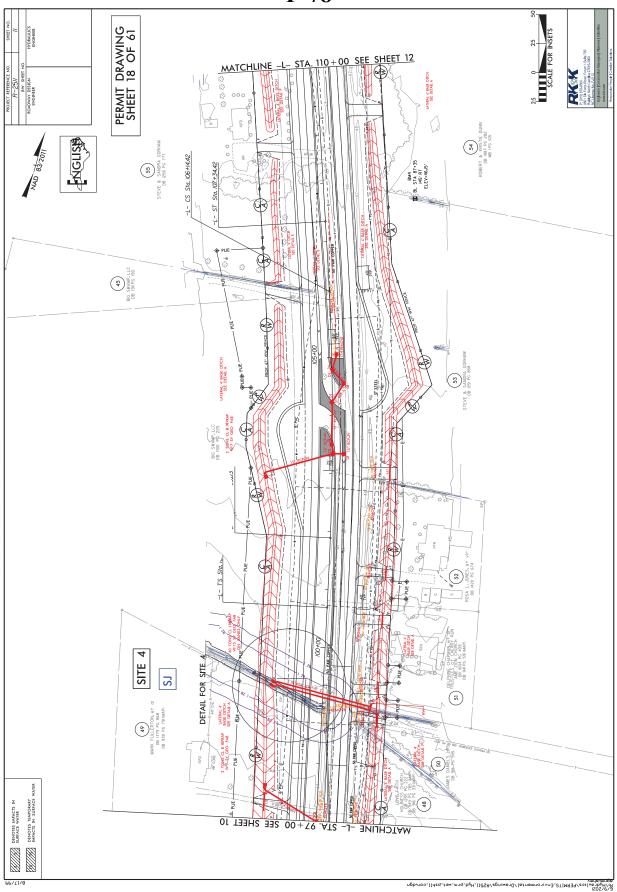
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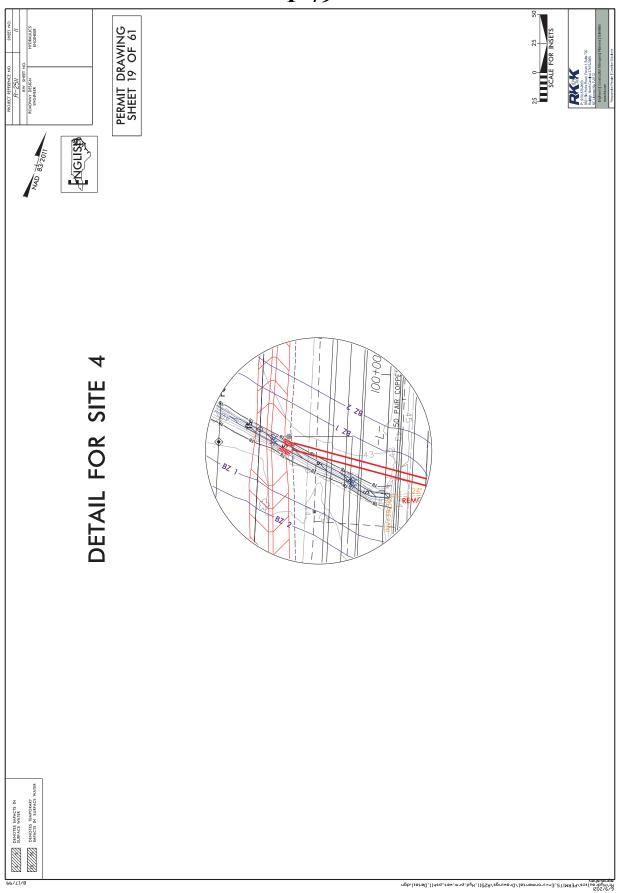
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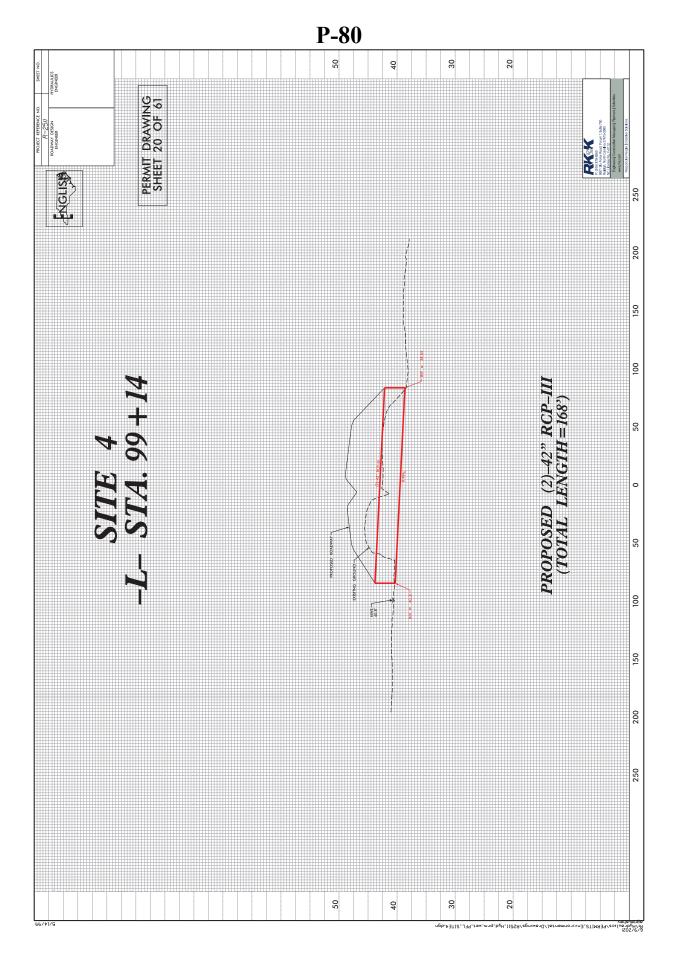


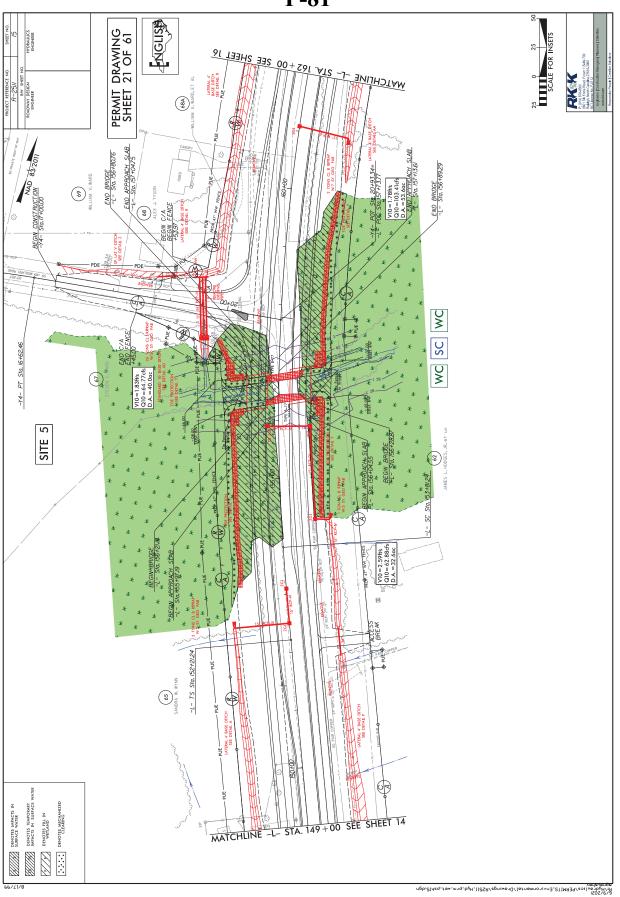


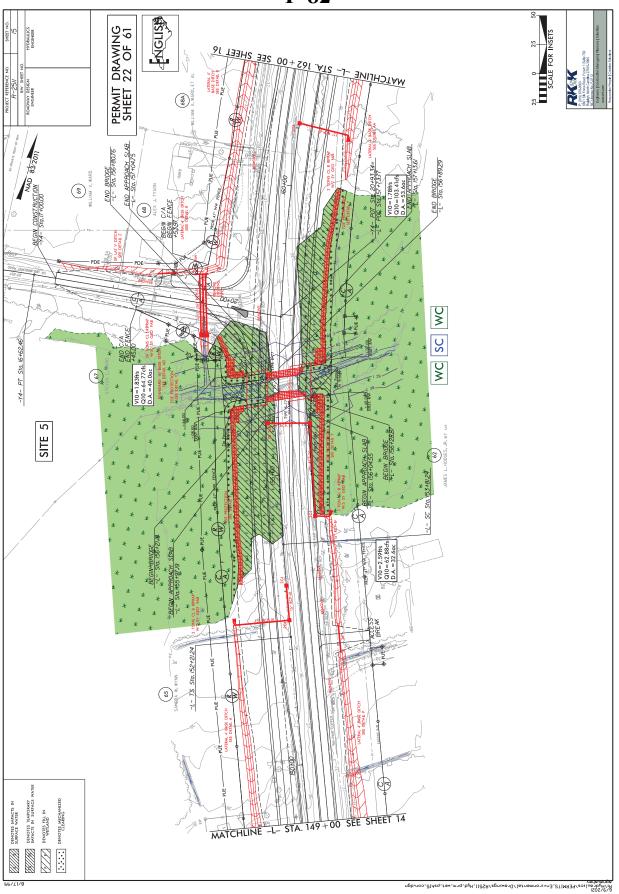
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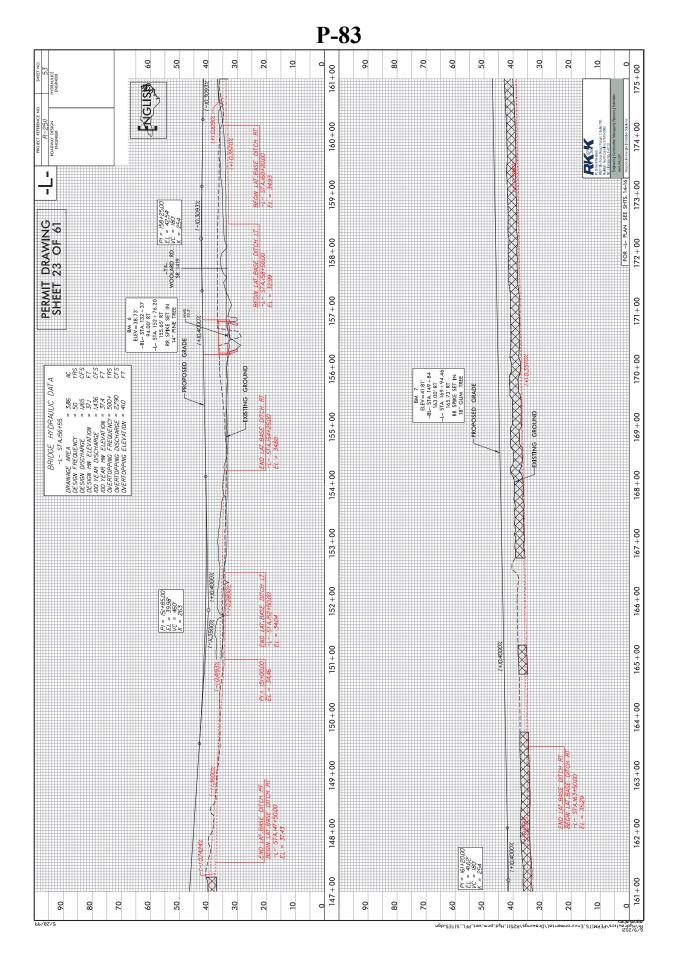
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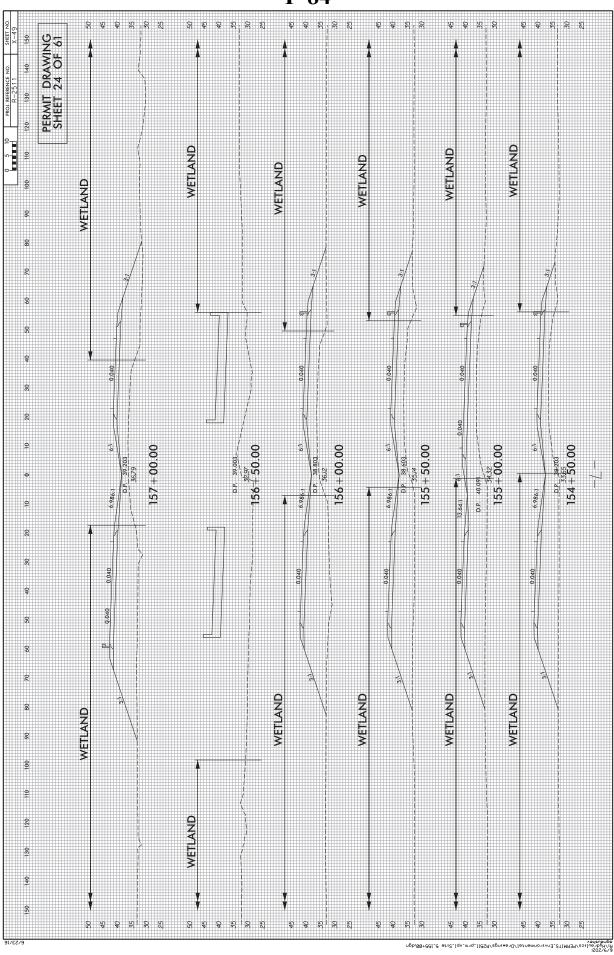




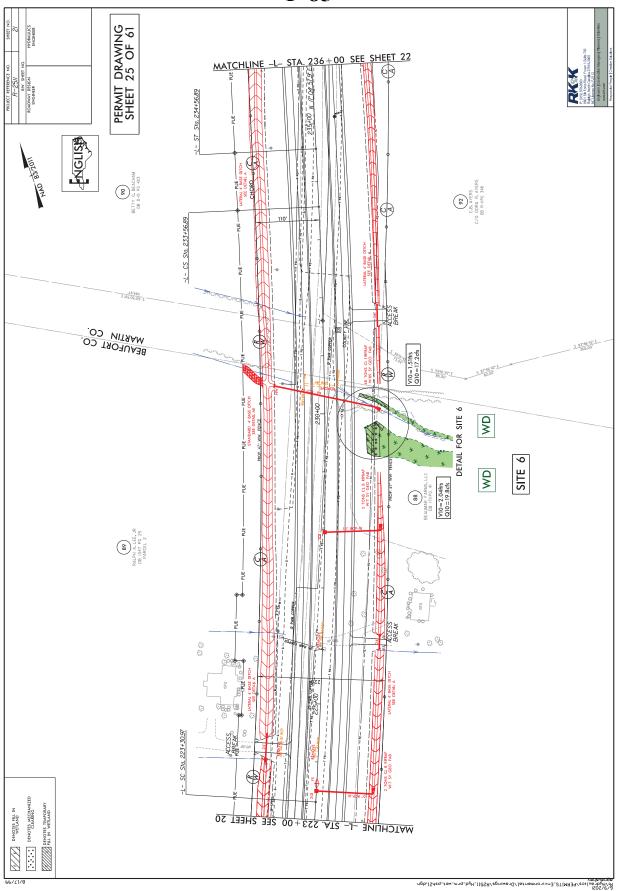


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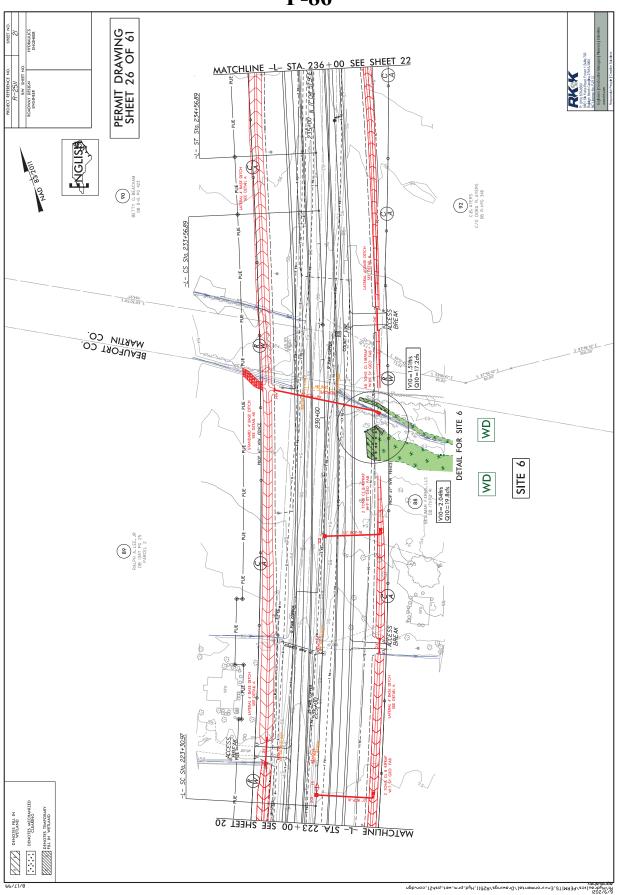




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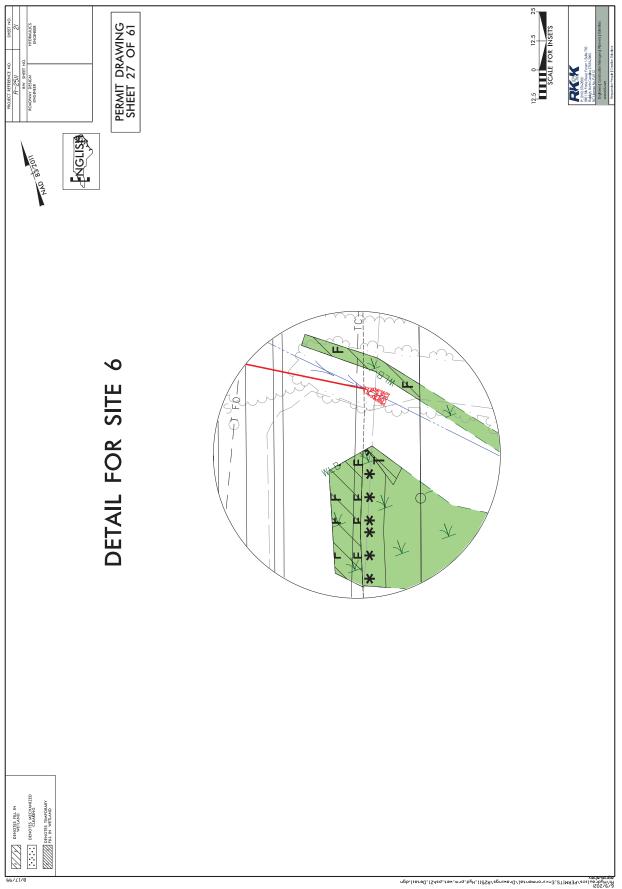
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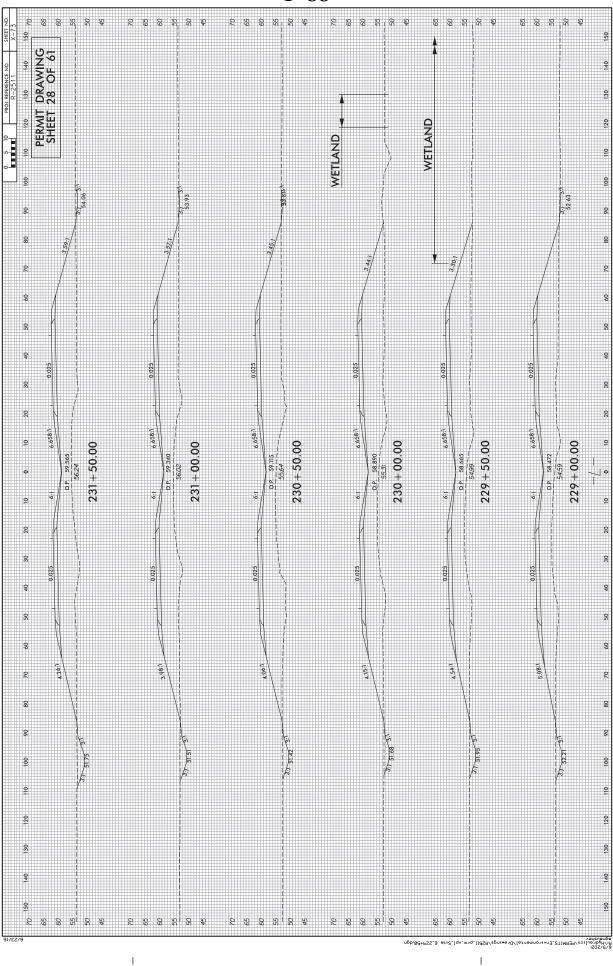


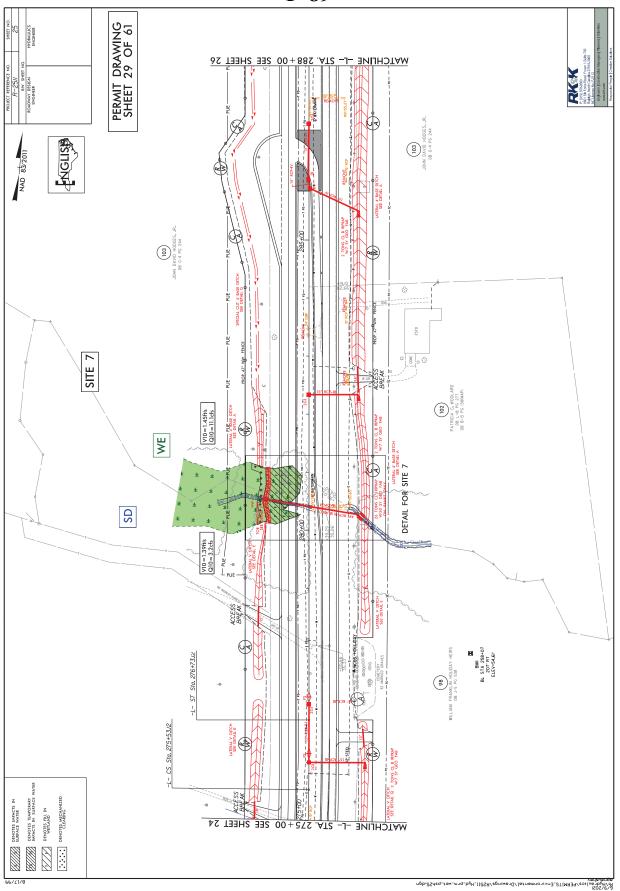
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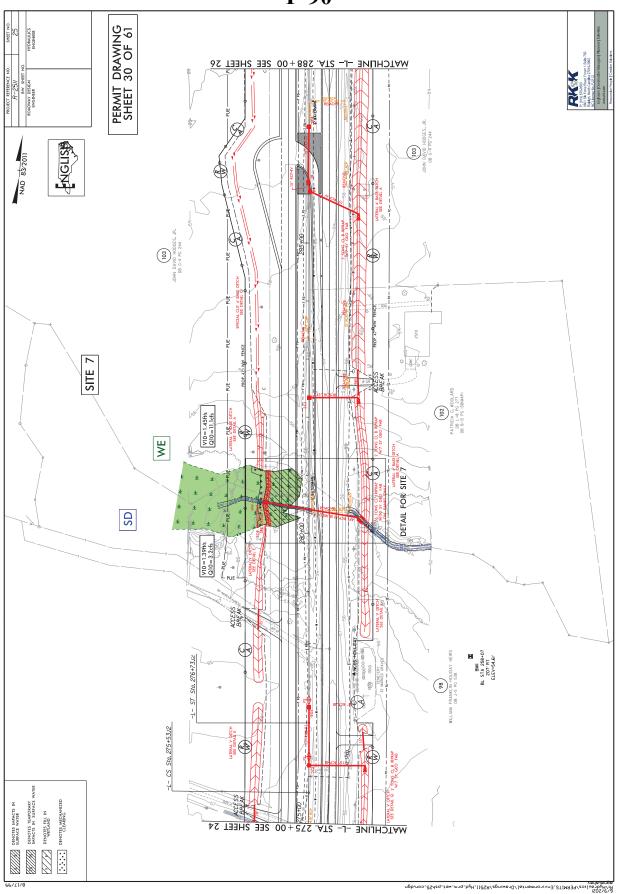
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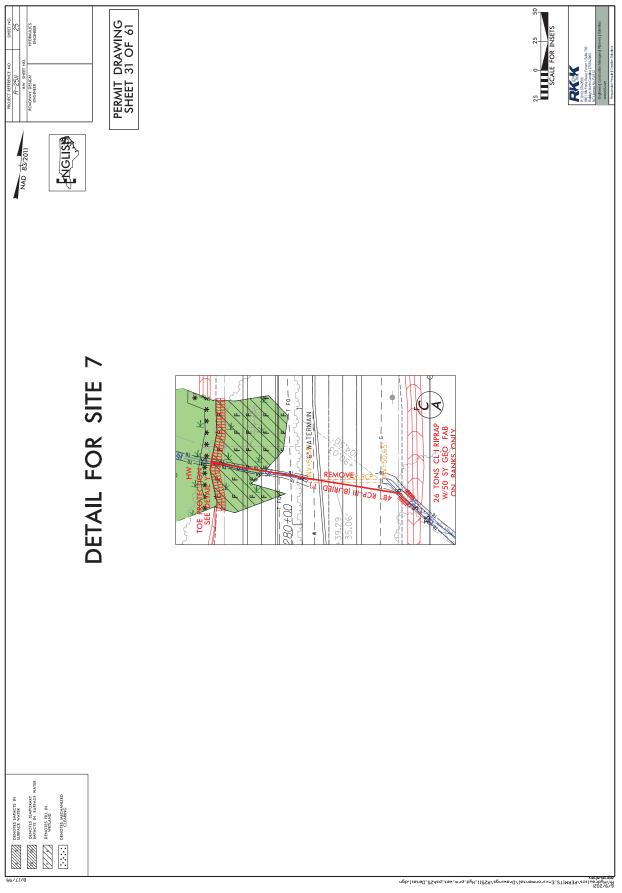






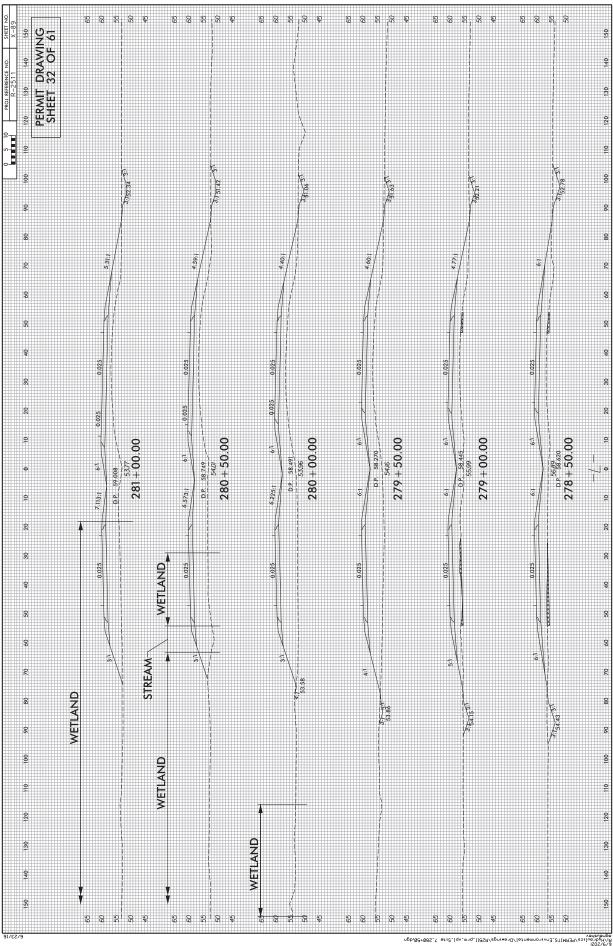


**P-90** 



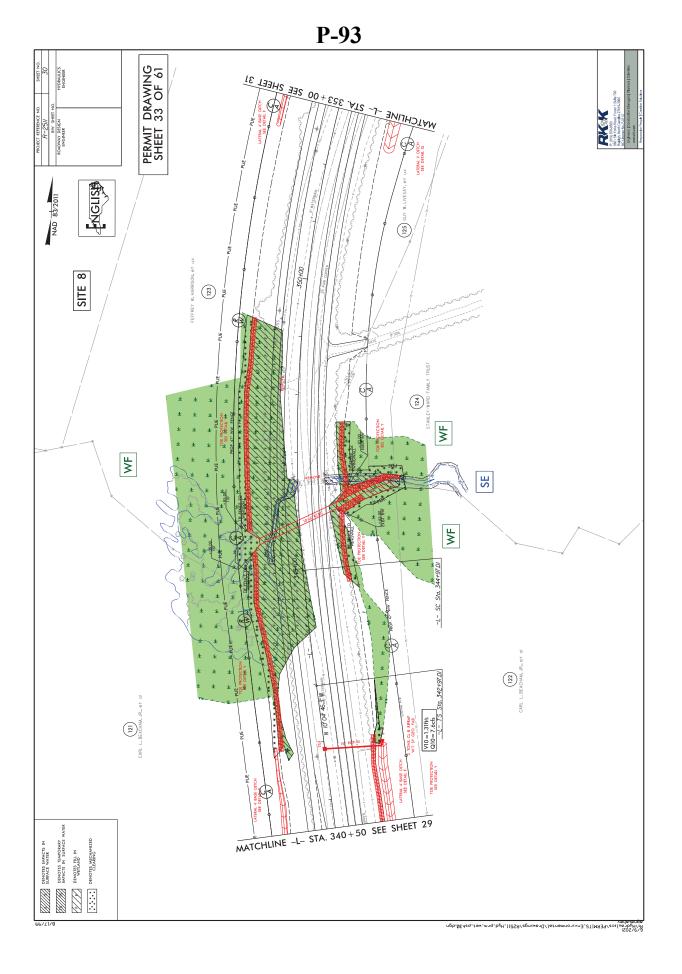
**P-91** 

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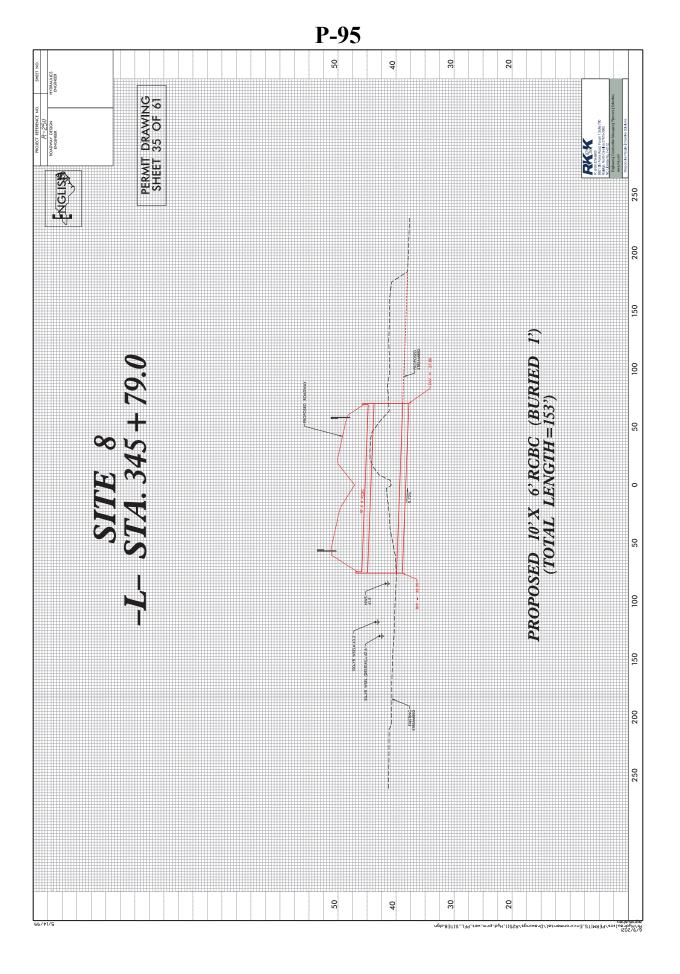
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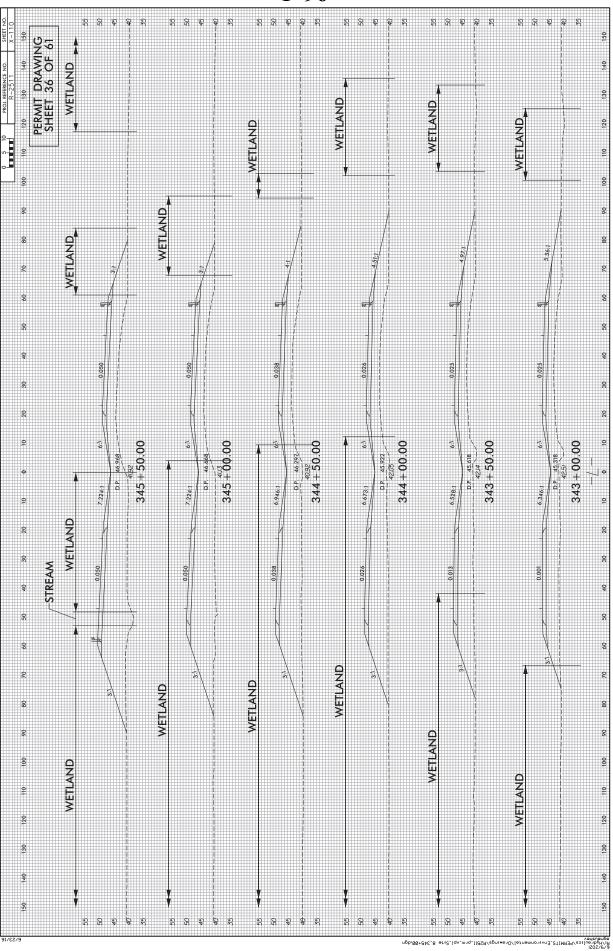




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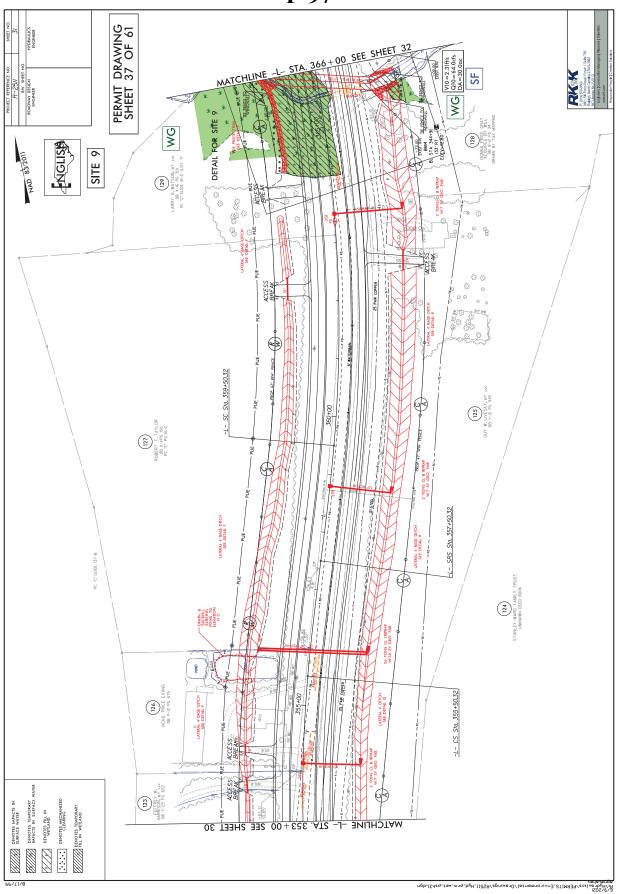


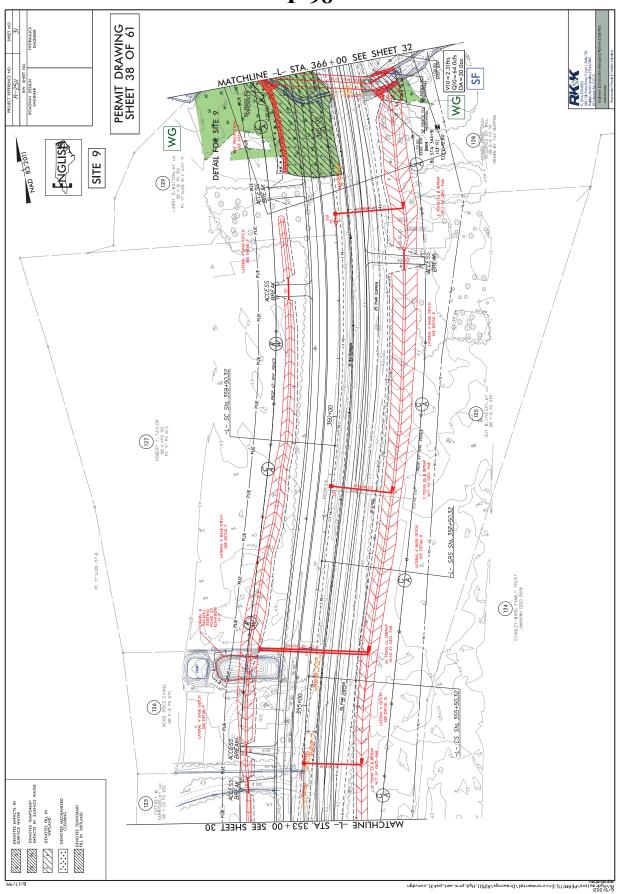
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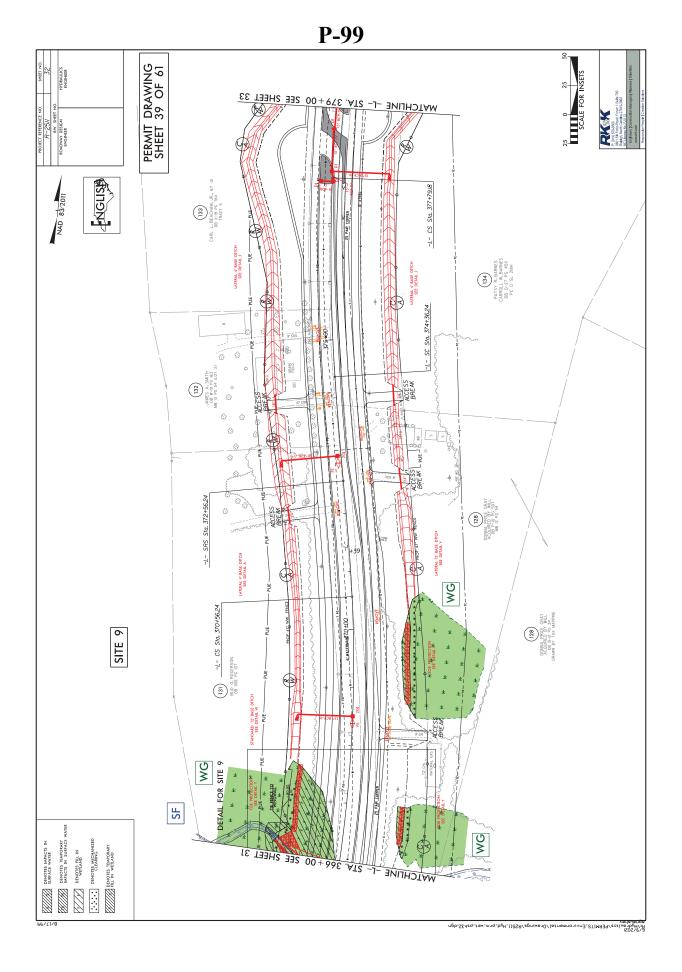


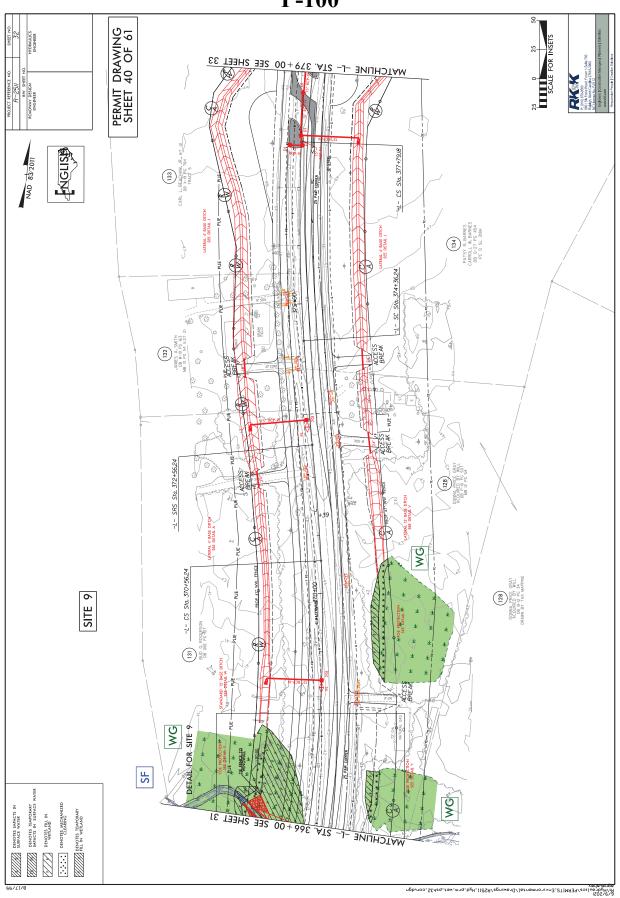


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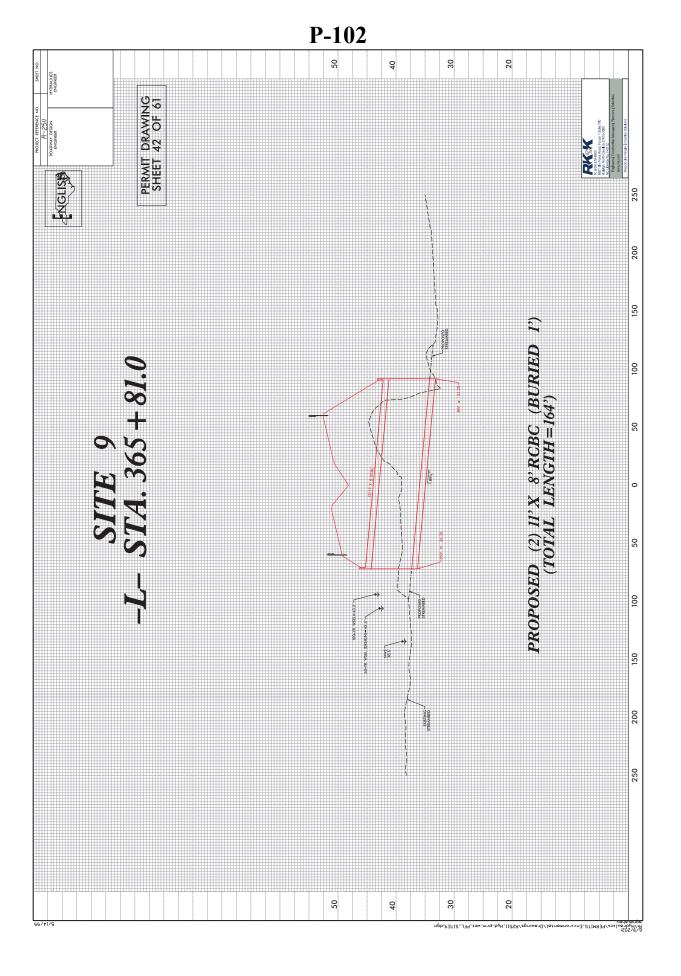


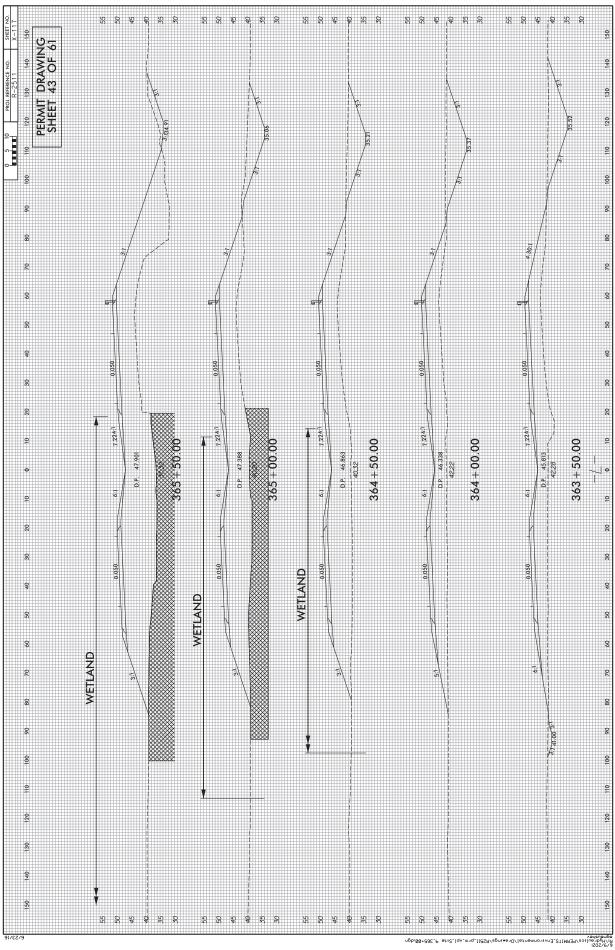




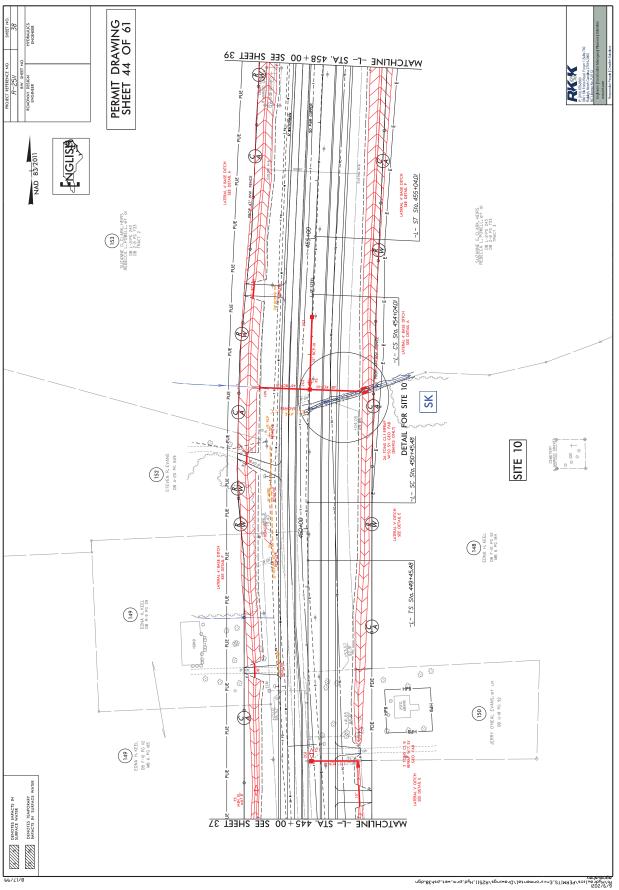


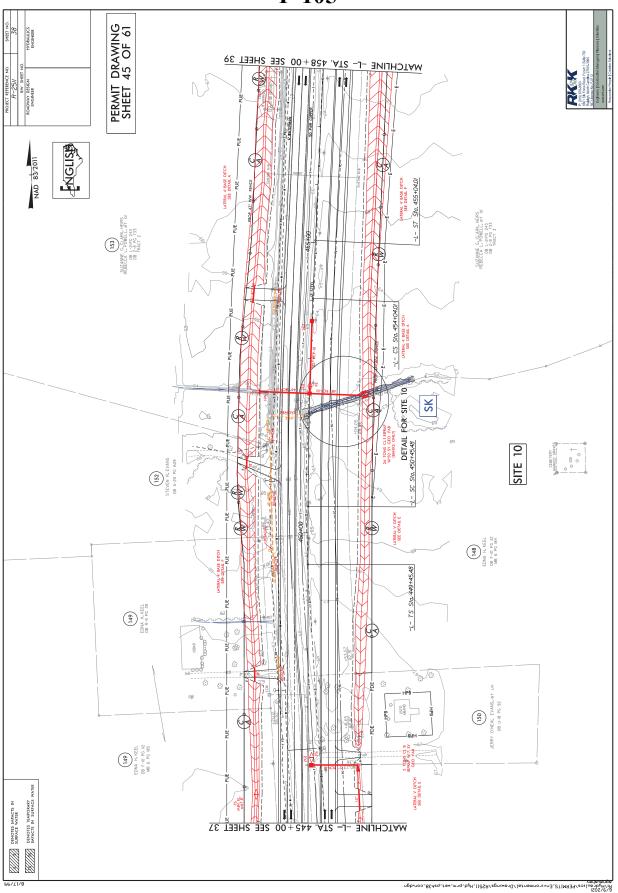
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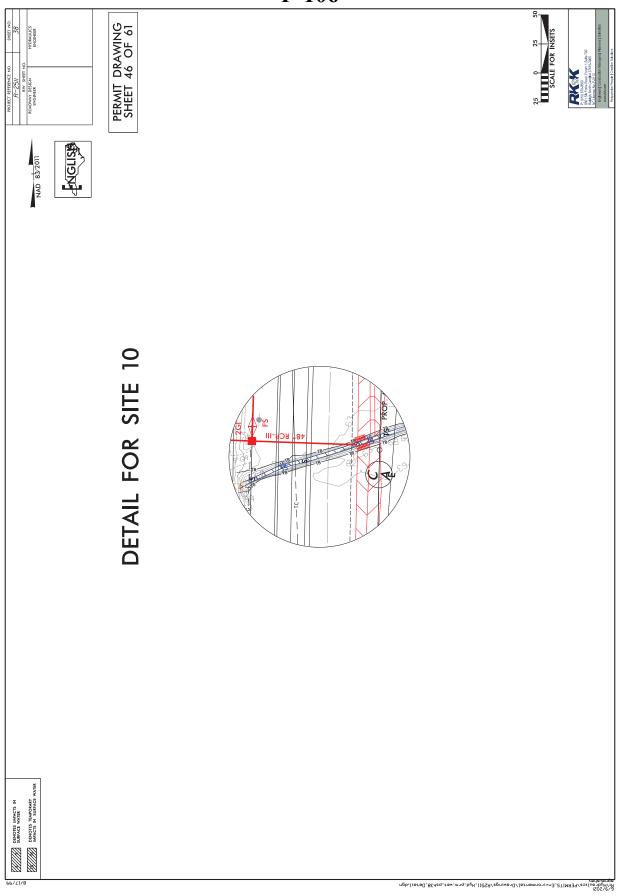




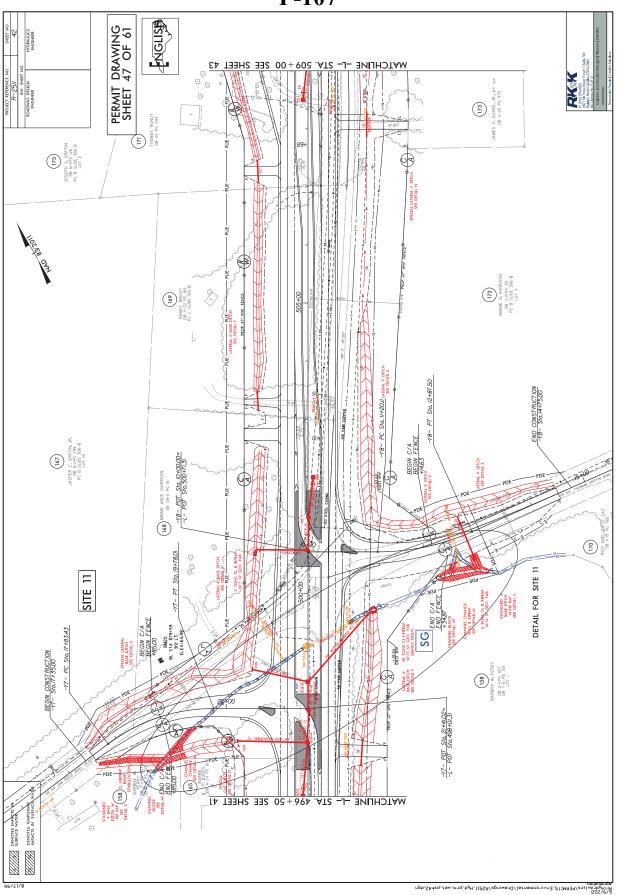
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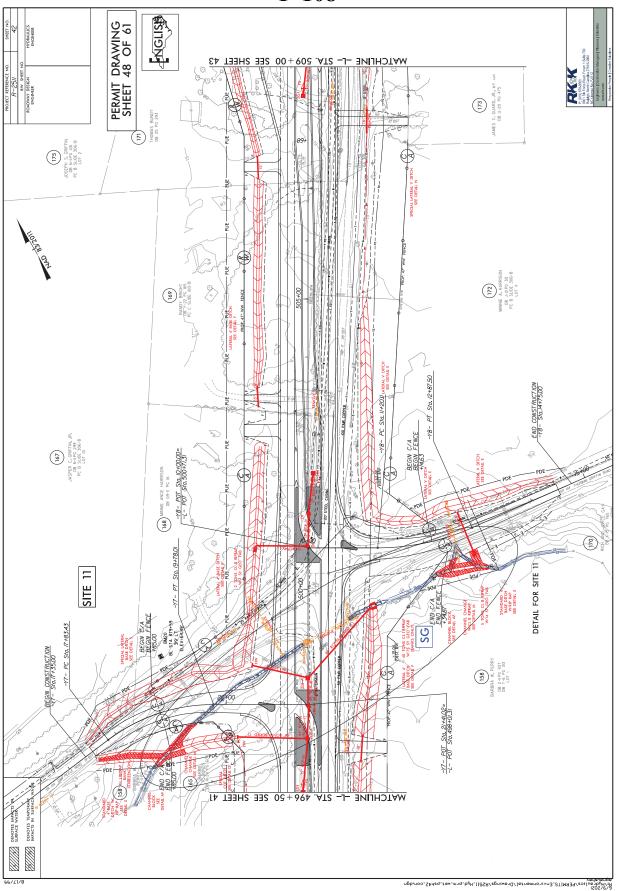




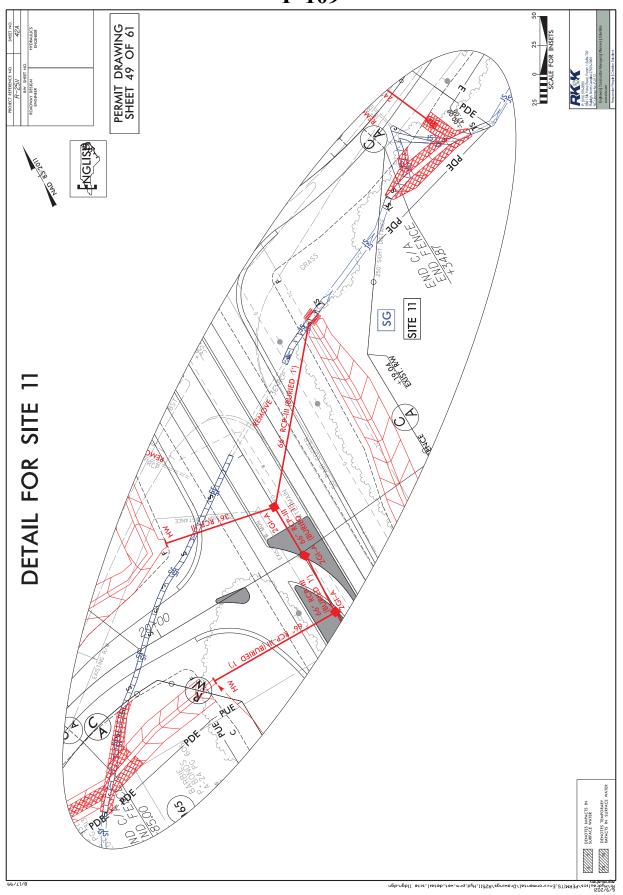




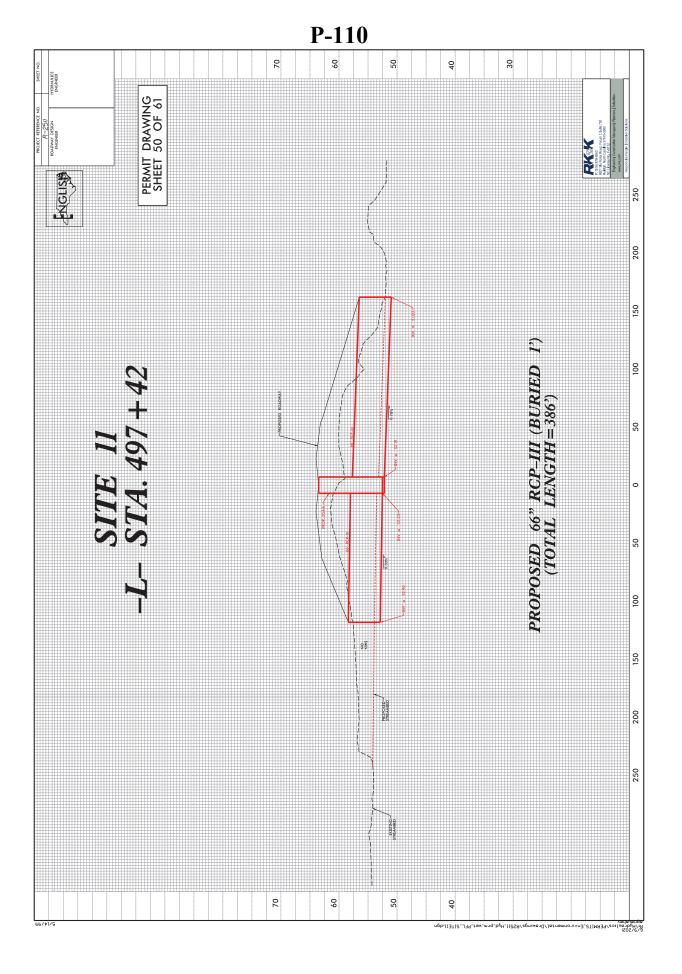


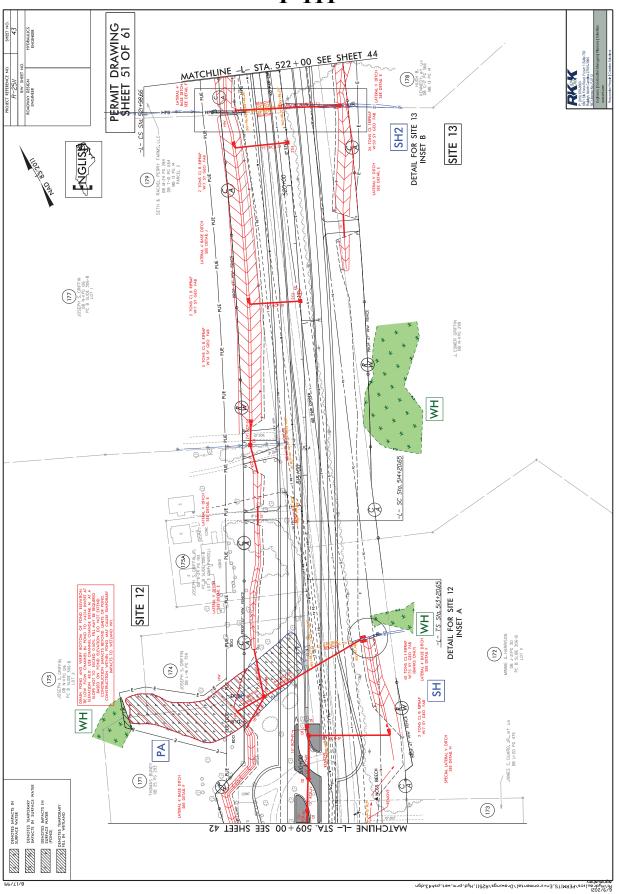


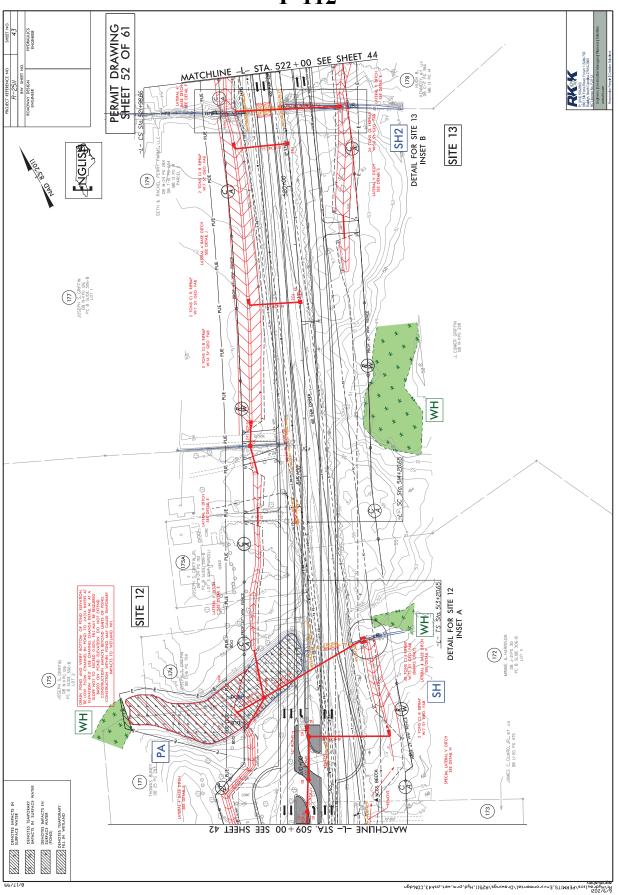
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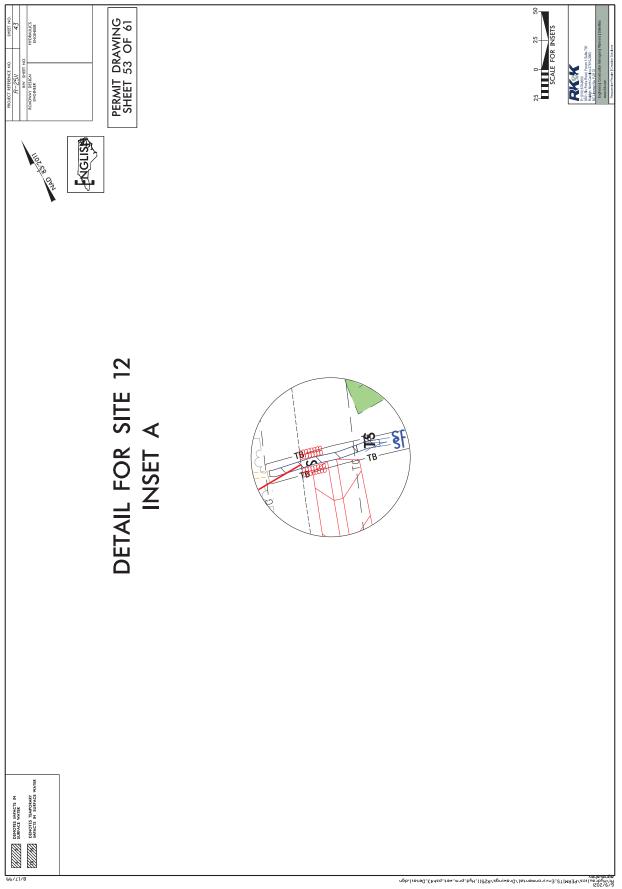


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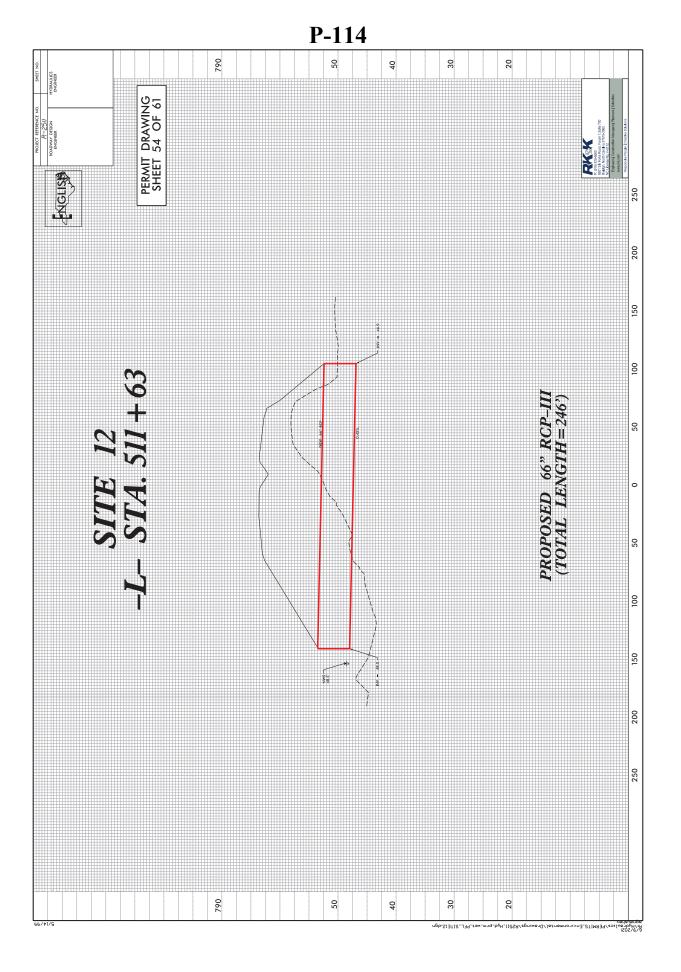


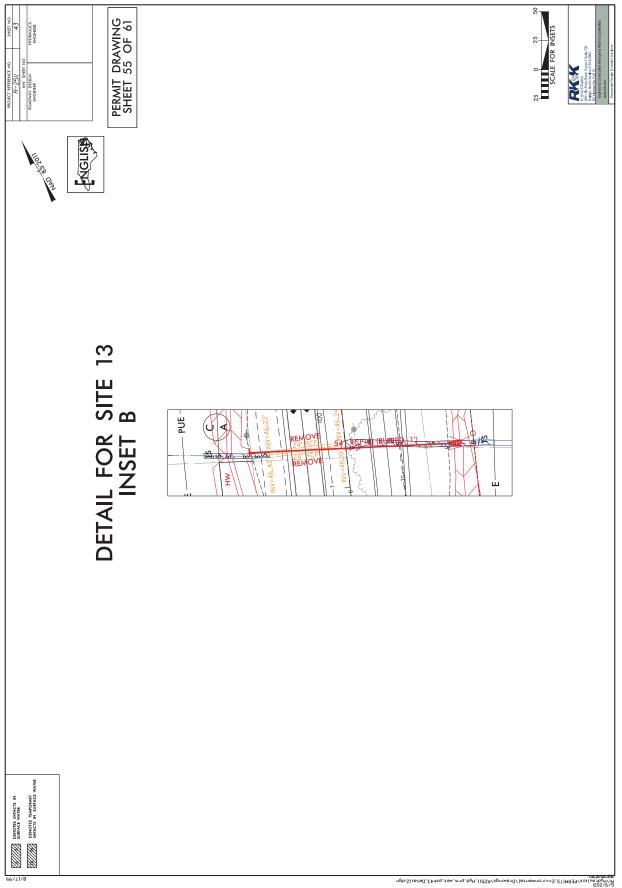




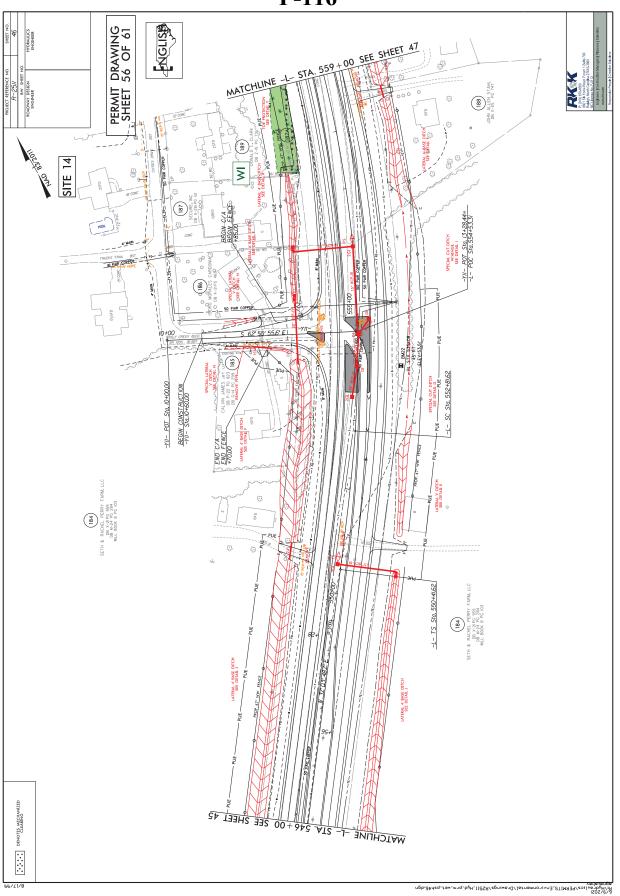


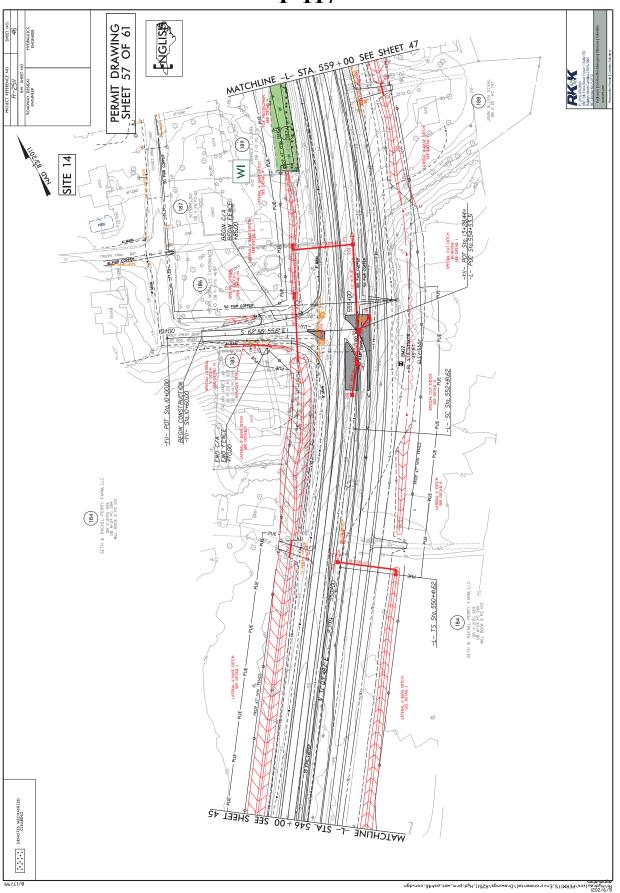
# **P-113**



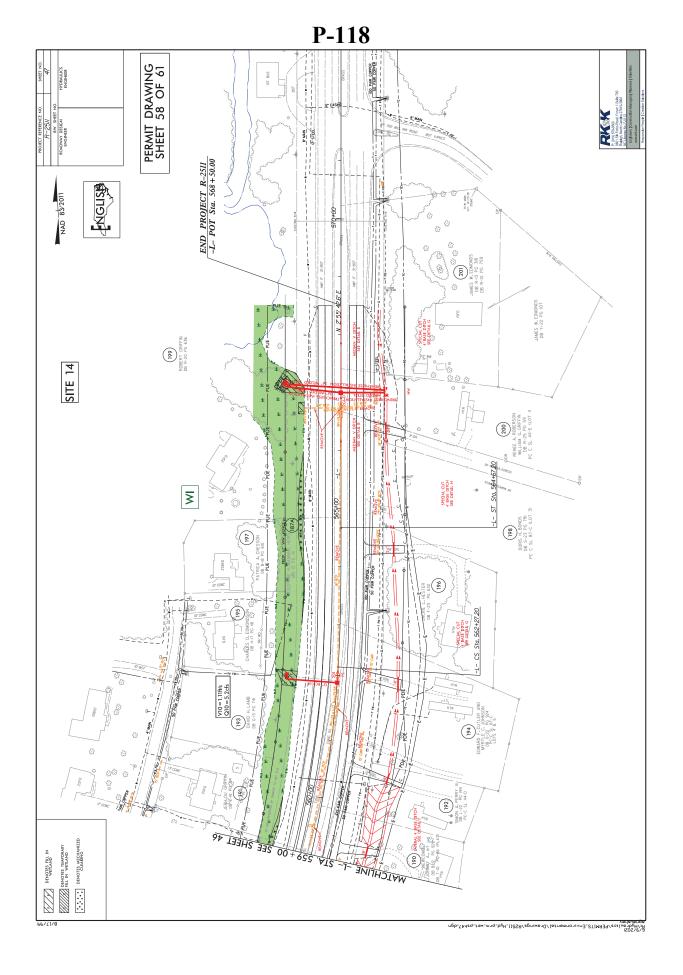


### **P-115**

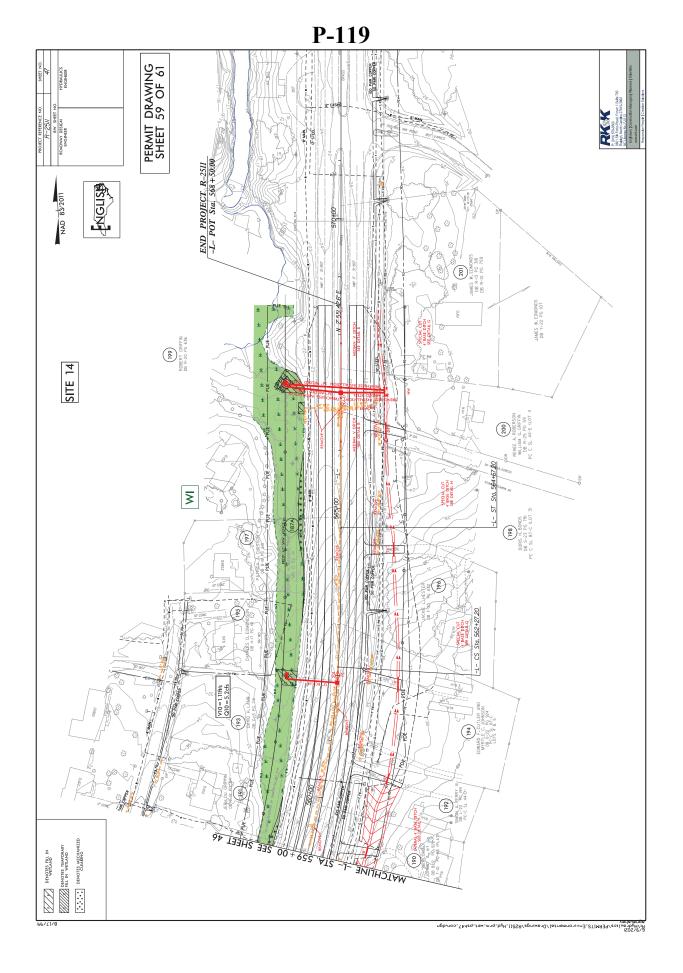


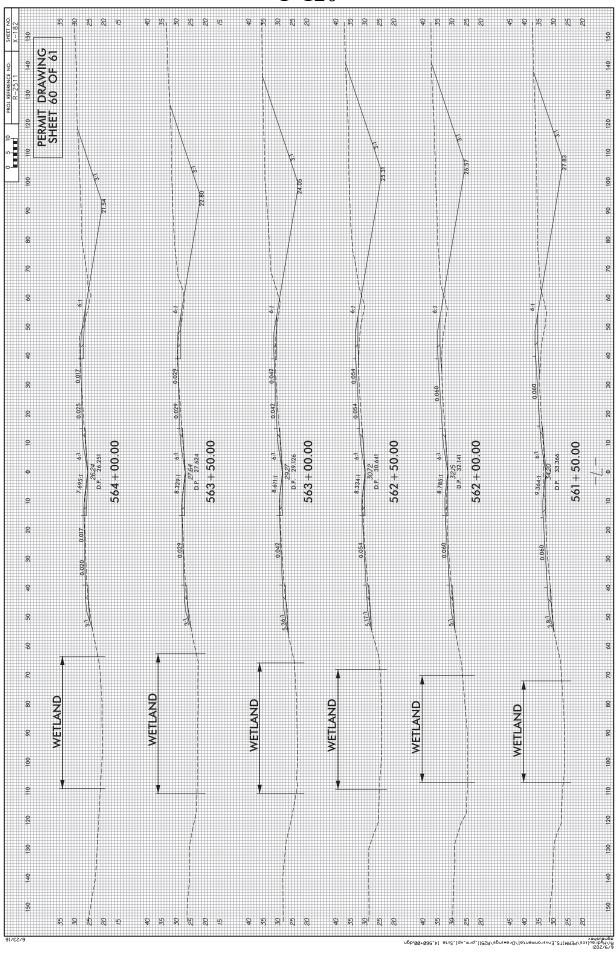


**P-117** 



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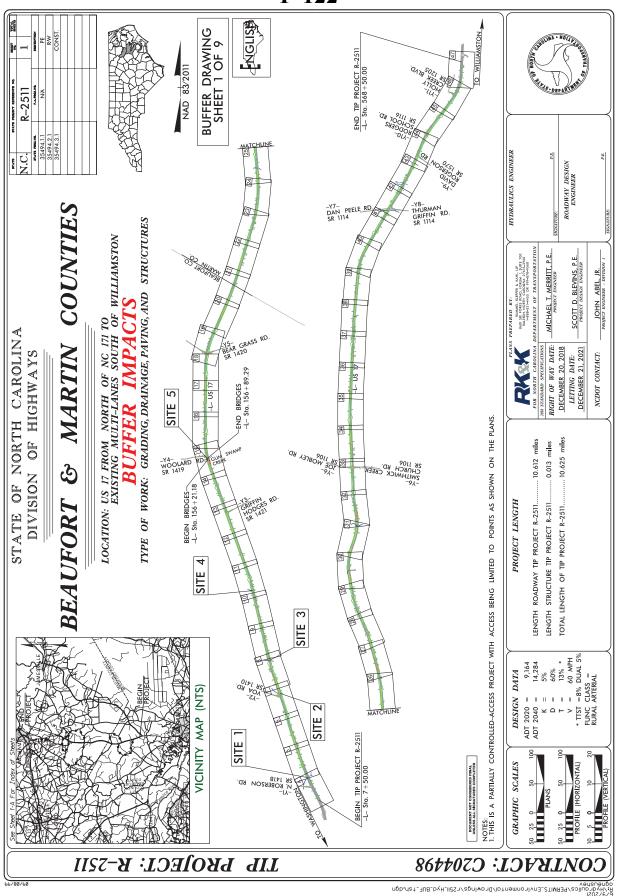


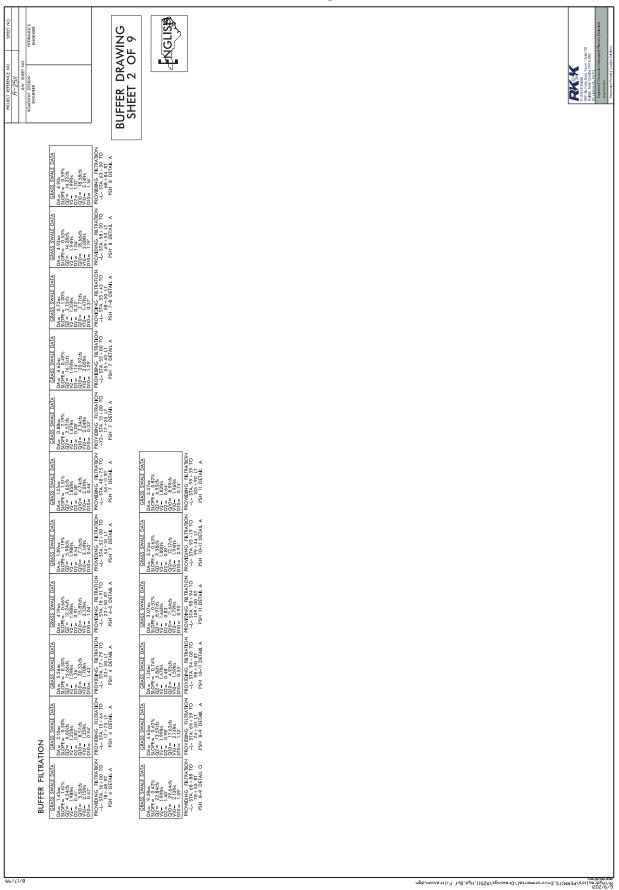
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**P-120** 

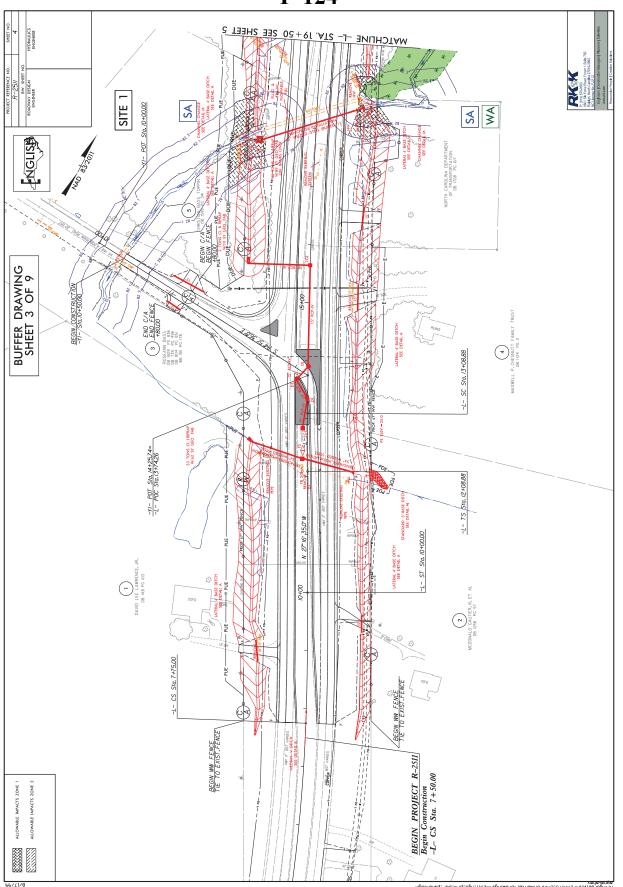
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														<u>Р</u>	-]			 	 	 ,	 							
	Natural Stream	Design (ft)																			0			RTATION		YTY		61
ACTS	Existing Channel Impacts	Temp. (ft)	20	13	38	10	155		20	6	36	13	42		10	20					385			F TRANSPO HIGHWAY	2021	ARTIN COU	4.1.1	ЪЪ
VATER IMI	Existing Channel Impacts	Permanent (ft)	79	351	284	129	7		128	286	227	129	512		40	169					2341			NC DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	6/9/2021	BEAUFORT & MARTIN COUNTY P-2511	35494.1.1	61
SURFACE WATER IMPACTS	Temp. SW	impacts (ac)	< 0.01	< 0.01	< 0.01	< 0.01	0.07		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01					0.10			NC DEP		$BE^{\prime}$		SHEFT
	Permanent SW	impacts (ac)	0.01	0.04	0.05	0.01	< 0.01		< 0.01	0.04	0.05	< 0.01	0.05	0.50	< 0.01	0.02					0.80							
	Hand Clearing in	Wetlands (ac)																										
CTS	Mechanized Clearing	in Wetlands (ac)	< 0.01	0.05			0.27	0.01	0.03	0.32	0.15						0.08				0.91							
WETLAND IMPACTS		Wetlands (ac)								0.06	0.01										0.07							
WET	Temp. Fill In	Wetlands (ac)		0.01			0.04	< 0.01			0.03			< 0.01			0.05				0.14							
	Permanent Fill In	Wetlands (ac)		0.26			1.00	0.02	0.11	1.10	0.64						< 0.01				3.14							
	Structure	Size / Type	PROP 66" WELDED STEEL: SA, WA	PROP. 60" RCP & ROADWAY FILL: SB2, WB	PROP. 8'X6' RCBC W/ (2) 48" RCP: SB	PROP. (2) 42" RCP: SJ	PROP. DUAL BRIDGES: SC, WC	ROADWAY FILL: WD	PROP. 48" RCP & ROADWAY FILL: SD, WE	PROP. 10'X6' RCBC & ROADWAY FILL: SE, WF	PROP. (2) 11'X8' RCBC & ROADWAY FILL: SF, WG	PROP. 48" RCP & ROADWAY FILL: SK	PROP. 66" RCP & ROADWAY FILL: SG	DRAIN/FILL POND: PA, WH	PROP. 66" RCP & ROADWAY FILL: SH	PROP. 54" RCP & ROADWAY FILL: SH2	ROADWAY FILL: WI					tual impacts						
	Station	(From/To)	-L- 17+60 TO 18+88	-L- 54+35 TO 57+82	-L- 68+45 TO 69+77	-L- 98+94 TO 99+55	-L- 152+86 TO 160+06	-L- 229+26 TO 230+35	-L- 280+02 TO 281+11	-L- 341+75 TO 349+30	-L- 364+15 TO 367+67	-L- 452+03 TO 452+53	-L- 496+93 TO 500+77	-L- 510+39 TO 512+28	-L- 512+10 TO 512+27	-L- 521+22 TO 521+28	-L- 557+40 TO 567+41					*Rounded totals are sum of actual impacts						,
	Site	No.	1	2	З	4	5	9	7	8	თ	10	11	12		13	14				TOTALS*:	*Round	NOTES:					Revised 2018 Feb



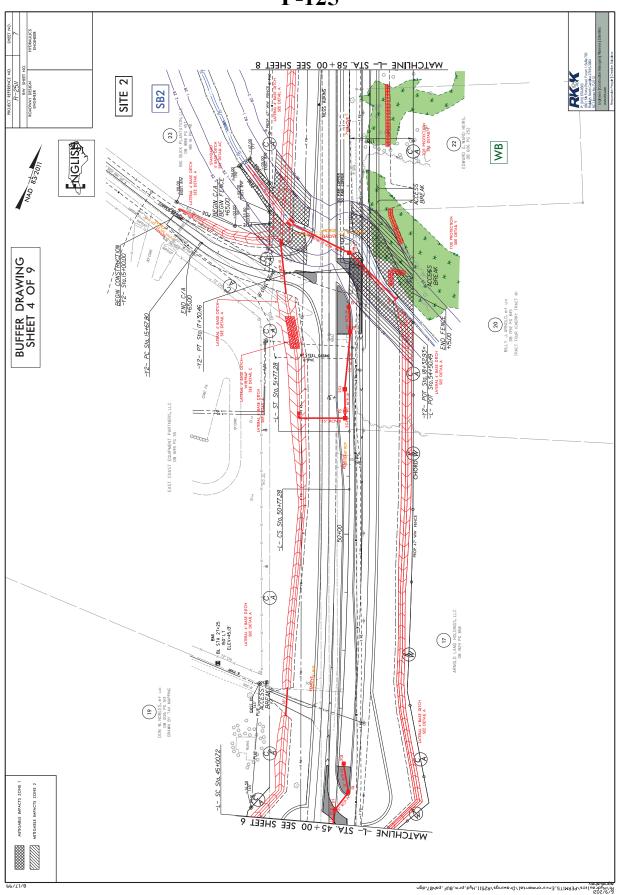




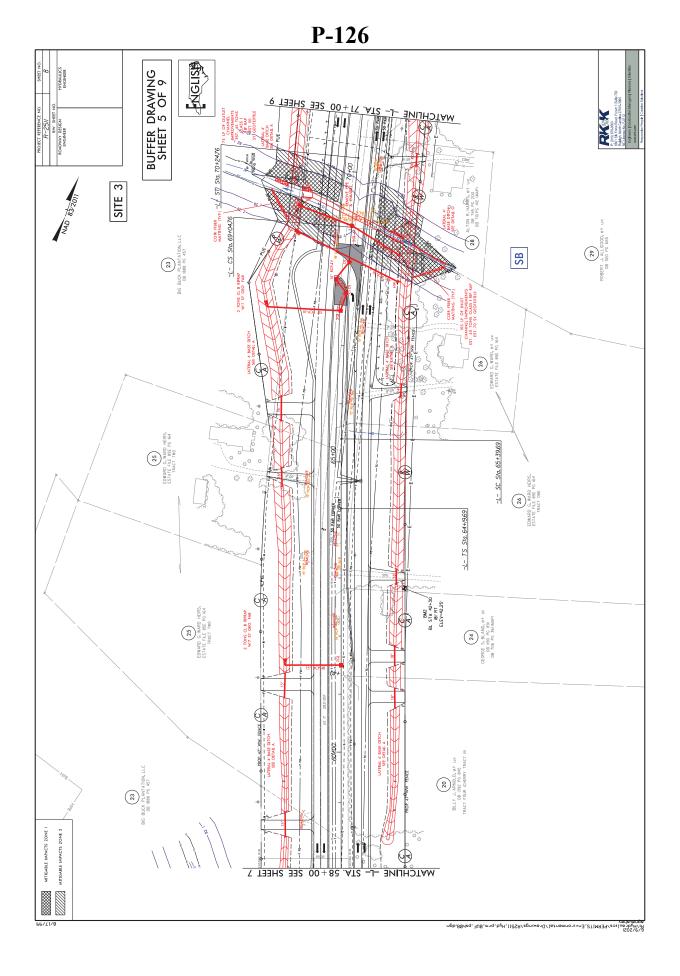


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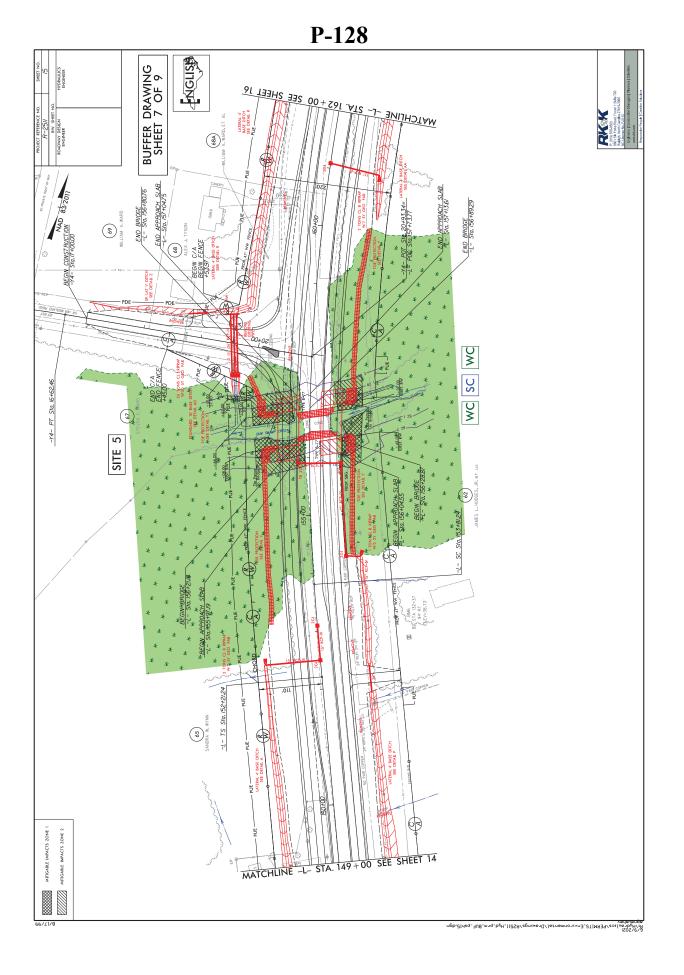
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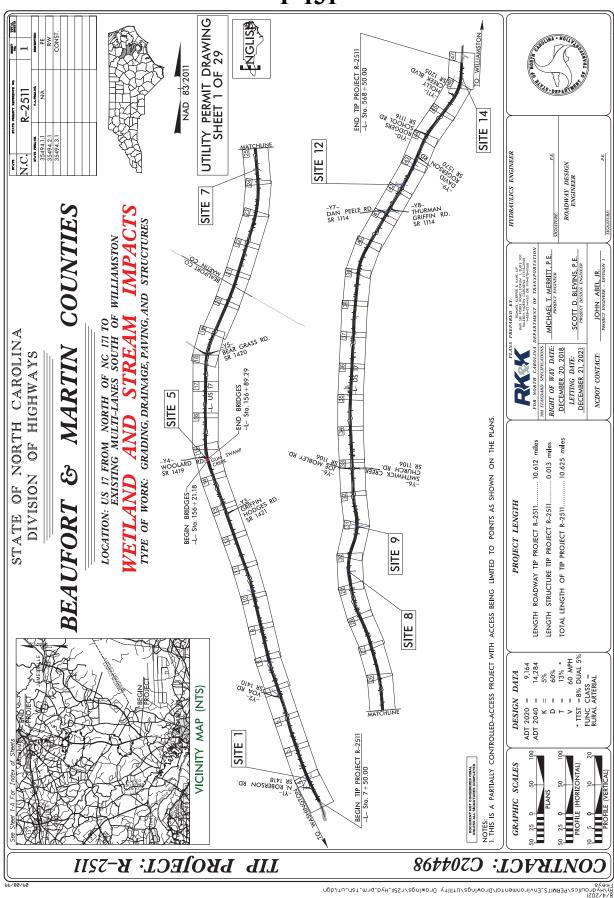
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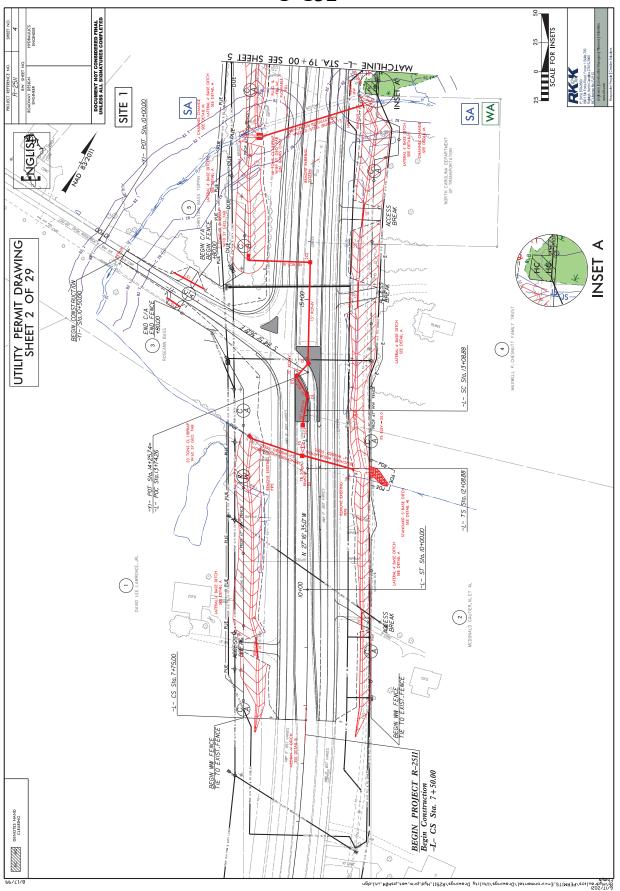


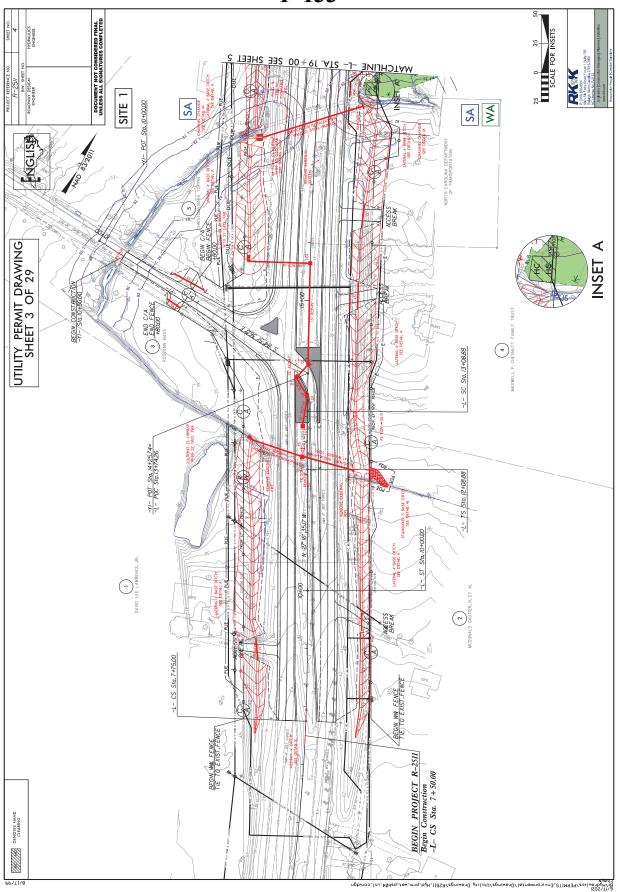
											1	-	1	43	/						
	BLIFFFR	REPLACEMENT	ZONE 2 (ft <sup>2</sup> )																	0	IATION IES 9
	1 IR	REPLAC	ZONE 1 (ft <sup>2</sup> )																	0	NC DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS 6/9/2021 BEAUFORT & MARTIN COUNTIES R-2511 35494.1.1 SHEET 8 OF 9
			TOTAL (ft <sup>2</sup> )		27205	23590	14039	13411												78245	ARTMENT OF TRANSPOR DIVISION OF HIGHWAYS 6/9/2021 UFORT & MARTIN COUNT R-2511 35494.1.1 2ET 8 OF
		MITIGABLE	ZONE 2 (ft <sup>2</sup> )		10878	8618	5662	5181												30339	DEPARTM DIVISI BEAUFOR
		N	ZONE 1 (ft <sup>2</sup> )		16327	14972	8377	8230												47906	NCI
		ш	TOTAL (ft <sup>2</sup> )	10056																10056	
RY	<b>MPACTS</b>	ALLOWABLE	ZONE 2 (ft <sup>2</sup> )	4527																4527	
SUMMA	IMP/	AL	ZONE 1 (ft <sup>2</sup> )	5529																5529	
RIAN BUFFER IMPACTS SUMMARY			PARALLEL IMPACT																		
JFFER IN		ТҮРЕ	BRIDGE					×													Impacts
ARIAN BL			ROAD CROSSING	×	×	×	×														able vs Mitigable
RIPAF			Structure Size / Type	Prop. 66" WELDED STEEL	Prop. 60" RCP	Prop. 8'x6' RCBC w/ (2) 48" RCP	Prop. (2) 42" RCP	Prop. Dual 60' Bridges													NOTES: Total area, including utility impacts, has been taken into consideration for Allowable vs Mitigable Impacts
			Station (From/To)	16+90 to 19+13	52+89 to 55+62	68+12 to 70+29	98+36 to 100+13	155+70 to 157+45												.*:	sa, including utility impacts, h
			Site No.	-	2	ю	4	5												TOTALS*:	NOTES: Total are: Revised 2018 Feb

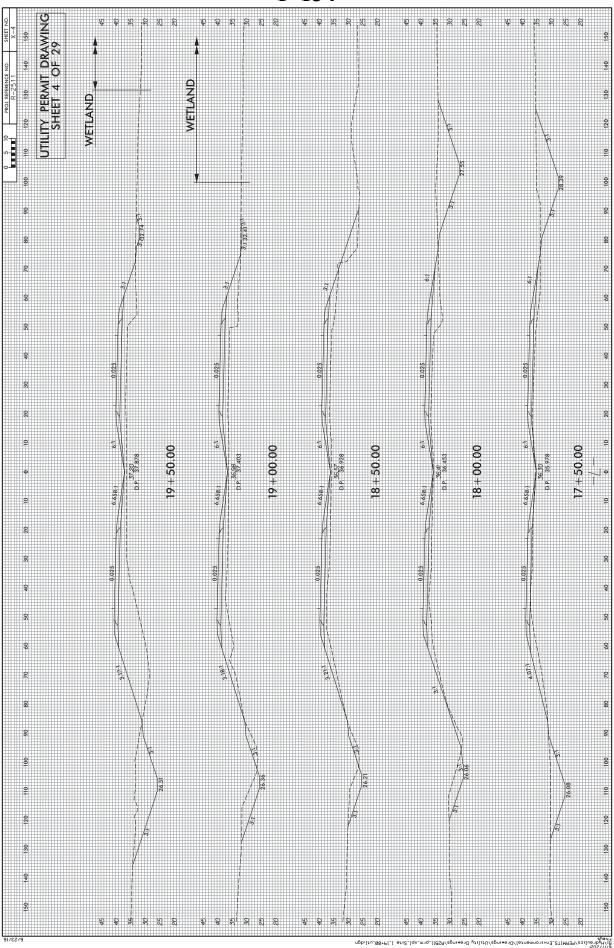
		WETLAND	IN BU	WETLANDS IN BUFFER IMPACTS SUMMARY
		WETLA	WETLANDS IN	
Ļ		BUFI	FERS	
SITE NO.	STATION (FROM/TO)	ZONE 1 (ft <sup>2</sup> )	ZONE 1 ZONE 2 (ft <sup>2</sup> ) (ft <sup>2</sup> )	
-	18+85 RT	176	9	
2	53+98 to 55+62	2030	2688	
5	155+70 to 157+45	8230	5181	
		2		
I U I AL:		10436	7875	
				NC DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS
				6/9/2021
				BEAUFORT & MARTIN COUNTIES R-2511
Revised 2018 Feb	6 <sup>0</sup>			35494.1.1 SHEET 9 OF 9

Rev. Jan 2009

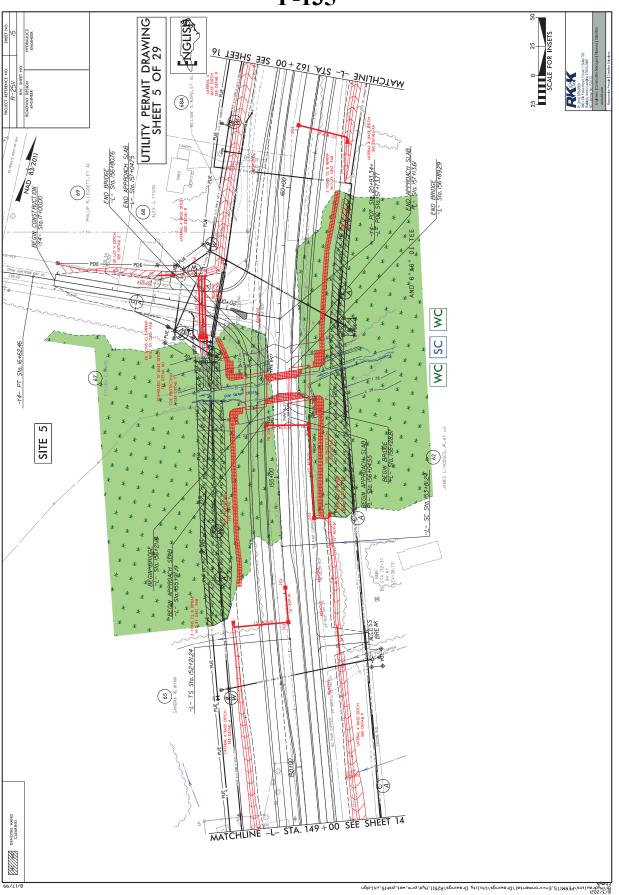


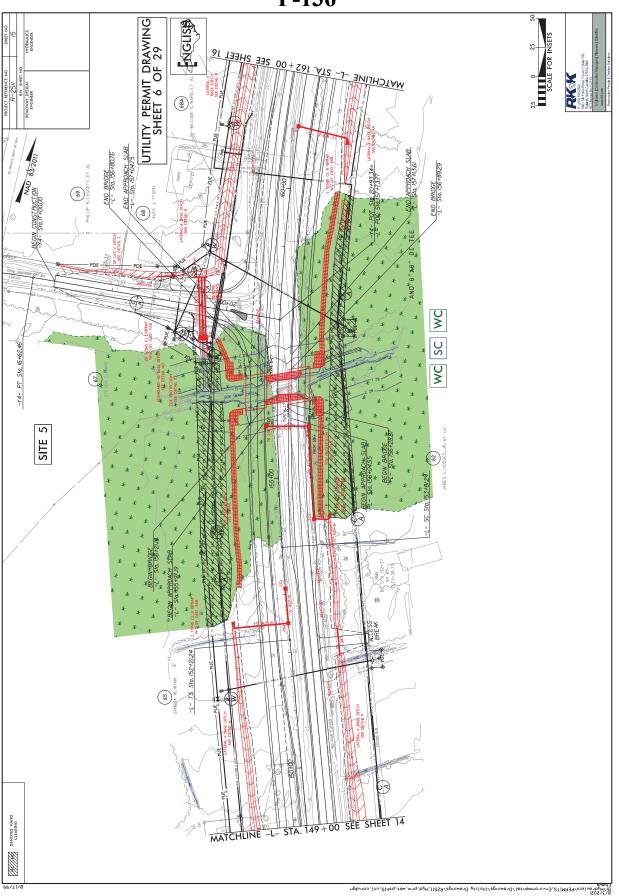


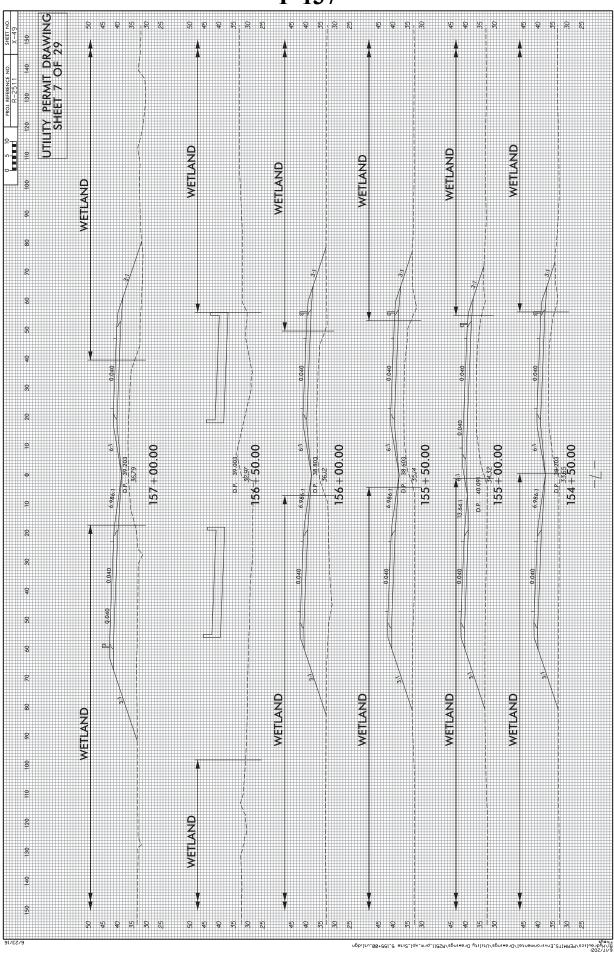




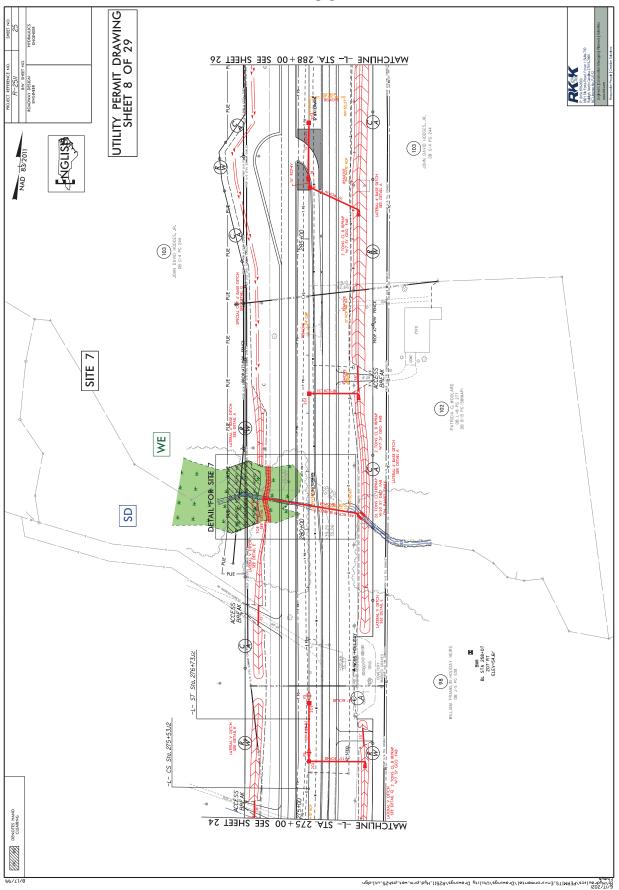
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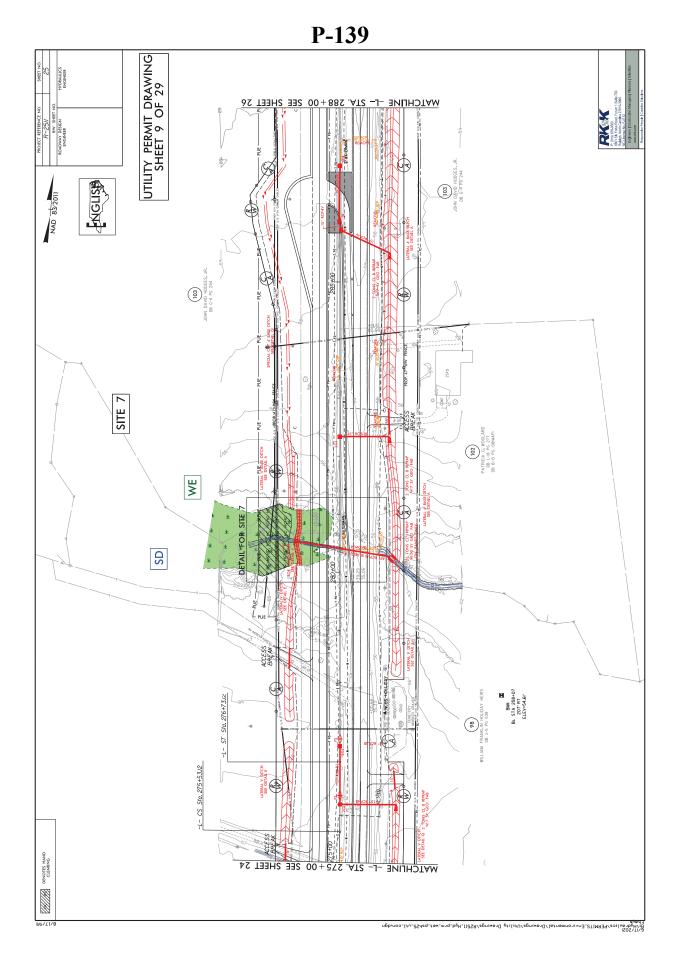




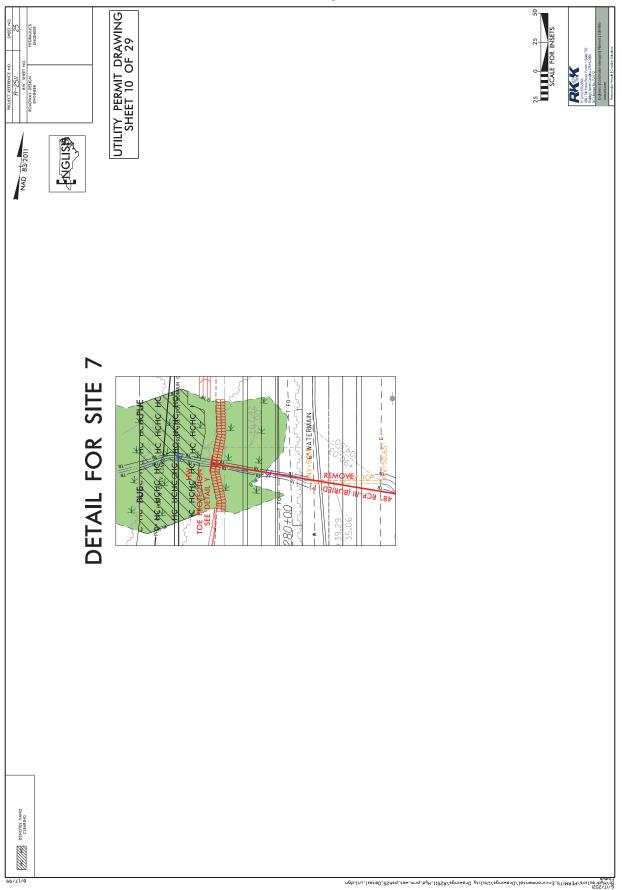
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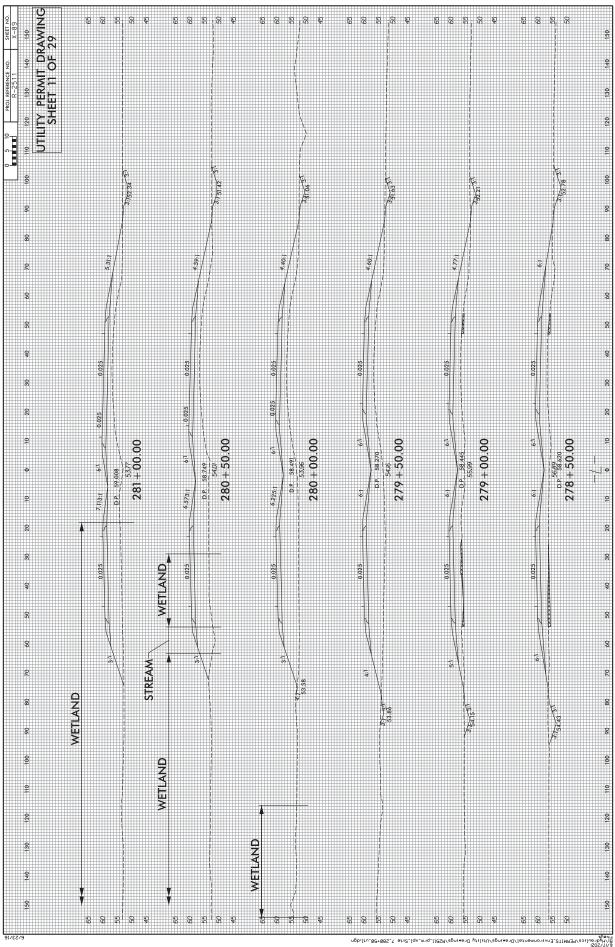


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## **P-140**

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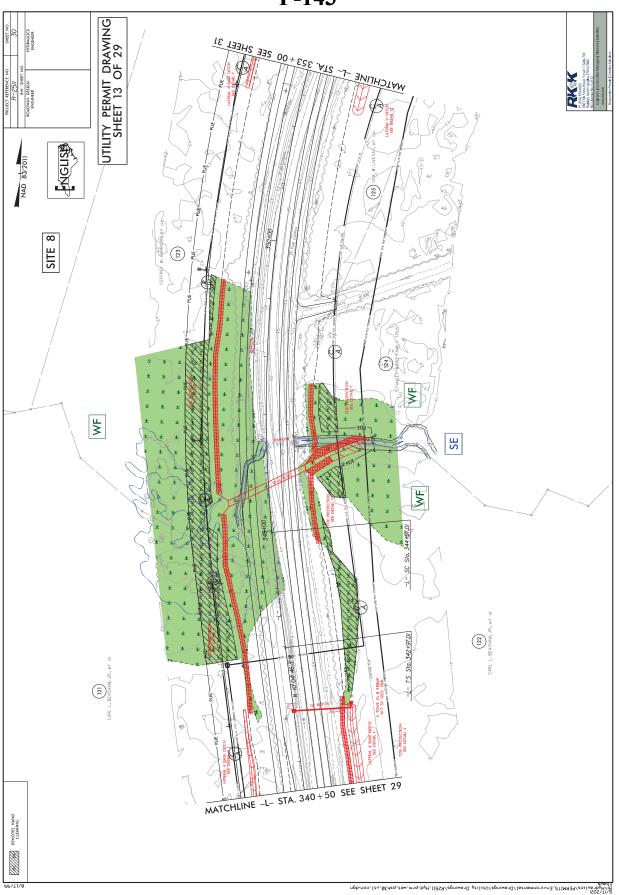
**P-141** 

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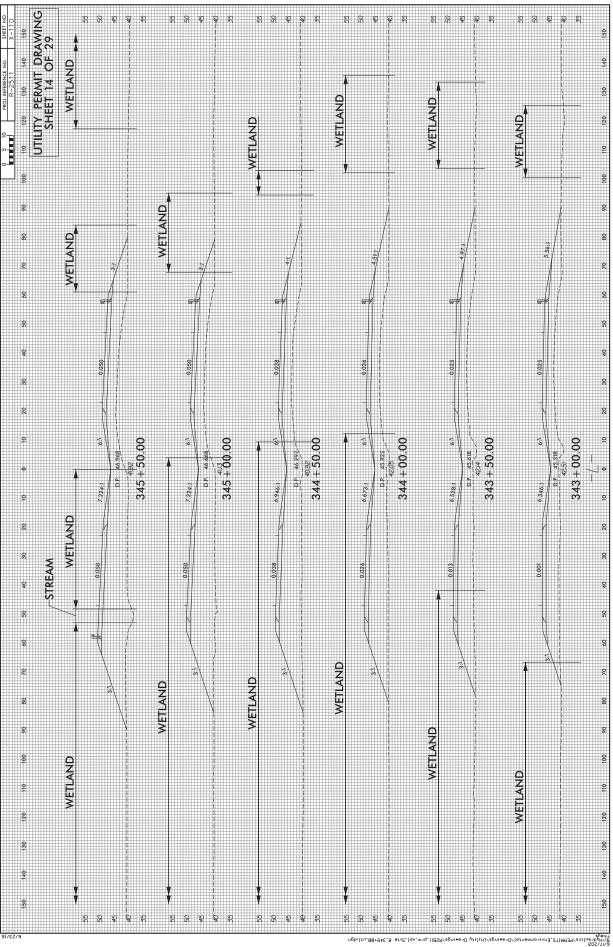


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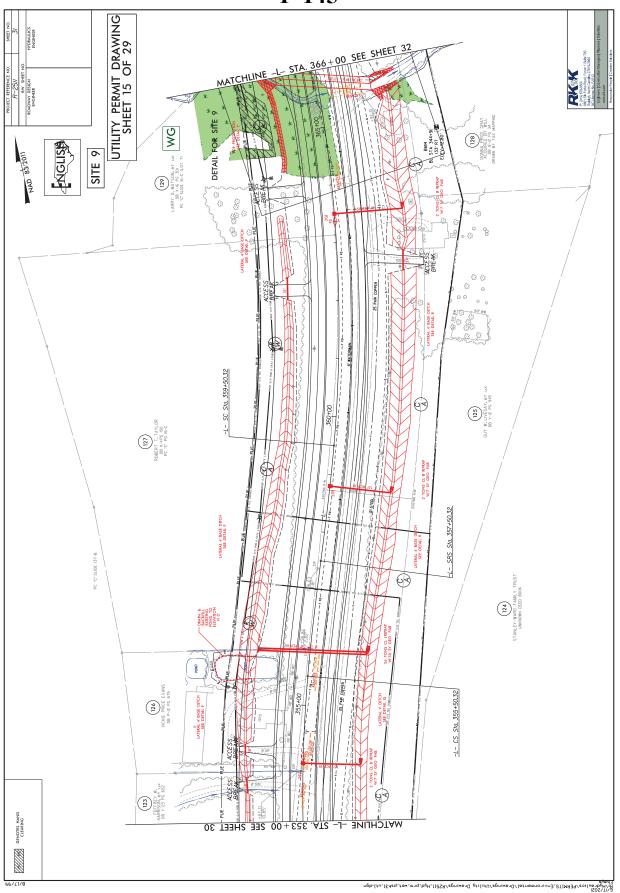


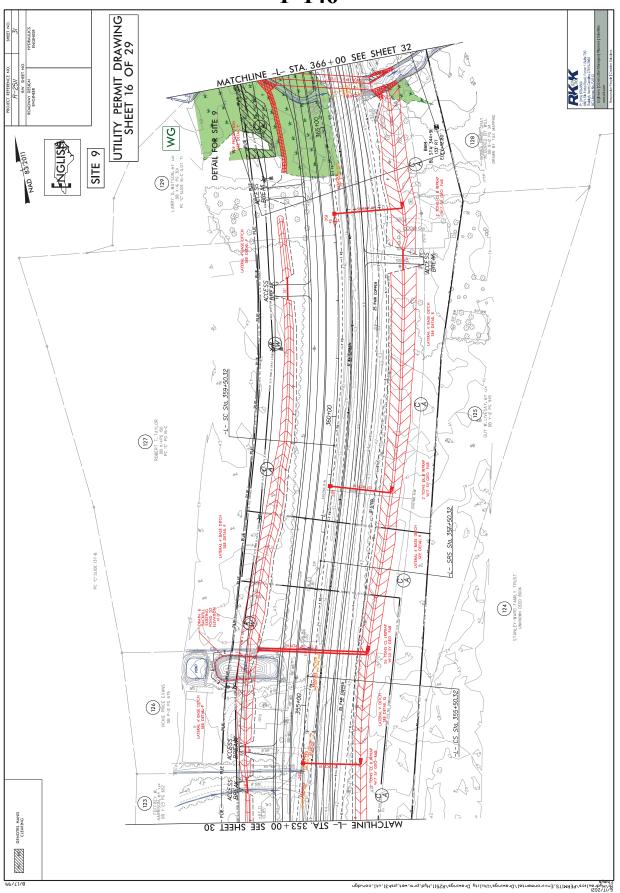
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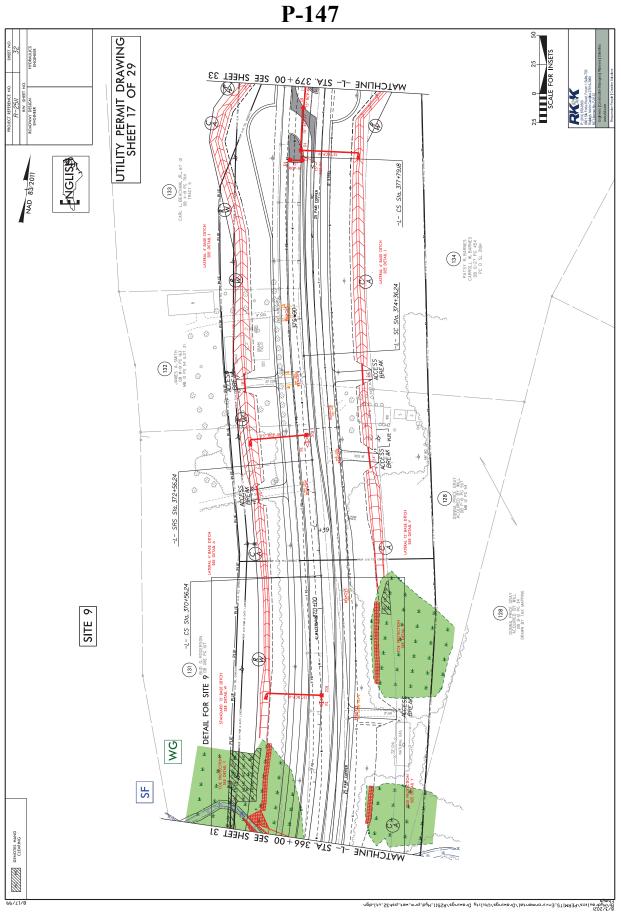


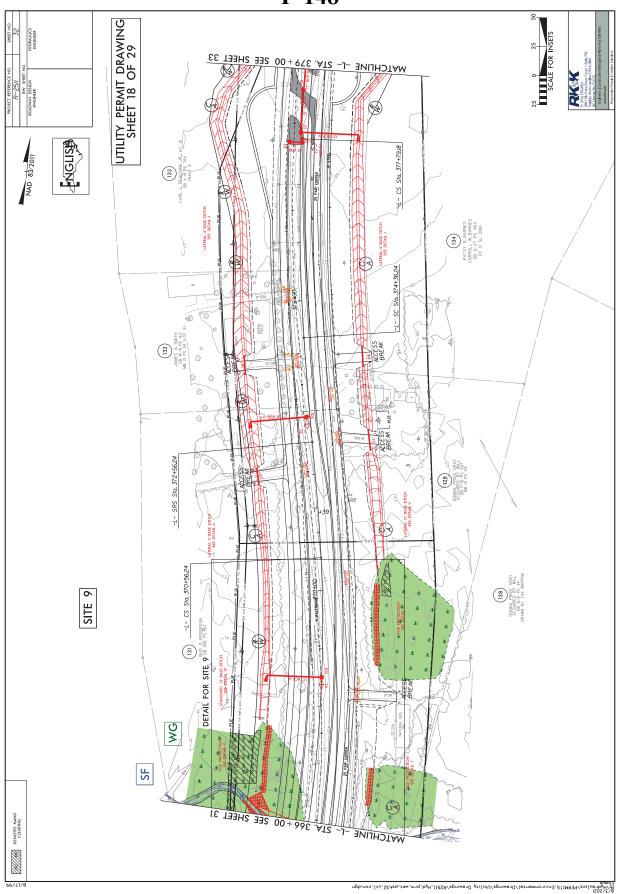
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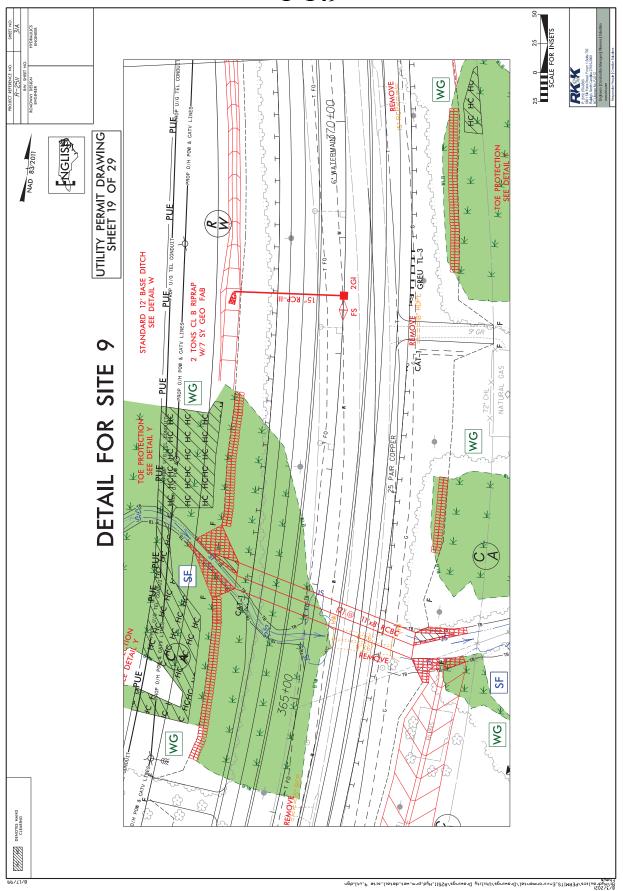
**P-144** 



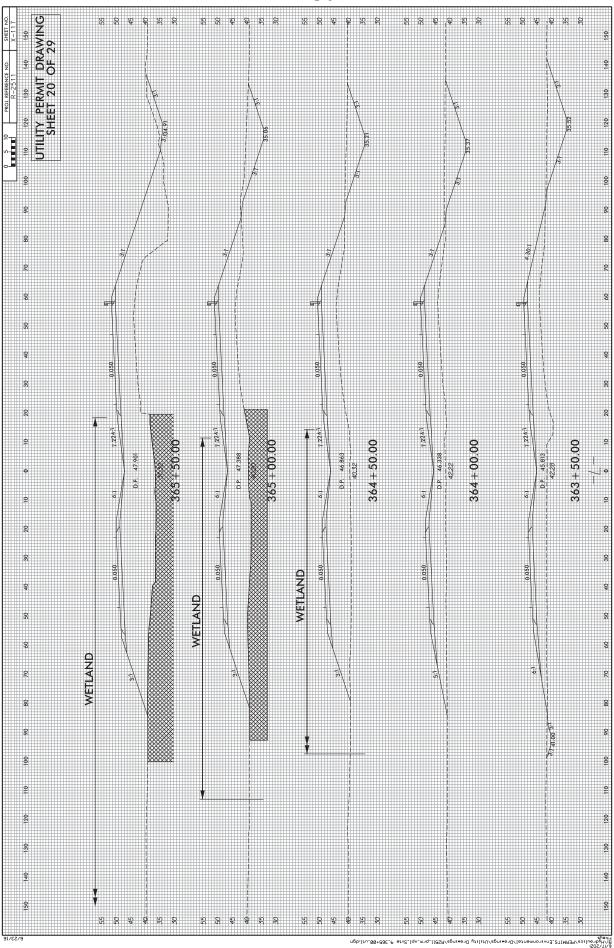








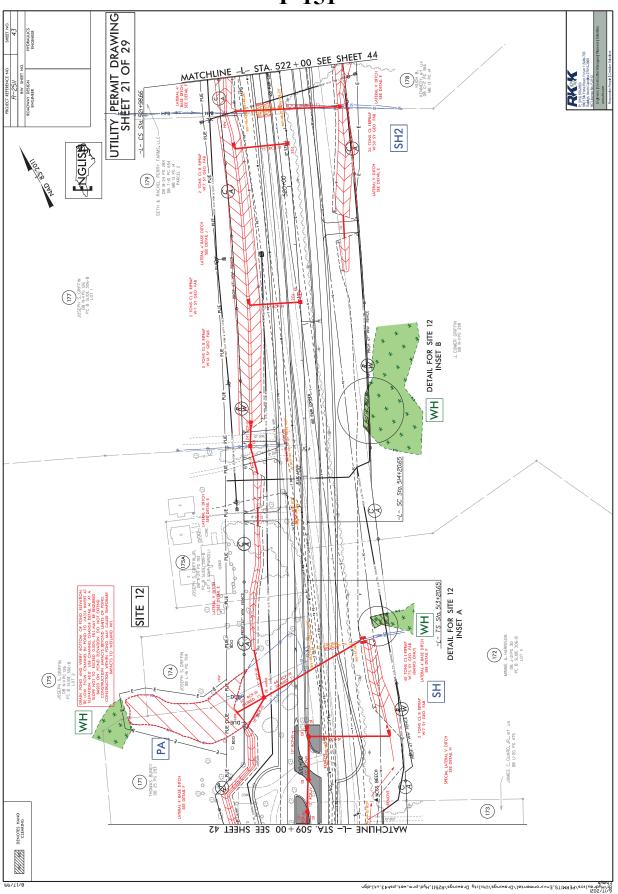
**P-149** 



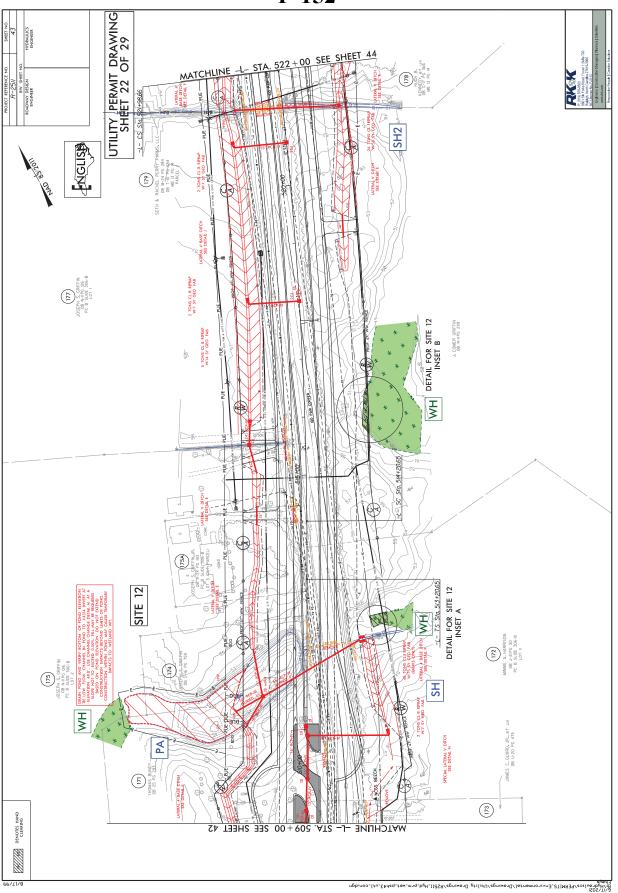
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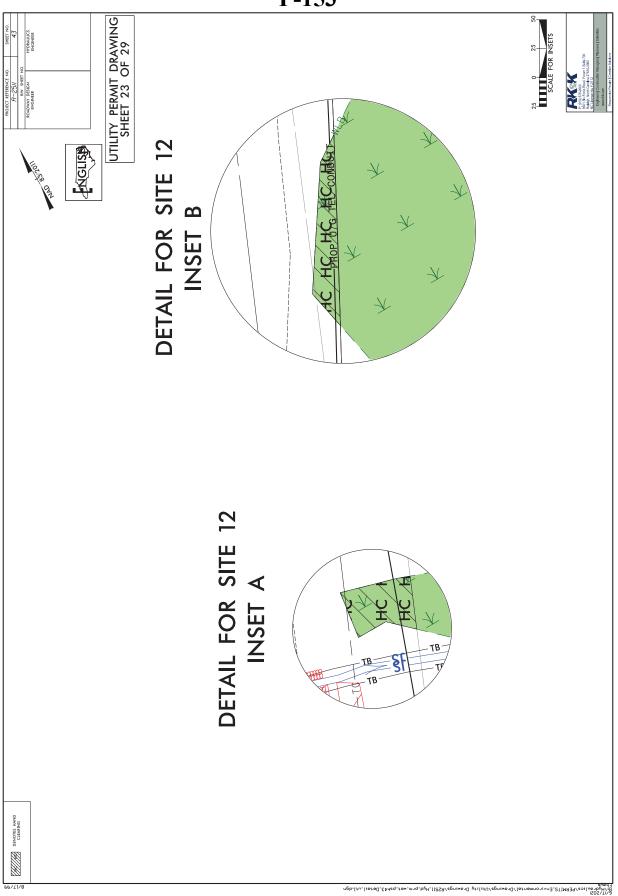
**P-150** 

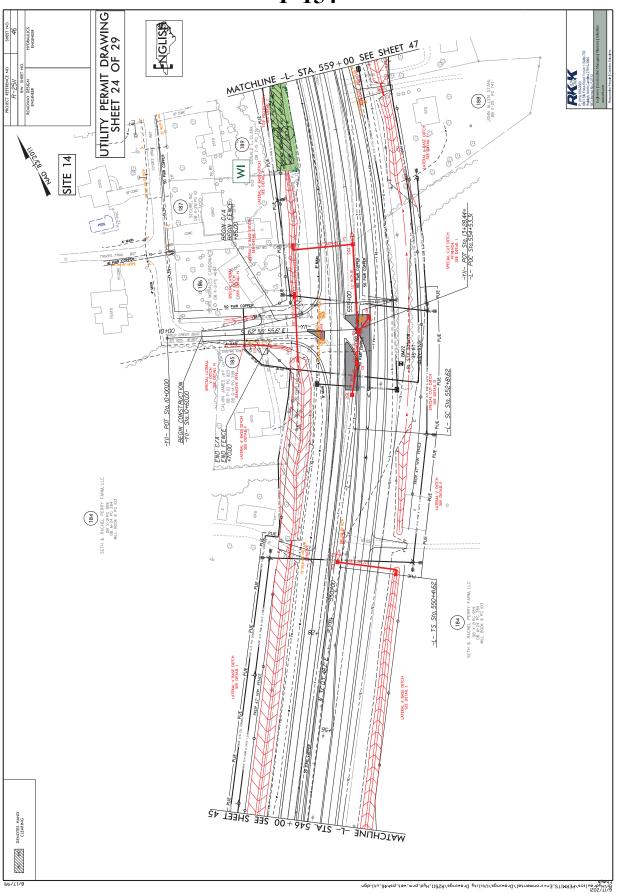
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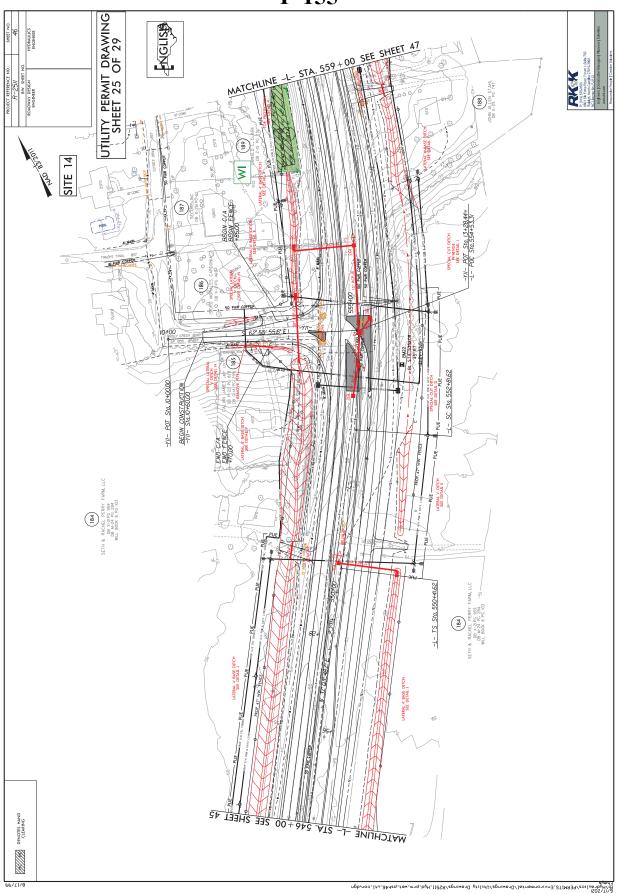


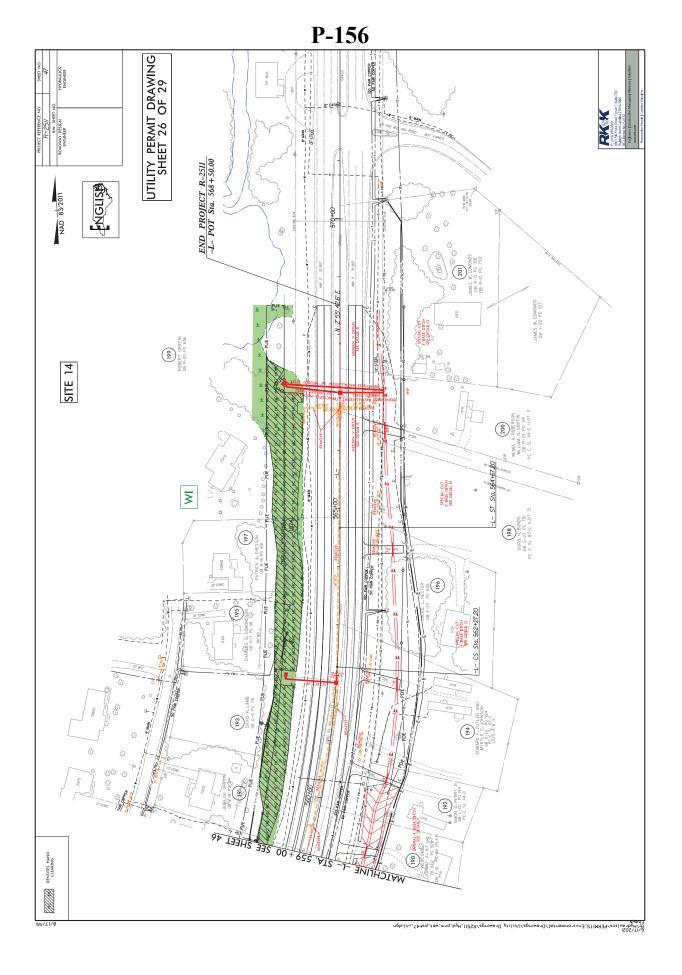
P-151



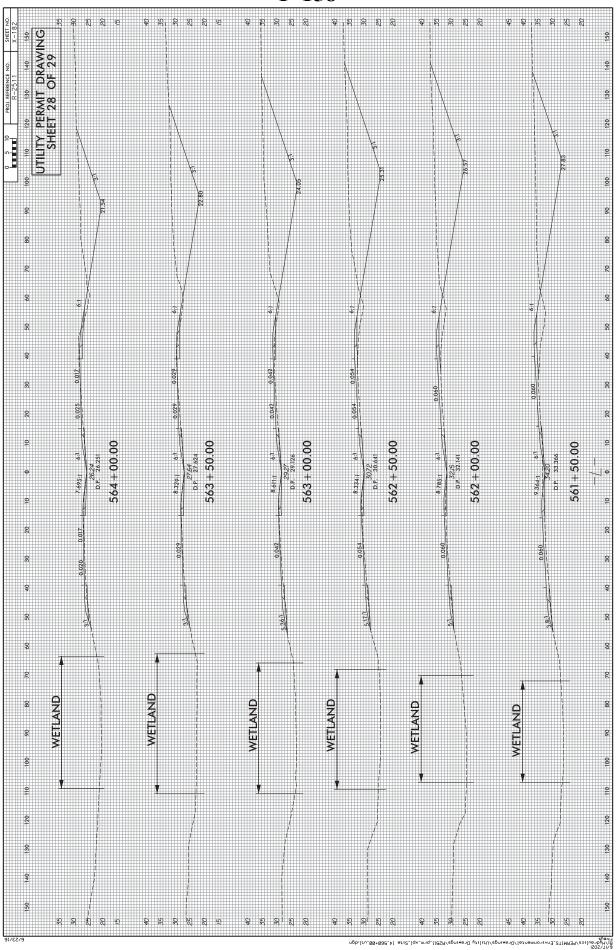








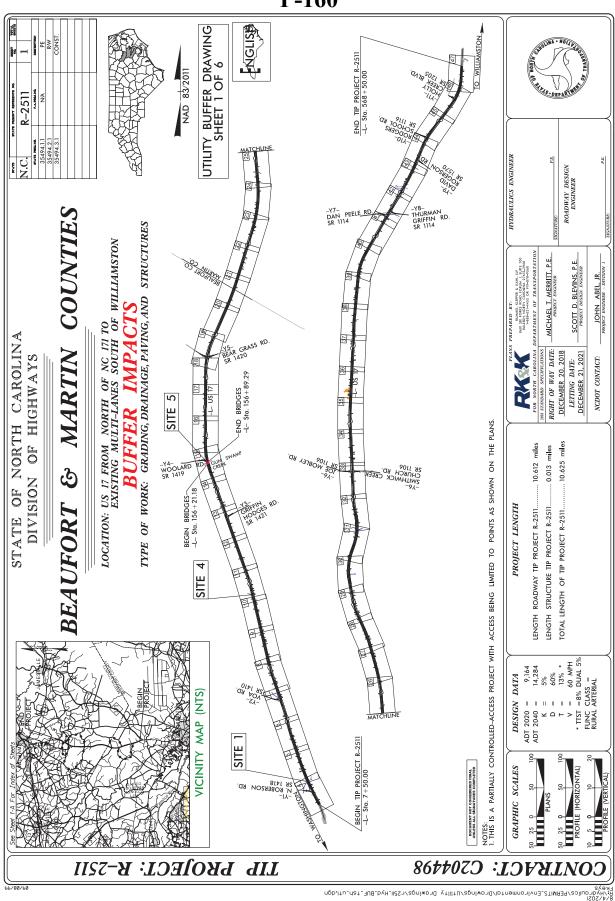




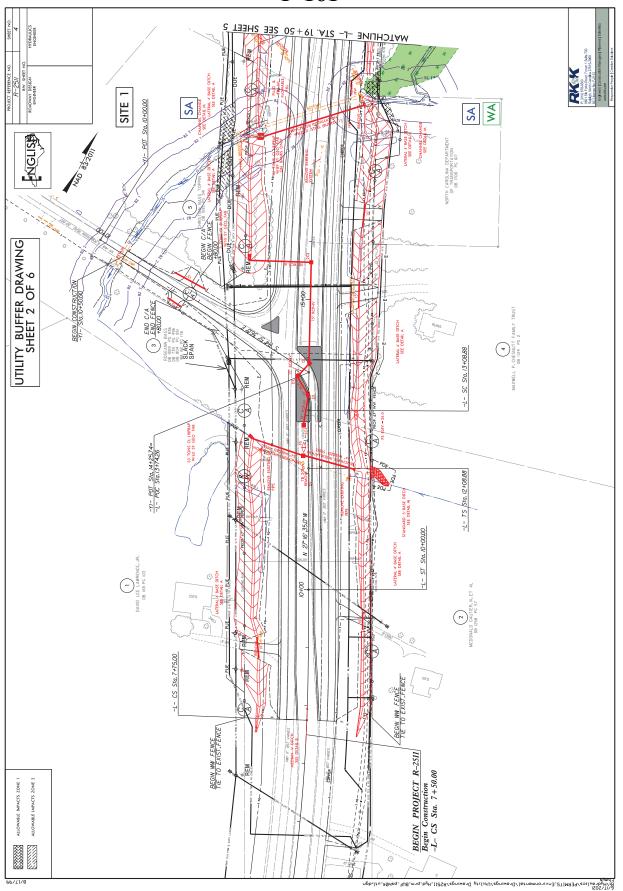


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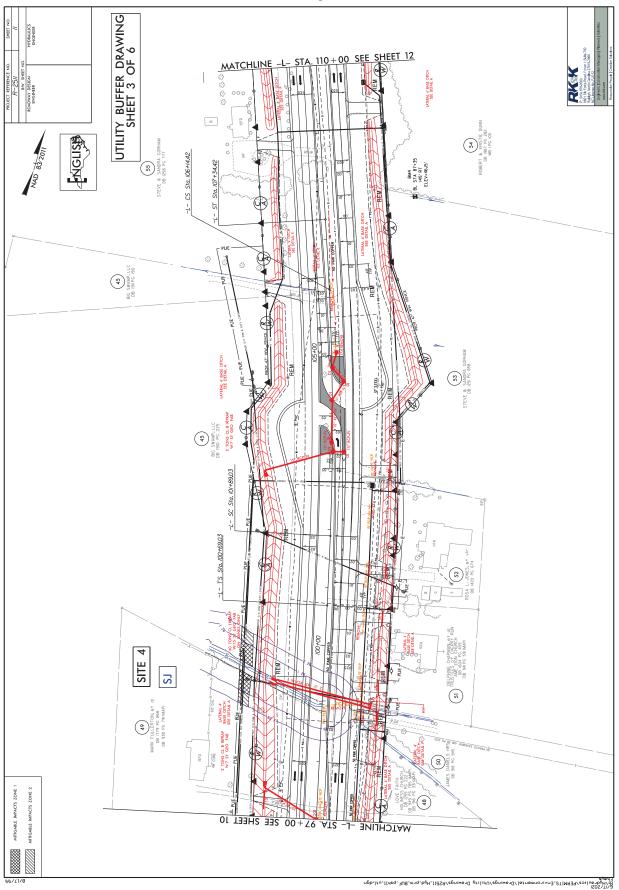
	ज	E	Ľ,				_														NC		
	Natural		Design (ft)																0		ORTATIC YS		VINTY
ACTS	Existing Channel	Impacts -	lemp. (ft)																0		TRANSP HIGHWA	021	ARTIN CC
VATER IMF	Existing Channel	Impacts	Permanent (ft)												T	T	T		0		NC DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	8/4/2021	BEAUFORT & MARTIN COUNTY
SURFACE WATER IMPACTS	Temp.		impacts (ac)																		NC DEP. I		BEA
(V)	Permanent	SW	impacts (ac)																	L			
ARY	Hand Clearing	.⊑ :	Wetlands (ac)	0.01	0.83	0.13	0.76	0.22	0.03	0.86									2.84				
CTS SUMM	Aechanized	Clearing	in Wetlands (ac)																				
WATER IMPACTS	Excavation Mechanized		Wetlands II (ac)																				
ACE WAT	Temp.		Wetlands (ac)																				
WETLAND AND SURACE WATER IMPACTS SUMMARY	Permanent		(ac)																				
WETLAN		Structure	Size / Type	UNDERGROUND TELEPHONE: WA	UNDERGROUND TELEPHONE, OVERHEAD POWER AND 8" WATER LINE: WC	UNDERGROUND FIBER AND OVERHEAD POWER: WE	UNDERGROUND TELEPHONE AND OVERHEAD POWER: WF	UNDERGROUND TELEPHONE AND OVERHEAD POWER: WG	UNDERGROUND TELEPHONE: WH	OVERHEAD POWER: WI										ll impacts			
		Station	(From/To)	-L- 17+47 TO 19+05	-L- 152+55 TO 160+01	-L- 279+93 TO 281+18 LT	-L- 342+10 TO 349+32	-L- 364+60 TO 370+42	-L- 512+24 TO 516+50 RT	-L- 557+45 TO 567+64 LT									LS*:	*Rounded totals are sum of actual impacts NOTES:			
		Site	No.	-	5	7	80	6	12	14									TOTALS*:	*Round NOTES:			



## **P-161**



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									r.	-1	0	4												
	BUFFER REPLACEMENT	ZONE 2 (ft <sup>2</sup> )															•	0	TATION			TES		9
	REPLA(	ZONE 1 (ft <sup>2</sup> )															•	0	NC DEDAPTMENT OF TDANSDORTATION	DIVISION OF HIGHWAYS	21	BEAUFORT & MARTIN COUNTIES		 OF
		тотаL (ft <sup>2</sup> )		2250	7887												10101	1013/	FNT OF T	ION OF HI	8/4/2021	T & MART	1102-X	5
	MITIGABLE	ZONE 2 (ft <sup>2</sup> )		874	3387												1001	4261	NFDARTM	DIVIS		BEAUFOR		SHEET
	2	ZONE 1 (ft <sup>2</sup> )		1376	4500													98/6	UN					
	ш	TOTAL (ft <sup>2</sup> )	4166														1100	4166						
<b>RY</b> MPACTS	ALLOWABLE	ZONE 2 (ft <sup>2</sup> )	1545														1	1545						
MARY	AL	ZONE 1 (ft <sup>2</sup> )	2621														1000	2621						
CTS SUM		PARALLEL IMPACT	×	×	×																			
ER IMPA	ТҮРЕ	BRIDGE																						
RIAN BUFFER IMPACTS SUMMARY		ROAD CROSSING																		jable Impacts				
RIPARI		Structure Size / Type	Underground Fiber & Telephone	Underground Telephone and 6" Water Line	Underground Telephone, Overhead Power and 8" Water Line															Total area, including utility impacts, has been taken into consideration for Allowable vs Mitigable Impacts				
		Station (From/To)	16+56 to 19+16	98+87 to 100+25 LT	155+92 to 157+64												ż			∋a, including utility impacts, h				
		Site No.	-	4	5													I U I ALS":	NOTES:	Total are				Revised 2018 Feb

		WETLAND	IN BU	WETLANDS IN BUFFER IMPACTS SUMMARY
		WETLA	WETLANDS IN	
SITE	STATION	BUF zone 1	BUFFERS zone 1 zone 2	
NO	(FROM/TO)	(fft <sup>2</sup> )	(ff <sup>2</sup> )	
-	18+58 to 19+04 RT	499	86	
5	155+92 to 157+64	4500	3387	
TOTAL:		4999	3485	
				NC DEPARTMENT OF TRANSPORTATION
				DIVISION OF HIGHWAYS 8/4/2021
				BEAUFORT & MARTIN COUNTIES
				35494.1.1
Revised 2018 Feb	ep			SHEET 6 OF 6

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Coun	county : Beaufort, Martin						
Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount	
		F	ROADWAY ITEMS				
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.		
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.		
0003	0000700000-N	SP	FIELD OFFICE	Lump Sum	L.S.		
0004	0001000000-E	200	CLEARING & GRUBBING ACRE(S)	Lump Sum	L.S.		
0005	0008000000-E	200	SUPPLEMENTARY CLEARING & GRUB- BING	3 ACR			
0006	0022000000-Е	225	UNCLASSIFIED EXCAVATION	70,350 CY			
0007	0028000000-N	SP	TYPE I STANDARD APPROACH FILL STATION ********* (156+55.00 -L- LT)	Lump Sum	L.S.		
0008	0028000000-N	SP	TYPE I STANDARD APPROACH FILL STATION ********* (156+55.00 -L- RT)	Lump Sum	L.S.		
0009	0036000000-E	225	UNDERCUT EXCAVATION	36,326 CY			
0010	0106000000-Е	230	BORROW EXCAVATION	1,557,620 CY			
0011	0127000000-N	235	EMBANKMENT SETTLEMENT GAUGES	10 EA			
0012	0134000000-Е	240	DRAINAGE DITCH EXCAVATION	143,430 CY			
0013	0156000000-Е	250	REMOVAL OF EXISTING ASPHALT PAVEMENT	42,440 SY			
0014	0177000000-Е	250	BREAKING OF EXISTING ASPHALT PAVEMENT	136,010 SY			
0015	0192000000-N	260	PROOF ROLLING	107 HR			
0016	0194000000-Е	265	SELECT GRANULAR MATERIAL, CLASS III	66,000 CY			
0017	0196000000-Е	270	GEOTEXTILE FOR SOIL STABILIZA- TION	75,400 SY			
0018	0199000000-Е	SP	TEMPORARY SHORING	10,003 SF			

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0019	0222000000-Е	SP	GEOTEXTILE FOR ROCK EMBANK- MENTS	500 SY		
0020	0318000000-E	300	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRUCTURES	5,770 TON		
0021	032000000-Е	300	FOUNDATION CONDITIONING GEO- TEXTILE	33,700 SY		
0022	0335200000-Е	305	15" DRAINAGE PIPE	1,076 LF		
0023	0335300000-Е	305	18" DRAINAGE PIPE	188 LF		
0024	0335400000-Е	305	24" DRAINAGE PIPE	324 LF		
0025	0335500000-Е	305	30" DRAINAGE PIPE	180 LF		
0026	0335600000-Е	305	36" DRAINAGE PIPE	44 LF		
0027	0335700000-Е	305	42" DRAINAGE PIPE	108 LF		
0028	0335800000-Е	305	48" DRAINAGE PIPE	28 LF		
0029	034200000-Е	310	**" SIDE DRAIN PIPE (30")	128 LF		
0030	0342000000-Е	310	**" SIDE DRAIN PIPE (36")	76 LF		
0031	034300000-Е	310	15" SIDE DRAIN PIPE	3,808 LF		
0032	0344000000-Е	310	18" SIDE DRAIN PIPE	1,652 LF		
0033	0345000000-Е	310	24" SIDE DRAIN PIPE	1,388 LF		
0034	0366000000-Е	310	15" RC PIPE CULVERTS, CLASS III	7,528 LF		
0035	037200000-Е	310	18" RC PIPE CULVERTS, CLASS III	364 LF		
0036	0378000000-Е	310	24" RC PIPE CULVERTS, CLASS III	636 LF		

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0037	0384000000-Е	310	30" RC PIPE CULVERTS, CLASS III	1,404 LF		
0038	0390000000-Е	310	36" RC PIPE CULVERTS, CLASS III	2,988 LF		
0039	0396000000-Е	310	42" RC PIPE CULVERTS, CLASS III	1,084 LF		
0040	0402000000-Е	310	48" RC PIPE CULVERTS, CLASS III	1,288 LF		
0041	0408000000-Е	310	54" RC PIPE CULVERTS, CLASS III	352 LF		
0042	0420000000-Е	310	66" RC PIPE CULVERTS, CLASS III	848 LF		
0043	0448000000-E	310	****" RC PIPE CULVERTS, CLASS IV (66")	180 LF		
0044	0448200000-Е	310	15" RC PIPE CULVERTS, CLASS IV	5,676 LF		
0045	0448300000-Е	310	18" RC PIPE CULVERTS, CLASS IV	180 LF		
0046	0448500000-Е	310	30" RC PIPE CULVERTS, CLASS IV	276 LF		
0047	0448600000-Е	310	36" RC PIPE CULVERTS, CLASS IV	 188 LF		
0048	0973100000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B IN SOIL (36", 0.500")	166 LF		
0049	0973100000-E		**" WELDED STEEL PIPE, ****" THICK, GRADE B IN SOIL (54", 0.750")	92 LF		
0050	0973100000-E		**" WELDED STEEL PIPE, ****" THICK, GRADE B IN SOIL (66", 0.875")	92 LF		
0051	0973300000-E		**" WELDED STEEL PIPE, ****" THICK, GRADE B NOT IN SOIL (36", 0.500")	166 LF		
0052	0973300000-Е	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B NOT IN SOIL (54", 0.750")	92 LF		

Coun	ty : Beaufort, Martin	1				
Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0050	0072200000 F	220		00		
0053	0973300000-Е	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B NOT IN SOIL (66", 0.875")	92 LF		
0054	0986000000-E	SP	GENERIC PIPE ITEM 15" CS SLOTTED DRAIN, 0.064" THICK	80 LF		
0055	0995000000-Е	340	PIPE REMOVAL	11,593 LF		
0056	1011000000-N	500	FINE GRADING	Lump Sum		
0057	1077000000-Е	SP	#57 STONE	1,030 TON		
0058	1099500000-Е	505	SHALLOW UNDERCUT	1,500 CY		
0059	1099700000-Е	505	CLASS IV SUBGRADE STABILIZA- TION	2,860 TON		
0060	1111000000-Е	SP	CLASS IV AGGREGATE STABILIZA- TION	1,000 TON		
0061	1121000000-Е	520	AGGREGATE BASE COURSE	199,600 TON		
	122000000-Е		INCIDENTAL STONE BASE	3,000 TON		
	1275000000-Е		PRIME COAT	462 GAL		
0064	133000000-Е	607	INCIDENTAL MILLING	1,450 SY		
0065	149100000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	7,170 TON		
0066	150300000-Е	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C	97,560 TON		
0067	151900000-Е	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	2,310 TON		
0068	1523000000-Е	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	81,600 TON		
0069	1575000000-Е	620	ASPHALT BINDER FOR PLANT MIX	10,055 TON		
0070	1693000000-Е	654	ASPHALT PLANT MIX, PAVEMENT REPAIR	750 TON		

Quantity

Unit Cost

Line Item Number

#

County : Beaufort, Martin

Sec Description

#

0071	1840000000-E	665	MILLED RUMBLE STRIPS (ASPHALT CONCRETE)	212,640 LF	
0072	2022000000-Е	815	SUBDRAIN EXCAVATION	1,344 CY	
0073	2026000000-Е	815	GEOTEXTILE FOR SUBSURFACE DRAINS	4,000 SY	
0074	2036000000-Е	815	SUBDRAIN COARSE AGGREGATE	672 CY	
0075	2044000000-Е	815	6" PERFORATED SUBDRAIN PIPE	4,000 LF	
0076	2070000000-N	815	SUBDRAIN PIPE OUTLET	8 EA	
0077	2077000000-Е	815	6" OUTLET PIPE	48 LF	
0078	220900000-Е	838	ENDWALLS	113 CY	
0079	222000000-Е	838	REINFORCED ENDWALLS	38.8 CY	
0080	2253000000-Е	840	PIPE COLLARS	2.701 CY	
0081	2264000000-Е	840	PIPE PLUGS	0.029 CY	
0082	2275000000-Е	SP	FLOWABLE FILL	197 CY	
0083	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	227 EA	
0084	2297000000-Е	840	MASONRY DRAINAGE STRUCTURES	37.35 CY	
0085	230800000-Е	840	MASONRY DRAINAGE STRUCTURES	22.26 LF	
0086	2364000000-N	840	FRAME WITH TWO GRATES, STD 840.16	96 EA	
0087	2364200000-N	840	FRAME WITH TWO GRATES, STD 840.20	5 EA	
0088	2365000000-N	840	FRAME WITH TWO GRATES, STD 840.22	122 EA	
0089	2396000000-N	840	FRAME WITH COVER, STD 840.54	1 EA	

Amount

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0090	2451000000-N	852	CONCRETE TRANSITIONAL SECTION FOR DROP INLET	93 EA		
0091	2556000000-Е	846	SHOULDER BERM GUTTER	194 LF		
0092	2612000000-Е	848	6" CONCRETE DRIVEWAY	430 SY		
0093	2655000000-Е	852	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN)	10,470 SY		
0094	303000000-Е	862	STEEL BEAM GUARDRAIL	3,637.5 LF		
0095	3045000000-Е	862	STEEL BEAM GUARDRAIL, SHOP CURVED	150 LF		
0096	3195000000-N	862	GUARDRAIL END UNITS, TYPE AT-1	3 EA		
0097	3210000000-N	862	GUARDRAIL END UNITS, TYPE CAT-1	9 EA		
0098	3287000000-N	SP	GUARDRAIL END UNITS, TYPE TL-3	11 EA		
0099	3288000000-N	SP	GUARDRAIL END UNITS, TYPE TL-2	1 EA		
0100	3317000000-N	SP	GUARDRAIL ANCHOR UNITS, TYPE B-77	4 EA		
0101	336000000-Е	863	REMOVE EXISTING GUARDRAIL	590 LF		
0102	338000000-Е	862	TEMPORARY STEEL BEAM GUARDRAIL	3,025 LF		
0103	3387000000-N	SP	TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE ********* (B-77)	3 EA		
0104	3389150000-N	SP	TEMPORARY GUARDRAIL END UNITS, TYPE ***** (TL-3)	11 EA		
0105	350300000-Е	866	WOVEN WIRE FENCE, 47" FABRIC	96,111 LF		
0106	3509000000-Е	866	4" TIMBER FENCE POSTS, 7'-6" LONG	5,919 EA		
0107	351500000-Е	866	5" TIMBER FENCE POSTS, 8'-0" LONG	1,645 EA		

Line	Item Number	Sec	Description	Quantity	Unit Cost	Amount
#		#	-			

0108	362800000-Е	876	RIP RAP, CLASS I	900 TON
0109	3635000000-Е	876	RIP RAP, CLASS II	2,160 TON
0110	3642000000-Е	876	RIP RAP, CLASS A	500 TON
0111	3649000000-Е	876	RIP RAP, CLASS B	1,500 TON
0112	3656000000-Е	876	GEOTEXTILE FOR DRAINAGE	10,100 SY
0113	4072000000-Е	903	SUPPORTS, 3-LB STEEL U-CHANNEL	206 LF
0114	4082000000-E	903	SUPPORTS, WOOD	3,868 LF
0115	4096000000-N	904	SIGN ERECTION, TYPE D	16 EA
0116	4102000000-N	904	SIGN ERECTION, TYPE E	149 EA
0117	4108000000-N	904	SIGN ERECTION, TYPE F	54 EA
0118	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (D)	3 EA
0119	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (E)	3 EA
0120	4141000000-N	907	DISPOSAL OF SUPPORT, WOOD	6 EA
0121	4158000000-N	907	DISPOSAL OF SIGN SYSTEM, WOOD	91 EA
0122	440000000-Е	1110	WORK ZONE SIGNS (STATIONARY)	4,689 SF
0123	4405000000-Е	1110	WORK ZONE SIGNS (PORTABLE)	472 SF
0124	4410000000-Е	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	730 SF
0125	4415000000-N	1115	FLASHING ARROW BOARD	4 EA
0126	4420000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN	3 EA

Line	Item Number Sec	Description	Quantity	Unit Cost	Amount
#	#				

0127	4430000000-N	1130	DRUMS	1,035 EA
0128	4435000000-N		CONES	242 EA
0129	4445000000-Е		BARRICADES (TYPE III)	520 LF
0130	4455000000-N	1150	FLAGGER	2,400 DAY
0131	4465000000-N	1160	TEMPORARY CRASH CUSHIONS	14 EA
0132	4470000000-N	1160	REMOVE & RESET TEMPORARY CRASH CUSHION	29 EA
0133	4480000000-N	1165	ТМА	2 EA
0134	4485000000-Е	1170	PORTABLE CONCRETE BARRIER	4,360 LF
0135	449000000-Е	1170	PORTABLE CONCRETE BARRIER (ANCHORED)	900 LF
0136	450000000-Е	1170	REMOVE AND RESET PORTABLE CON- CRETE BARRIER	10,520 LF
0137	4510000000-N	1190	LAW ENFORCEMENT	100 HR
0138	4516000000-N	1180	SKINNY DRUM	32 EA
0139	4650000000-N	1251	TEMPORARY RAISED PAVEMENT MARKERS	2,581 EA
0140	4685000000-Е	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	14,115 LF
0141	4688000000-Е	1205	THERMOPLASTIC PAVEMENT MARKING LINES (6", 90 MILS)	266,469 LF
0142	4695000000-Е	1205	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	115 LF
0143	470000000-Е	1205	THERMOPLASTIC PAVEMENT MARKING LINES (12", 90 MILS)	24,424 LF
0144	4725000000-Е	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	148 EA

County :	Beaufort, I	Martin
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 0146 4	4775000000-E				
 0146 4	4775000000-Е				
		1205	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (6") (IV)	720 LF	
0147 4	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	67,716 LF	 
	4815000000-Е	1205	PAINT PAVEMENT MARKING LINES (6")	1,285,211 LF	 
0148 4	4825000000-Е	1205	PAINT PAVEMENT MARKING LINES (12")	51,058 LF	 
0149 4	4835000000-Е	1205	PAINT PAVEMENT MARKING LINES (24")	2,466 LF	 
0150 4	4845000000-N	1205	PAINT PAVEMENT MARKING SYMBOL	330 EA	 
0151 4	4850000000-Е	1205	REMOVAL OF PAVEMENT MARKING LINES (4")	9,636 LF	
0152 4	4855000000-Е	1205	REMOVAL OF PAVEMENT MARKING LINES (6")	233,098 LF	 
0153 4	4865000000-Е	1205	REMOVAL OF PAVEMENT MARKING LINES (12")	918 LF	 
0154 4	4870000000-Е	1205	REMOVAL OF PAVEMENT MARKING LINES (24")	277 LF	 
 0155 4	4875000000-N	1205	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS	19 EA	 
0156 4	489000000-Е	SP	GENERIC PAVEMENT MARKING ITEM POLYUREA PAVEMENT MARKING LINES, 6", 20 MILS (STANDARD GLASS BEADS)	495 LF	 
0157 4	4891000000-E	1205	GENERIC PAVEMENT MARKING ITEM THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MLS)	270 LF	 
0158 4	4895000000-N	SP	GENERIC PAVEMENT MARKING ITEM NON-CAST IRON SNOWPLOWABLE PAVEMENT MARKER	3,587 EA	 
0159 4	4900000000-N	1251	PERMANENT RAISED PAVEMENT MARKERS	5 EA	 
0160 5	5325300000-Е	1510	3" WATER LINE	2,700 LF	 

Line	Item Number Sec	Description	Quantity	Unit Cost	Amount
#	#				

0161	5325400000-Е	1510	4" WATER LINE	89 LF	
0162	5325600000-Е	1510	6" WATER LINE	47,521 LF	
0163	5325800000-Е	1510	8" WATER LINE	4,152 LF	
0164	532600000-Е	1510	10" WATER LINE	4,745 LF	
0165	5329000000-Е	1510	DUCTILE IRON WATER PIPE FITTINGS	22,179 LB	
0166	5534000000-Е	1515	**" VALVE (3")	5 EA	
0167	5540000000-Е	1515	6" VALVE	47 EA	
0168	5546000000-Е	1515		4 EA	
0169	555200000-Е	1515		2 EA	
0170	5571400000-E	1515	4" TAPPING SLEEVE & VALVE	1 EA	
0171	5571600000-E	1515	6" TAPPING SLEEVE & VALVE	3 EA	
0172	5571800000-E	1515	8" TAPPING SLEEVE & VALVE	1 EA	
0173	557200000-Е	1515	10" TAPPING SLEEVE & VALVE	2 EA	
0174	5643100000-Е	1515	3/4" WATER METER	35 EA	
0175	5648000000-N	1515	RELOCATE WATER METER	41 EA	
0176	5666000000-N	1515	FIRE HYDRANT	12 EA	
0177	5673000000-E	1515	FIRE HYDRANT LEG	202 LF	
0178	5686500000-E	1515	WATER SERVICE LINE	6,765 LF	
0179	579800000-Е	1530	ABANDON **" UTILITY PIPE (3")	3,125 LF	
0180	579800000-Е	1530	ABANDON **" UTILITY PIPE (4")	105 LF	

Line	Item Number Sec	Description	Quantity	Unit Cost	Amount
#	#		-		

0181	580000000-Е	1530	ABANDON 6" UTILITY PIPE	44,233 LF	
0182	5801000000-Е	1530	ABANDON 8" UTILITY PIPE	3,402 LF	
0183	5802000000-Е	1530	ABANDON 10" UTILITY PIPE	4,391 LF	
0184	5815000000-N	1530	REMOVE WATER METER	35 EA	
0185	5815500000-N	1530	REMOVE FIRE HYDRANT	5 EA	
0186	5835000000-Е	1540	**" ENCASEMENT PIPE (14")	726 LF	
0187	5835000000-Е	1540	**" ENCASEMENT PIPE (8")	500 LF	
0188	5835700000-Е	1540	16" ENCASEMENT PIPE	562 LF	
0189	5835900000-Е	1540	20" ENCASEMENT PIPE	333 LF	
0190	5872500000-Е	1550	BORE AND JACK OF **" (16")	562 LF	
0191	5872500000-Е	1550	BORE AND JACK OF **" (20")	333 LF	
0192	5872600000-Е	1550	DIRECTIONAL DRILLING OF **" (6")	1,766 LF	
0193	5882000000-N	SP	GENERIC UTILITY ITEM 2" POST HYDRANT	2 EA	
0194	5882000000-N	SP	GENERIC UTILITY ITEM WATER MAIN MARKER	22 EA	
0195	5882000000-N	SP	GENERIC UTILITY ITEM WATER VALVE MARKER	36 EA	
0196	600000000-Е	1605	TEMPORARY SILT FENCE	292,695 LF	
0197	6006000000-Е	1610	STONE FOR EROSION CONTROL, CLASS A	4,715 TON	
0198	6009000000-Е	1610	STONE FOR EROSION CONTROL, CLASS B	49,875 TON	

#### ITEMIZED PROPOSAL FOR CONTRACT NO. C204498

Apr 04, 2022 10:10 am

County : Beaufort, Martin Line Item Number Sec Description Unit Cost Quantity Amount # #

0199	6012000000-Е	1610	SEDIMENT CONTROL STONE	17,575 TON	
0200	6015000000-Е	1615	TEMPORARY MULCHING	378 ACR	
0201	6018000000-Е	1620	SEED FOR TEMPORARY SEEDING	14,300 LB	
0202	6021000000-Е	1620	FERTILIZER FOR TEMPORARY SEED- ING	73 TON	
0203	6024000000-Е	1622	TEMPORARY SLOPE DRAINS	6,060 LF	
0204	6029000000-Е		SAFETY FENCE	6,700 LF	
0205			SILT EXCAVATION	39,270 CY	
0206	6036000000-Е	1631	MATTING FOR EROSION CONTROL	252,745 SY	
0207	6037000000-Е	SP	COIR FIBER MAT	2,010 SY	
0208	6038000000-Е	SP	PERMANENT SOIL REINFORCEMENT MAT	900 SY	
0209	6042000000-Е	1632	1/4" HARDWARE CLOTH	6,520 LF	
0210	6043000000-Е	SP	LOW PERMEABILITY GEOTEXTILE	1,430 SY	
0211	6045000000-Е	SP	**" TEMPORARY PIPE (15")	242 LF	
0212	6045000000-Е	SP	**" TEMPORARY PIPE (24")	810 LF	
0213	6045000000-Е	SP	**" TEMPORARY PIPE (36")	130 LF	
0214	6045000000-Е	SP	**" TEMPORARY PIPE (42")	420 LF	
0215	6045000000-Е	SP	**" TEMPORARY PIPE (48")	670 LF	
0216	6048000000-Е	SP	FLOATING TURBIDITY CURTAIN	90 SY	
0217	6069000000-Е	1638	STILLING BASINS	290 2Y	

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Line Item Number Sec Description Quantity Unit Cost # #	Amount
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0218	6070000000-N	1639	SPECIAL STILLING BASINS	5 EA
0219	6071012000-Е	SP	COIR FIBER WATTLE	22,080 LF
0220	6071014000-Е	SP	COIR FIBER WATTLE BARRIER	7,687 LF
0221	6071020000-Е	SP	POLYACRYLAMIDE (PAM)	32,735 LB
0222	6071030000-E	1640	COIR FIBER BAFFLE	7,675 LF
0223	6071050000-E	SP	**" SKIMMER (1-1/2")	52 EA
0224	6071050000-Е	SP	**" SKIMMER (2")	9 EA
0225	6071050000-Е	SP	**" SKIMMER (2-1/2")	4 EA
0226	6071050000-Е	SP	**" SKIMMER (3")	1 EA
0227	6071050000-Е	SP	**" SKIMMER (4")	1 EA
0228	6084000000-Е	1660	SEEDING & MULCHING	249 ACR
0229	6087000000-Е	1660	MOWING	288 ACR
0230	609000000-Е	1661	SEED FOR REPAIR SEEDING	3,800 LB
0231	6093000000-Е	1661	FERTILIZER FOR REPAIR SEEDING	12 TON
0232	6096000000-Е	1662	SEED FOR SUPPLEMENTAL SEEDING	6,100 LB
0233	6108000000-Е	1665	FERTILIZER TOPDRESSING	183 TON
0234	6111000000-Е	SP	IMPERVIOUS DIKE	355 LF
0235	6114500000-N	1667	SPECIALIZED HAND MOWING	10 MHR
0236	6117000000-N	SP	RESPONSE FOR EROSION CONTROL	150 EA

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County :	Beaufort, Martin	

Line	Item Number	Sec	Description	Quantity	Unit Cost	Amount
#		#				

0237	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	15 EA
0238	6120000000-Е	SP	CULVERT DIVERSION CHANNEL	181 CY
0239	6123000000-Е	1670	REFORESTATION	0.1 ACR
0240	730000000-Е	1715	UNPAVED TRENCHING (*********) (2")	110 LF
0241	730100000-Е	1715	DIRECTIONAL DRILL (*********) (2")	90 LF
0242	7324000000-N	1716	JUNCTION BOX (STANDARD SIZE)	3 EA
0243	7980000000-N	SP	GENERIC SIGNAL ITEM 5/8" X 10' GROUNDING ELEC- TRODE	4 EA
0244	7980000000-N	SP	GENERIC SIGNAL ITEM DMS ACCESS LADDER	1 EA
0245	7980000000-N	SP	GENERIC SIGNAL ITEM DMS PEDESTAL STRUCTURE	1 EA
0246	7980000000-N	SP	GENERIC SIGNAL ITEM DYNAMIC MESSAGE SIGN (TYPE-2C)	2 EA
0247	7980000000-N	SP	GENERIC SIGNAL ITEM EQIPMENT CABINET DISCONNECT	1 EA
0248	7980000000-N	SP	GENERIC SIGNAL ITEM METER BASE/DISCONNECT COMBINA- TION PANEL	1 EA
0249	7980000000-N	SP	GENERIC SIGNAL ITEM WOOD PEDESTAL	1 EA
0250	7990000000-E	SP	GENERIC SIGNAL ITEM #4 SOLID BARE COPPER GROUNDING CONDUCTOR	40 LF
0251	7990000000-Е	SP	GENERIC SIGNAL ITEM 3-WIRE COPPER SERVICE ENTRANCE CONDUCTORS	30 LF
0252	7990000000-Е	SP	GENERIC SIGNAL ITEM 4-WIRE COPPER FEEDER CONDUC- TORS	220 LF

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amoun
0253	7992000000-E	SP	GENERIC SIGNAL ITEM OVERHEAD FOOTINGS	10 CY		
		(	CULVERT ITEMS			
0254	8126000000-N	414	CULVERT EXCAVATION, STA ****** (345+79.00 -L-)	Lump Sum	L.S.	
 0255	8126000000-N	414	CULVERT EXCAVATION, STA ****** (365+81.00 -L-)	Lump Sum	L.S.	
0256	8126000000-N	414	CULVERT EXCAVATION, STA ***** (69+25.50 -L-)	Lump Sum	L.S.	
 0257	8133000000-Е	8133000000-E 414 FOUNDATION CONDITIONING MATER- IAL, BOX CULVERT		980 TON		
 0258	8196000000-E	420	CLASS A CONCRETE (CULVERT)	873.5 CY		
0259	8245000000-Е	425	REINFORCING STEEL (CULVERT)	114,362 LB		
0277	805600000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ************************************	Lump Sum	L.S.	
0278	8056000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION *********** (315+50 -L)	Lump Sum	L.S.	
0279	8056000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ********** (345+79.00 -L-)	Lump Sum	L.S.	
0280	8056000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ********** (365+81.00 -L-)	Lump Sum	L.S.	
		S	STRUCTURE ITEMS			
0260	803500000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION *********** (156+55.00 -L- RT)	Lump Sum	L.S.	

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Apr 04, 2022 10:10 am County : Beaufort, Martin				Page 16 of 16		
Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amour
0261	8065000000-N	SP	ASBESTOS ASSESSMENT	Lump Sum	L.S.	
0262	8112730000-N	450	PDA TESTING	2 EA		
0263	8121000000-N	412	UNCLASSIFIED STRUCTURE EXCAVA- TION AT STATION ******** (156+55.00 -L- RT)	UNCLASSIFIED STRUCTURE EXCAVA- Lump Sum L.S. TION AT STATION *******		
0264	8147000000-Е	420	REINFORCED CONCRETE DECK SLAB	4,616 SF		
0265	8161000000-E	420	GROOVING BRIDGE FLOORS	7,147 SF		
0266	8182000000-E	420	CLASS A CONCRETE (BRIDGE)	184.8 CY		
0267	8210000000-N	422	BRIDGE APPROACH SLABS, STATION ************************************	Lump Sum	L.S.	
0268	8210000000-N	422	BRIDGE APPROACH SLABS, STATION ************************************	Lump Sum	L.S.	
0269	8217000000-Е	425	REINFORCING STEEL (BRIDGE)	23,590 LB		
0270	8259000000-E	430	36" PRESTRESSED CONCRETE GIR- DERS	577.79 LF		
0271	8328200000-E	450	PILE DRIVING EQUIPMENT SETUP FOR *** STEEL PILES (HP 12 X 53)	24 EA		
0272	8364000000-Е	450	HP12X53 STEEL PILES	1,920 LF		
0273	8393000000-N	450	PILE REDRIVES	12 EA		
0274	8503000000-E	460	CONCRETE BARRIER RAIL	233.2 LF		
0275	8657000000-N	430	ELASTOMERIC BEARINGS	Lump Sum	L.S.	
0276	8892000000-E	SP	GENERIC STRUCTURE ITEM 18" GALVANIZED STEEL SHEET PILES	14,202 SF		

## Vendor 1 of 4: BRANCH CIVIL INC (3697) Call Order 001 (Proposal: C204498)

### **Bid Information**

Proposal County: BEAUFORT MARTIN
Vendor Address:
Signature Check: Michael Andrew Colbert
Time Bid Received: April 19, 2022 01:21 PM
Amendment Count: 1

#### **Bidding Errors:**

None.

 Bid Checksum:
 C9132F83EA

 Bid Total:
 \$86,385,000.00

 Items Total:
 \$86,385,000.00

 Time Total:
 \$0.00

### DBE Goal: 7.0% (\$6,046,950.00) Participation Submitted 7.15% (\$6,176,785.61)

## Vendor 1 of 4: BRANCH CIVIL INC (3697) Call Order 001 (Proposal: C204498)

### **Bid Bond Information**

Projects:	Bond Maximum:
Counties:	State of Incorporation:
Bond ID: SNC04116637	Agency Execution Date: 04/11/2022 05
Paid by Check: No	Surety Name: Surety2000
Bond Percent: 5%	Bond Agency Name: CHUBB Surety

#### DBE Load Information

Letting ID: L220419 Letting Date: 04/19/2022 Call Order: 001 Contract ID: C204498 Project: STATE FUNDEDSTATE FUNDEDSTATE FUNDED Bid Total: \$86,385,000.00 DBE Goal: 7.00% (\$6,046,950.00)

Vendor ID: 3697 Vendor Name: Branch Civil, Inc. DBE Entered: 7.15% (\$6,176,785.61)

Vendor ID	DBE Name	Is Supplier?	City/State	Goods/Service	Amount
12278	CLIFTON CONSTRUCTION CO INC	False	1435 GIDDENSVILLE ROAD , FAISON, NC 28341	SubContractor	237,920.00
19102	PINNACLE GRINDING AND GROOVING LLC	,False	275 HILL STREET SUITE 220 , RENO, NV 89501	SubContractor	25,696.32
16877	ROADWORKS CONSTRUCTION COMPANY LLC	C False	5401 BUCKWOOD DRIVE , APEX, NC 27539	SubContractor	1,632,968.67
11852	SADLER LANDSCAPING LLC	False	953 BLACK ROCK ROAD , MERRY HILL, NC 27957	SubContractor	3,450,106.59
18910	J EBRON & SON TRUCKING	False	3860 BRICK KILN ROAD , GREENVILLE, NC 27858	SubContractor	200,005.00
4761	TRAFFIC CONTROL SAFETY SERVICES INC.	,False	POST OFFICE BOX 24511 , WINSTON-SALEM, NC 27114	SubContractor	88,565.00
4761	TRAFFIC CONTROL SAFETY SERVICES INC.	,True	POST OFFICE BOX 24511 , WINSTON-SALEM, NC 27114	Supplier	179,005.80
15450	DIXON PAVING INC	False	4801 GLENWOOD AVENUE SUITE 200 , RALEIGH, NC 27612	SubContractor	80,907.30
15521	4 D CONSTRUCTION	False	P.O. BOX 806 , MAXTON, NC 28364	SubContractor	33,949.68
3376	REYNOLDS FENCE & GUARDRAIL INC	False	9320 MACHADO DRIVE , INDIAN TRAIL, NC 28079	SubContractor	247,661.25

BondID: SNC04116637 Surety Registry Agency: Surety2000 Verified?: 1 Surety Agency: CHUBB Surety Bond Execution Date: 04/11/2022 05:04:23 PM

#### North Carolina Department of Transportation 3697 - Branch Civil, Inc.

Line Number	Item Number	Quantity	Unit	Unit Price	Extension Price
Section 0001 ROADWAY ITEMS	- NPAR (BEAUFORT COUNTY	)			
0001	0000100000-N MOBILIZATION	1.000	LS	\$4,300,000.0000	\$4,300,000.00
0002	0000400000-N CONSTRUCTION SUB	1.000 RVEYING	LS	\$900,000.0000	\$900,000.00
0003	0000700000-N FIELD OFFICE	1.000	LS	\$750,000.0000	\$750,000.00
0004	000100000-E CLEARING & GRUBH	1.000 BING ACRE	-	\$7,500,000.0000	\$7,500,000.00
0005	0008000000-E SUPPLEMENTARY CI	3.000 LEARING & GRU		\$17,400.0000	\$52,200.00
0006	0022000000-E UNCLASSIFIED EXC	70350.000 CAVATION	СҮ	\$5.0000	\$351,750.00
0007	0028000000-N TYPE I STANDARD	1.000 APPROACH FII	-	\$50,000.0000 ****** (156+55.00 -L-	\$50,000.00 LT)
0008	0028000000-N TYPE I STANDARD	1.000 APPROACH FII	-	\$50,000.0000 ****** (156+55.00 -L-	
0009	0036000000-E UNDERCUT EXCAVA	36326.000 TION	СҮ	\$15.0000	\$544,890.00
0010	0106000000-E BORROW EXCAVATIO		СҮ	\$9.7500	\$15,186,795.00
0011	0127000000-N EMBANKMENT SETTI	10.000 LEMENT GAUGES		\$3,650.0000	\$36,500.00
0012	0134000000-E DRAINAGE DITCH H	143430.000 EXCAVATION	СҮ	\$3.2500	\$466,147.50
0013	0156000000-E REMOVAL OF EXIS			\$4.7500	\$201,590.00
0014	0177000000-E BREAKING OF EXIS	136010.000 STING ASPHALT		\$1.5000	\$204,015.00
0015	0192000000-N PROOF ROLLING	107.000	HR	\$257.0000	\$27,499.00
0016	0194000000-E SELECT GRANULAR	66000.000 MATERIAL,	CY CLASS III	\$9.7500	\$643,500.00
0017	0196000000-E GEOTEXTILE FOR S	75400.000 Soil stabiliz		\$1.5000	\$113,100.00
0018	0199000000-E TEMPORARY SHORIN	10003.000 NG	SF	\$40.0000	\$400,120.00
0019	0222000000-E GEOTEXTILE FOR H	500.000 ROCK EMBANK-	SY MENTS	\$6.0000	\$3,000.00
0020	0318000000-E FOUNDATION COND	5770.000 ITIONING MATE		\$35.5000 STRUCTURES	\$204,835.00
0021	0320000000-E FOUNDATION COND	33700.000 ITIONING GEO-		\$2.5000	\$84,250.00
0022	0335200000-E 15" DRAINAGE PIN	1076.000 PE	LF	\$35.5000	\$38,198.00
0023	0335300000-E 18" drainage pii	188.000 PE	LF	\$40.0000	\$7,520.00

Letting: L220419
04/19/2022 02:00:00 PM

# North Carolina Department of Transportation 3697 - Branch Civil, Inc.

Contract ID: C204498 Call: 001

04/19/2022 02:0	00:00 PM 3697 - Branc	ch Civil, Inc.		Call: 001
0024	0335400000-E 324.000 24" DRAINAGE PIPE	LF	\$54.5000	\$17,658.00
0025	0335500000-E 180.000 30" DRAINAGE PIPE	LF	\$81.0000	\$14,580.00
0026	0335600000-E 44.000 36" DRAINAGE PIPE	LF	\$121.0000	\$5,324.00
0027	0335700000-E 108.000 42" DRAINAGE PIPE	LF	\$143.0000	\$15,444.00
0028	0335800000-E 28.000 48" DRAINAGE PIPE	LF	\$200.0000	\$5,600.00
0029	0342000000-E 128.000 **" SIDE DRAIN PIPE (30")	LF	\$80.0000	\$10,240.00
0030	0342000000-E 76.000 **" SIDE DRAIN PIPE (36")	LF	\$98.5000	\$7,486.00
0031	0343000000-E 3808.000 15" SIDE DRAIN PIPE	LF	\$36.0000	\$137,088.00
0032	0344000000-E 1652.000 18" SIDE DRAIN PIPE	LF	\$41.0000	\$67,732.00
0033	0345000000-E 1388.000 24" SIDE DRAIN PIPE	LF	\$55.0000	\$76,340.00
0034	0366000000-E 7528.000 15" RC PIPE CULVERTS, CLASS		\$40.0000	\$301,120.00
0035	037200000-E 364.000 18" RC PIPE CULVERTS, CLASS		\$47.5000	\$17,290.00
0036	0378000000-E 636.000 24" RC PIPE CULVERTS, CLASS		\$67.5000	\$42,930.00
0037	0384000000-E 1404.000 30" RC PIPE CULVERTS, CLASS		\$97.5000	\$136,890.00
0038	039000000-E 2988.000 36" RC PIPE CULVERTS, CLASS		\$128.0000	\$382,464.00
0039	039600000-E 1084.000 42" RC PIPE CULVERTS, CLASS	LF III	\$163.0000	\$176,692.00
0040	0402000000-E 1288.000 48" RC PIPE CULVERTS, CLASS	LF III	\$201.0000	\$258,888.00
0041	040800000-E 352.000 54" RC PIPE CULVERTS, CLASS	LF III	\$303.0000	\$106,656.00
0042	042000000-E 848.000 66" RC PIPE CULVERTS, CLASS	LF III	\$477.0000	\$404,496.00
0043	0448000000-E 180.000 ****" RC PIPE CULVERTS, CLAS:		\$543.0000	\$97,740.00
0044	0448200000-E 5676.000 15" RC PIPE CULVERTS, CLASS :		\$47.0000	\$266,772.00
0045	0448300000-E 180.000 18" RC PIPE CULVERTS, CLASS :		\$58.5000	\$10,530.00
0046	0448500000-E 276.000 30" RC PIPE CULVERTS, CLASS 3		\$111.0000	\$30,636.00
0047	0448600000-E 188.000 36" RC PIPE CULVERTS, CLASS 3		\$145.0000	\$27,260.00
0048	0973100000-E 166.000	LF	\$818.0000	\$135,788.00

#### North Carolina Department of Transportation 3697 - Branch Civil, Inc.

	**" WELDED STEEL PIPE, ****" THICK, GRADE B IN SOIL (36", 0.500")
0049	0973100000-E 92.000 LF \$1,970.0000 \$181,240.00 **" WELDED STEEL PIPE, ****" THICK, GRADE B IN SOIL (54", 0.750")
0050	0973100000-E 92.000 LF \$2,230.0000 \$205,160.00 **" WELDED STEEL PIPE, ****" THICK, GRADE B IN SOIL (66", 0.875")
0051	097330000-E 166.000 LF \$1,860.0000 \$308,760.00 **" WELDED STEEL PIPE, ****" THICK, GRADE B NOT IN SOIL (36", 0.500")
0052	0973300000-E 92.000 LF \$2,900.0000 \$266,800.00 **" WELDED STEEL PIPE, ****" THICK, GRADE B NOT IN SOIL (54", 0.750")
0053	0973300000-E 92.000 LF \$3,150.0000 \$289,800.00 **" WELDED STEEL PIPE, ****" THICK, GRADE B NOT IN SOIL (66", 0.875")
0054	0986000000-E 80.000 LF \$181.0000 \$14,480.00 GENERIC PIPE ITEM 15" CS SLOTTED DRAIN, 0.064" THICK
0055	099500000-E 11593.000 LF \$18.0000 \$208,674.00 PIPE REMOVAL
0056	101100000-N 1.000 LS \$1,563,302.1500 \$1,563,302.15 FINE GRADING
0057	107700000-E 1030.000 TON \$56.5000 \$58,195.00 #57 STONE
0058	109950000-E 1500.000 CY \$16.0000 \$24,000.00 SHALLOW UNDERCUT
0059	1099700000-E 2860.000 TON \$31.5000 \$90,090.00 CLASS IV SUBGRADE STABILIZA- TION
0060	111100000-E 1000.000 TON \$47.5000 \$47,500.00 CLASS IV AGGREGATE STABILIZA- TION
0061	112100000-E 199600.000 TON \$32.5000 \$6,487,000.00 AGGREGATE BASE COURSE
0062	122000000-E 3000.000 TON \$33.5000 \$100,500.00 INCIDENTAL STONE BASE
0063	127500000-E 462.000 GAL \$31.5000 \$14,553.00 PRIME COAT
0064	133000000-E 1450.000 SY \$2.0000 \$2,900.00 INCIDENTAL MILLING
0065	149100000-E 7170.000 TON \$95.0000 \$681,150.00 ASPHALT CONC BASE COURSE, TYPE B25.0C
0066	150300000-E 97560.000 TON \$69.0000 \$6,731,640.00 ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C
0067	151900000-E 2310.000 TON \$90.0000 \$207,900.00 ASPHALT CONC SURFACE COURSE, TYPE S9.5B
0068	152300000-E 81600.000 TON \$70.0000 \$5,712,000.00 ASPHALT CONC SURFACE COURSE, TYPE S9.5C
0069	157500000-E 10055.000 TON \$450.0000 \$4,524,750.00 ASPHALT BINDER FOR PLANT MIX
0070	169300000-E 750.000 TON \$261.0000 \$195,750.00 ASPHALT PLANT MIX, PAVEMENT REPAIR
0071	184000000-E 212640.000 LF \$0.2000 \$42,528.00 MILLED RUMBLE STRIPS (ASPHALT CONCRETE)
0072	202200000-E 1344.000 CY \$39.5000 \$53,088.00 SUBDRAIN EXCAVATION

04/19/2022 02:00:00 PM		ch Civil, Inc.		Call: 001
0073	2026000000-E 4000.000 GEOTEXTILE FOR SUBSURFACE	SY DRAINS	\$16.0000	\$64,000.00
0074	203600000-E 672.000 SUBDRAIN COARSE AGGREGATE	СҮ	\$90.5000	\$60,816.00
0075	2044000000-E 4000.000 6" PERFORATED SUBDRAIN PIPE	LF	\$20.5000	\$82,000.00
0076	207000000-N 8.000 SUBDRAIN PIPE OUTLET	EA	\$452.0000	\$3,616.00
0077	207700000-Е 48.000 6" OUTLET PIPE	LF	\$88.5000	\$4,248.00
0078	220900000-E 113.000 ENDWALLS	СХ	\$1,630.0000	\$184,190.00
0079	222000000-E 38.800 REINFORCED ENDWALLS	СҮ	\$2,330.0000	\$90,404.00
0080	225300000-E 2.701 PIPE COLLARS	СҮ	\$2,300.0000	\$6,212.30
0081	226400000-E 0.029 PIPE PLUGS	СХ	\$18,000.0000	\$522.00
0082	227500000-е 197.000 FLOWABLE FILL	СҮ	\$252.0000	\$49,644.00
0083	228600000-N 227.000 MASONRY DRAINAGE STRUCTURES	EA	\$3,500.0000	\$794,500.00
0084	2297000000-E 37.350 MASONRY DRAINAGE STRUCTURES	СҮ	\$2,900.0000	\$108,315.00
0085	230800000-E 22.260 MASONRY DRAINAGE STRUCTURES	LF	\$305.0000	\$6,789.30
0086	2364000000-N 96.000 FRAME WITH TWO GRATES, STD	EA 840.16	\$598.0000	\$57,408.00
0087	2364200000-N 5.000 FRAME WITH TWO GRATES, STD	EA 840.20	\$614.0000	\$3,070.00
0088	236500000-N 122.000 FRAME WITH TWO GRATES, STD		\$614.0000	\$74,908.00
0089	239600000-N 1.000 FRAME WITH COVER, STD 840.54		\$443.0000	\$443.00
0090	245100000-N 93.000 CONCRETE TRANSITIONAL SECTIO		\$1,300.0000	\$120,900.00
0091	255600000-E 194.000 SHOULDER BERM GUTTER	LF	\$70.0000	\$13,580.00
0092	261200000-E 430.000 6" CONCRETE DRIVEWAY	SY	\$135.0000	\$58,050.00
0093	265500000-E 10470.000 5" MONOLITHIC CONCRETE ISLAN		\$133.0000	\$1,392,510.00
0094	303000000-E 3637.500 STEEL BEAM GUARDRAIL	LF	\$30.0000	\$109,125.00
0095	3045000000-E 150.000 STEEL BEAM GUARDRAIL, SHOP		\$31.0000	\$4,650.00
0096	3195000000-N 3.000 GUARDRAIL END UNITS, TYPE AT	EA	\$1,150.0000	\$3,450.00
0097	321000000-N 9.000		\$1,325.0000	\$11,925.00

North Carolina Department of Transportation

Letting: L220419

Contract ID: C204498

#### North Carolina Department of Transportation 3697 - Branch Civil, Inc.

	GUARDRAIL END UNITS, TYPE CAT-1		
0098	3287000000-N 11.000 EA \$4, GUARDRAIL END UNITS, TYPE TL-3	000.0000	\$44,000.00
0099	3288000000-N 1.000 EA \$3, GUARDRAIL END UNITS, TYPE TL-2	900.0000	\$3,900.00
0100	331700000-N 4.000 EA \$3, GUARDRAIL ANCHOR UNITS, TYPE B-77	750.0000	\$15,000.00
0101	336000000-E 590.000 LF REMOVE EXISTING GUARDRAIL	\$2.2500	\$1,327.50
0102	338000000-E 3025.000 LF TEMPORARY STEEL BEAM GUARDRAIL	\$13.0000	\$39,325.00
0103	3387000000-N 3.000 EA \$2, TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE ********	600.0000 (B-77)	\$7,800.00
0104	3389150000-N 11.000 EA \$2, TEMPORARY GUARDRAIL END UNITS, TYPE ***** (TL-3)	600.0000	\$28,600.00
0105	350300000-E 96111.000 LF WOVEN WIRE FENCE, 47" FABRIC	\$3.5000	\$336,388.50
0106	350900000-E 5919.000 EA 4" TIMBER FENCE POSTS, 7'-6" LONG	\$22.0000	\$130,218.00
0107	351500000-E 1645.000 EA 5" TIMBER FENCE POSTS, 8'-0" LONG	\$31.5000	\$51 <b>,</b> 817.50
0108	3628000000-E 900.000 TON RIP RAP, CLASS I	\$82.5000	\$74,250.00
0109	363500000-E 2160.000 TON RIP RAP, CLASS II	\$96.5000	\$208,440.00
0110	3642000000-E 500.000 TON RIP RAP, CLASS A	\$67.0000	\$33,500.00
0111	3649000000-E 1500.000 TON RIP RAP, CLASS B	\$67.0000	\$100,500.00
0112	3656000000-E 10100.000 SY GEOTEXTILE FOR DRAINAGE	\$2.0000	\$20,200.00
0113	4072000000-E 206.000 LF SUPPORTS, 3-LB STEEL U-CHANNEL	\$17.5000	\$3,605.00
0114	4082000000-E 3868.000 LF SUPPORTS, WOOD	\$17.5000	\$67,690.00
0115	4096000000-N 16.000 EA SIGN ERECTION, TYPE D	3146.0000	\$2,336.00
0116	410200000-N 149.000 EA SIGN ERECTION, TYPE E	\$93.5000	\$13,931.50
0117	410800000-N 54.000 EA SIGN ERECTION, TYPE F	3146.0000	\$7,884.00
0118	4116100000-N 3.000 EA SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (I	351.0000 )	\$1,053.00
0119	4116100000-N 3.000 EA SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (B	351.0000 E)	\$1,053.00
0120	4141000000-N 6.000 EA DISPOSAL OF SUPPORT, WOOD	\$5.7500	\$34.50
0121	4158000000-N 91.000 EA DISPOSAL OF SIGN SYSTEM, WOOD	\$5.7500	\$523.25

Letting: L220419 04/19/2022 02:00:00 P	North Carolina Depart M 3697 - Bran	•		
0122	4400000000-E 4689.000 WORK ZONE SIGNS (STATIONARY)	SF	\$11.0000	\$51 <b>,</b> 579.00
0123	4405000000-E 472.000 WORK ZONE SIGNS (PORTABLE)	SF	\$10.0000	\$4,720.00
0124	4410000000-E 730.000 WORK ZONE SIGNS (BARRICADE	SF MOUNTED)	\$7.7500	\$5,657.50
0125	4415000000-N 4.000 FLASHING ARROW BOARD	EA	\$4,720.0000	\$18,880.00
0126	4420000000-N 3.000 PORTABLE CHANGEABLE MESSAGE	EA SIGN	\$18,900.0000	\$56,700.00
0127	443000000-N 1035.000 DRUMS	EA	\$48.0000	\$49,680.00
0128	4435000000-N 242.000 CONES	EA	\$25.5000	\$6,171.00
0129	4445000000-E 520.000 BARRICADES (TYPE III)	LF	\$28.0000	\$14,560.00
0130	4455000000-N 2400.000 FLAGGER	DAY	\$325.0000	\$780,000.00
0131	4465000000-N 14.000 TEMPORARY CRASH CUSHIONS	EA	\$6,780.0000	\$94,920.00
0132	4470000000-N 29.000 REMOVE & RESET TEMPORARY CRA		\$3,280.0000	\$95,120.00
0133	448000000-N 2.000 TMA	EA	\$61,100.0000	\$122,200.00
0134	4485000000-E 4360.000 PORTABLE CONCRETE BARRIER	LF	\$51.5000	\$224,540.00
0135	4490000000-E 900.000 PORTABLE CONCRETE BARRIER	LF (ANCHORED)	\$72.5000	\$65,250.00
0136	4500000000-E 10520.000 REMOVE AND RESET PORTABLE CC		\$5.2500	\$55,230.00
0137	451000000-N 100.000 LAW ENFORCEMENT	HR	\$61.0000	\$6,100.00
0138	4516000000-N 32.000 SKINNY DRUM	EA	\$35.5000	\$1,136.00
0139	4650000000-N 2581.000 TEMPORARY RAISED PAVEMENT	EA MARKERS	\$5.7500	\$14,840.75
0140	4685000000-E 14115.000 THERMOPLASTIC PAVEMENT MARKI		\$0.9000 )	\$12,703.50
0141	4688000000-E 266469.000 THERMOPLASTIC PAVEMENT MARKI		\$1.0000	\$266,469.00
0142	4695000000-E 115.000 THERMOPLASTIC PAVEMENT MARKI		\$2.7500 )	\$316.25
0143	4700000000-E 24424.000 THERMOPLASTIC PAVEMENT MARKI		\$2.7500 S)	\$67,166.00
0144	4725000000-E 148.000 THERMOPLASTIC PAVEMENT MARKI		\$234.0000	\$34,632.00
0145	4775000000-E 720.000 COLD APPLIED PLASTIC PAVEMEN		\$7.0000 E ** (6") (IV)	\$5,040.00
0146	481000000-E 67716.000	LF	\$0.2000	\$13,543.20

#### North Carolina Department of Transportation 3697 - Branch Civil, Inc.

0147	4815000000-E 1285211 PAINT PAVEMENT MARKING 3			\$0.2000	\$257,042.20
0148	4825000000-E 51058 PAINT PAVEMENT MARKING		)	\$0.8500	\$43,399.30
0149	483500000-E 2466 PAINT PAVEMENT MARKING :		)	\$3.5000	\$8,631.00
0150	484500000-N 330 PAINT PAVEMENT MARKING			\$58.5000	\$19,305.00
0151	485000000-E 9636 REMOVAL OF PAVEMENT MARI		S (4")	\$0.3000	\$2,890.80
0152	485500000-E 233098 REMOVAL OF PAVEMENT MARI		S (6")	\$0.3000	\$69,929.40
0153	4865000000-E 918 REMOVAL OF PAVEMENT MARI			\$2.2500	\$2,065.50
0154	4870000000-E 277 REMOVAL OF PAVEMENT MARI		s (24")	\$4.7500	\$1,315.75
0155	4875000000-n 19 REMOVAL OF PAVEMENT MARI	.000 EA			\$1,111.50
0156	4890000000-E 495 GENERIC PAVEMENT MARKIN (STANDARD GLASS BEADS)	.000 LF		\$9.2500	
	400400000 - 000			\$17.5000	¢4 705 00
0157	4891000000-E 270 GENERIC PAVEMENT MARKI MLS)				
0157	GENERIC PAVEMENT MARKI	NG ITEM TH	ERMOPLASTIC	PAVEMENT MARKING \$47.0000	LINES (24", 90 \$168,589.00
	GENERIC PAVEMENT MARKI MLS) 489500000-N 3587	NG ITEM TH .000 EA G ITEM NON-( .000 EA	ERMOPLASTIC	PAVEMENT MARKING \$47.0000	LINES (24", 90 \$168,589.00
0158	GENERIC         PAVEMENT         MARKI           MLS)         4895000000-N         3587           GENERIC         PAVEMENT         MARKING           490000000-N         5	NG ITEM TH .000 EA G ITEM NON-( .000 EA NT MARKI	ERMOPLASTIC	PAVEMENT MARKING \$47.0000 WPLOWABLE PAVEMEN \$11.5000	LINES (24", 90 \$168,589.00 F MARKER
0158	GENERIC PAVEMENT MARKI MLS) 4895000000-N 3587 GENERIC PAVEMENT MARKING 490000000-N 5 PERMANENT RAISED PAVEMEN 5325300000-E 2700 3" WATER LINE	NG ITEM TH .000 EA G ITEM NON-( .000 EA NT MARKI	ERMOPLASTIC	PAVEMENT MARKING \$47.0000 WPLOWABLE PAVEMEN \$11.5000	LINES (24", 90 \$168,589.00 F MARKER \$57.50 \$54,000.00
0158 0159 0160	GENERIC       PAVEMENT       MARKII         MLS)       4895000000-N       3587         GENERIC       PAVEMENT       MARKING         4900000000-N       5         PERMANENT       RAISED       PAVEMENT         5325300000-E       2700         3"       WATER       LINE         5325400000-E       89         4"       WATER       LINE	NG ITEM TH .000 EA G ITEM NON-( .000 EA NT MARKI .000 LF	ERMOPLASTIC	PAVEMENT MARKING \$47.0000 WPLOWABLE PAVEMEN \$11.5000 \$20.0000	LINES (24", 90 \$168,589.00 F MARKER \$57.50 \$54,000.00
0158 0159 0160 0161	GENERIC       PAVEMENT       MARKII         MLS)       4895000000-N       3587         GENERIC       PAVEMENT       MARKING         4900000000-N       5         PERMANENT RAISED       PAVEMEN         532530000-E       2700         3" WATER LINE       532540000-E       89         4" WATER LINE       5325600000-E       47521         6" WATER LINE       6" WATER LINE       5000000-E	NG ITEM TH .000 EA G ITEM NON-( .000 EA NT MARKI .000 LF .000 LF	ERMOPLASTIC	PAVEMENT MARKING \$47.0000 WPLOWABLE PAVEMENT \$11.5000 \$20.0000 \$116.0000	LINES (24", 90 \$168,589.00 F MARKER \$57.50 \$54,000.00 \$10,324.00
0158 0159 0160 0161 0162	GENERIC       PAVEMENT       MARKII         MLS)       4895000000-N       3587         GENERIC       PAVEMENT       MARKING         4900000000-N       5         PERMANENT       RAISED       PAVEMEN         532530000-E       2700         3"       WATER       LINE         5325400000-E       89         4"       WATER       LINE         5325600000-E       47521         6"       WATER       LINE         5325800000-E       4152         8"       WATER       LINE	NG ITEM TH .000 EA G ITEM NON-( .000 EA NT MARKI .000 LF .000 LF	ERMOPLASTIC	PAVEMENT MARKING \$47.0000 WPLOWABLE PAVEMENT \$11.5000 \$20.0000 \$116.0000 \$43.0000	LINES (24", 90 \$168,589.00 F MARKER \$57.50 \$54,000.00 \$10,324.00 \$2,043,403.00
0158 0159 0160 0161 0162 0163	GENERIC       PAVEMENT       MARKII         MLS)       4895000000-N       3587         GENERIC       PAVEMENT       MARKING         4900000000-N       5         PERMANENT       RAISED       PAVEMENT         5325300000-E       2700         3" WATER       LINE         5325400000-E       89         4" WATER       LINE         5325600000-E       47521         6" WATER       LINE         5325800000-E       4152         8" WATER       LINE         5326000000-E       4745         10" WATER       LINE	NG ITEM TH .000 EA G ITEM NON-( .000 EA NT MARKI .000 LF .000 LF .000 LF .000 LF .000 LF .000 LF	ERMOPLASTIC	PAVEMENT MARKING \$47.0000 WPLOWABLE PAVEMEN \$11.5000 \$20.0000 \$116.0000 \$43.0000 \$66.0000	LINES (24", 90 \$168,589.00 F MARKER \$57.50 \$54,000.00 \$10,324.00 \$2,043,403.00 \$274,032.00
0158 0159 0160 0161 0162 0163 0164	GENERIC       PAVEMENT       MARKII         MLS)       4895000000-N       3587         GENERIC       PAVEMENT       MARKING         4900000000-N       5         PERMANENT       RAISED       PAVEMENT         5325300000-E       2700         3"       WATER       LINE         5325400000-E       89         4"       WATER       LINE         5325600000-E       47521         6"       WATER       LINE         5325800000-E       4152         8"       WATER       LINE         532600000-E       4745         10"       WATER       LINE         5329000000-E       22179         DUCTILE       IRON       WATER	NG ITEM TH .000 EA G ITEM NON-( .000 EA NT MARKI .000 LF .000 LF .000 LF .000 LF .000 LF .000 LF	ERMOPLASTIC	PAVEMENT MARKING \$47.0000 WPLOWABLE PAVEMENT \$11.5000 \$20.0000 \$116.0000 \$43.0000 \$66.0000 \$89.5000	LINES (24", 90 \$168,589.00 F MARKER \$57.50 \$54,000.00 \$10,324.00 \$2,043,403.00 \$274,032.00 \$424,677.50
0158 0159 0160 0161 0162 0163 0164 0165	GENERIC PAVEMENT MARKII         MLS)         4895000000-N       3587         GENERIC PAVEMENT MARKING         4900000000-N       5         PERMANENT RAISED PAVEMENT         5325300000-E       2700         3" WATER LINE         5325400000-E       89         4" WATER LINE         5325600000-E       47521         6" WATER LINE         5325800000-E       4152         8" WATER LINE         532600000-E       4745         10" WATER LINE         532900000-E       22179         DUCTILE IRON WATER PIPE         553400000-E       5         **" VALVE (3")	NG ITEM TH .000 EA G ITEM NON-( .000 EA NT MARKI .000 LF .000 LF .000 LF .000 LF .000 LF .000 LF .000 LF .000 LF .000 LF	ERMOPLASTIC	PAVEMENT MARKING \$47.0000 WPLOWABLE PAVEMENT \$11.5000 \$20.0000 \$116.0000 \$43.0000 \$66.0000 \$89.5000 \$3.5000	LINES (24", 90 \$168,589.00 F MARKER \$57.50 \$54,000.00 \$10,324.00 \$2,043,403.00 \$274,032.00 \$424,677.50 \$77,626.50
0158       0159       0160       0161       0162       0163       0164       0165       0166	GENERIC       PAVEMENT       MARKII         MLS)       4895000000-N       3587         GENERIC       PAVEMENT       MARKING         4900000000-N       5         PERMANENT       RAISED       PAVEMEN         5325300000-E       2700         3"       WATER       LINE         5325400000-E       89         4"       WATER       LINE         5325600000-E       47521         6"       WATER       LINE         5325600000-E       47521         6"       WATER       LINE         5325600000-E       47521         6"       WATER       LINE         5325600000-E       4745         10"       WATER       LINE         5326000000-E       22179         DUCTILE       IRON WATER       PIPE         5534000000-E       5       5         **"       VALVE       (3")         5540000000-E       47         6"       VALVE       47	NG ITEM TH .000 EA G ITEM NON-0 .000 EA NT MARKI .000 LF .000 LF .000 LF .000 LF .000 LF .000 LF .000 LF .000 LB FITT: .000 EA	ERMOPLASTIC	PAVEMENT MARKING \$47.0000 WPLOWABLE PAVEMENT \$11.5000 \$20.0000 \$116.0000 \$43.0000 \$66.0000 \$89.5000 \$3.5000 \$1,890.0000	LINES (24", 90 \$168,589.00 F MARKER \$57.50 \$54,000.00 \$10,324.00 \$2,043,403.00 \$274,032.00 \$424,677.50 \$77,626.50 \$9,450.00

Letting: L220419
04/19/2022 02:00:00 PM

# North Carolina Department of Transportation 3697 - Branch Civil, Inc.

Contract ID: C204498 Call: 001

Call: 001		ch Civil, Inc.	0:00 PM 3697 - Brand	04/19/2022 02:0
\$9,320.00	\$9,320.0000	EA	5571400000-E 1.000 4" TAPPING SLEEVE & VALVE	0170
\$30,600.00	\$10,200.0000	EA	5571600000-E 3.000 6" TAPPING SLEEVE & VALVE	0171
\$11,600.00	\$11,600.0000	EA	5571800000-E 1.000 8" TAPPING SLEEVE & VALVE	0172
\$30,800.00	\$15,400.0000	EA	5572000000-E 2.000 10" TAPPING SLEEVE & VALVE	0173
\$22,435.00	\$641.0000	EA	5643100000-E 35.000 3/4" WATER METER	0174
\$66,830.00	\$1,630.0000	EA	5648000000-N 41.000 RELOCATE WATER METER	0175
\$118,800.00	\$9,900.0000	EA	566600000-N 12.000 FIRE HYDRANT	0176
\$19,998.00	\$99.0000	LF	567300000-E 202.000 FIRE HYDRANT LEG	0177
\$145,447.50	\$21.5000	LF	5686500000-E 6765.000 WATER SERVICE LINE	0178
\$18,750.00	\$6.0000		5798000000-E 3125.000 ABANDON **" UTILITY PIPE (3"	0179
\$1,890.00	\$18.0000		5798000000-E 105.000 ABANDON **" UTILITY PIPE (4"	0180
\$353,864.00	\$8.0000	LF	580000000-E 44233.000 ABANDON 6" UTILITY PIPE	0181
\$32,319.00	\$9.5000	LF	5801000000-E 3402.000 ABANDON 8" UTILITY PIPE	0182
\$54,887.50	\$12.5000	LF	580200000-Е 4391.000 АВАNDON 10" UTILITY PIPE	0183
\$12,215.00	\$349.0000	EA	581500000-N 35.000 REMOVE WATER METER	0184
\$10,200.00	\$2,040.0000	EA	5815500000-N 5.000 REMOVE FIRE HYDRANT	0185
\$190,212.00	\$262.0000	LF	5835000000-E 726.000 **" ENCASEMENT PIPE (14")	0186
\$93,000.00	\$186.0000	LF	5835000000-E 500.000 **" ENCASEMENT PIPE (8")	0187
\$49,175.00	\$87.5000	LF	5835700000-E 562.000 16" ENCASEMENT PIPE	0188
\$32,967.00	\$99.0000	LF	5835900000-E 333.000 20" ENCASEMENT PIPE	0189
\$196,138.00	\$349.0000	LF	5872500000-E 562.000 BORE AND JACK OF **" (16")	0190
\$126,207.00	\$379.0000	LF	5872500000-E 333.000 BORE AND JACK OF **" (20")	0191
\$171,302.00	\$97.0000		5872600000-E 1766.000 DIRECTIONAL DRILLING OF **"	0192
\$6,980.00	\$3,490.0000		5882000000-N 2.000 GENERIC UTILITY ITEM 2" POST	0193
\$5,126.00	\$233.0000		588200000-N 22.000	0194

#### North Carolina Department of Transportation 3697 - Branch Civil, Inc.

0195	5882000000-N 36.000 GENERIC UTILITY ITEM WATER V		\$233.0000	\$8,388.00
0196	6000000000-E 292695.000 TEMPORARY SILT FENCE	LF	\$2.7000	\$790,276.50
0197	6006000000-E 4715.000 STONE FOR EROSION CONTROL,		\$38.0000	\$179,170.00
0198	600900000-E 49875.000 STONE FOR EROSION CONTROL,		\$38.0000	\$1,895,250.00
0199	6012000000-E 17575.000 SEDIMENT CONTROL STONE	TON	\$31.5000	\$553,612.50
0200	6015000000-E 378.000 ТЕМРОГАКҮ MULCHING	ACR	\$1,180.0000	\$446,040.00
0201	6018000000-E 14300.000 SEED FOR TEMPORARY SEEDING	LB	\$4.2500	\$60,775.00
0202	6021000000-E 73.000 FERTILIZER FOR TEMPORARY SEE		\$1,740.0000	\$127,020.00
0203	6024000000-E 6060.000 TEMPORARY SLOPE DRAINS	LF	\$16.5000	\$99,990.00
0204	6029000000-E 6700.000 SAFETY FENCE	LF	\$2.7500	\$18,425.00
0205	6030000000-E 39270.000 SILT EXCAVATION	СҮ	\$2.5000	\$98,175.00
0206	6036000000-E 252745.000 MATTING FOR EROSION CONTROL	SY	\$1.2500	\$315,931.25
0207	6037000000-E 2010.000 COIR FIBER MAT	SY	\$6.2500	\$12,562.50
0208	6038000000-E 900.000 PERMANENT SOIL REINFORCEMENT	-	\$7.2500	\$6,525.00
0209	6042000000-E 6520.000 1/4" HARDWARE CLOTH	LF	\$8.0000	\$52,160.00
0210	6043000000-E 1430.000 LOW PERMEABILITY GEOTEXTILE	SY	\$5.0000	\$7,150.00
0211	6045000000-E 242.000 **" TEMPORARY PIPE (15")	LF	\$52.5000	\$12,705.00
0212	6045000000-E 810.000 **" TEMPORARY PIPE (24")	LF	\$75.0000	\$60,750.00
0213	6045000000-E 130.000 **" TEMPORARY PIPE (36")	LF	\$126.0000	\$16,380.00
0214	6045000000-E 420.000 **" TEMPORARY PIPE (42")	LF	\$289.0000	\$121,380.00
0215	6045000000-E 670.000 **" TEMPORARY PIPE (48")	LF	\$272.0000	\$182,240.00
0216	6048000000-E 90.000 FLOATING TURBIDITY CURTAIN	SY	\$37.0000	\$3,330.00
0217	6069000000-E 290.000 STILLING BASINS	СҮ	\$31.5000	\$9,135.00
0218	6070000000-N 5.000 SPECIAL STILLING BASINS	EA	\$1,180.0000	\$5,900.00

Letting: L220419
04/19/2022 02:00:00 PM

# North Carolina Department of Transportation 3697 - Branch Civil, Inc.

Contract ID: C204498 Call: 001

04/19/2022 02:00:00 PM		3697 - Branch Civil, Inc.			Call: 001
0219	6071012000-E Coir fiber Way		LF	\$12.5000	\$276,000.00
0220	6071014000-E Coir fiber Way		LF	\$14.0000	\$107,618.00
0221	6071020000-E POLYACRYLAMIDE	32735.000 E (PAM)	LB	\$9.2500	\$302,798.75
0222	6071030000-E COIR FIBER BAB		LF	\$8.2500	\$63,318.75
0223	6071050000-E **" SKIMMER (1	52.000 L-1/2")	EA	\$553.0000	\$28,756.00
0224	6071050000-E **" SKIMMER (2	9.000	EA	\$642.0000	\$5 <b>,</b> 778.00
0225	6071050000-E **" SKIMMER (2	4.000	EA	\$856.0000	\$3,424.00
0226	6071050000-E **" SKIMMER (3	1.000	EA	\$1,080.0000	\$1,080.00
0227	6071050000-E **" SKIMMER (4	1.000	EA	\$1,620.0000	\$1,620.00
0228	6084000000-E SEEDING & MULC		ACR	\$3,170.0000	\$789,330.00
0229	608700000-E MOWING	288.000	ACR	\$233.0000	\$67,104.00
0230	609000000-E Seed for repai		LB	\$18.5000	\$70,300.00
0231	609300000-E FERTILIZER FOF	12.000 R REPAIR SEEDIN		\$2,030.0000	\$24,360.00
0232	609600000-E SEED FOR SUPPI	6100.000 LEMENTAL SEEDIN		\$5.0000	\$30,500.00
0233	610800000-E FERTILIZER TOP		TON	\$1,540.0000	\$281,820.00
0234	6111000000-E IMPERVIOUS DIF	355.000 KE	LF	\$139.0000	\$49,345.00
0235	6114500000-N SPECIALIZED HA	10.000 AND MOWING	MHR	\$149.0000	\$1,490.00
0236	6117000000-N RESPONSE FOR E	150.000 EROSION CONTROI		\$1.0000	\$150.00
0237	6117500000-N CONCRETE WASHO	15.000 DUT STRUCTURE	EA	\$1,020.0000	\$15,300.00
0238	612000000-E Culvert divers	181.000 SION CHANNEL	СҮ	\$141.0000	\$25,521.00
0239	612300000-E REFORESTATION	0.100	ACR	\$11,900.0000	\$1,190.00
0240	730000000-E UNPAVED TRENCH			\$12.0000	\$1,320.00
0241	730100000-E DIRECTIONAL DE	90.000 RILL (*******		\$20.5000	\$1,845.00
0242	732400000-N Junction Box	3.000 (STANDARD SIZE)		\$341.0000	\$1,023.00
0243	798000000-N	4.000	EA	\$119.0000	\$476.00

#### North Carolina Department of Transportation 3697 - Branch Civil, Inc.

	GENERIC SIGNAL	ITEM 5/8" X 10' GROUNDING ELEC-	TRODE	
0244		1.000 EA ITEM DMS ACCESS LADDER	\$19,100.0000	\$19,100.00
0245	7980000000-N Generic Signal	1.000 EA ITEM DMS PEDESTAL STRUCTURE	\$64,800.0000	\$64,800.00
0246	7980000000-N GENERIC SIGNAL	2.000 EA ITEM DYNAMIC MESSAGE SIGN (TYPE	\$125,000.0000 -2C)	\$250,000.00
0247	7980000000-N GENERIC SIGNAL	1.000 EA ITEM EQIPMENT CABINET DISCONNEC	\$931.0000 T	\$931.00
0248	7980000000-N GENERIC SIGNAL	1.000 EA ITEM METER BASE/DISCONNECT COMB	\$1,150.0000 INA-TION PANEL	\$1,150.00
0249	7980000000-N GENERIC SIGNAL	1.000 EA ITEM WOOD PEDESTAL	\$471.0000	\$471.00
0250	7990000000-E GENERIC SIGNAL	40.000 LF ITEM #4 SOLID BARE COPPER GROUN	\$2.2500 DING CONDUCTOR	\$90.00
0251	7990000000-E GENERIC SIGNAL	30.000 LF ITEM 3-WIRE COPPER SERVICE ENTR	\$3.7500 ANCE CONDUCTORS	\$112.50
0252	7990000000-E GENERIC SIGNAL	220.000 LF ITEM 4-WIRE COPPER FEEDER CONDU	\$4.0000 C- TORS	\$880.00
0253	7992000000-E GENERIC SIGNAL	10.000 CY ITEM OVERHEAD FOOTINGS	\$1,440.0000	\$14,400.00
Section 000	1 Total			\$82,461,599.65

\$61,300.0000 (345+79.00 -L-) \$61,700.0000 (365+81.00 -L-) \$47,600.0000	. ,
\$61,700.0000 (365+81.00 -L-)	\$61,700.00
(365+81.00 -L-)	\$61,700.00
· · · ·	
\$47 600 0000	
, ,	\$47,600.00
(69+25.50 -L-)	
N \$71.5000	\$70,070.00
IAL, BOX CULVERT	
\$1,020.0000	\$890,970.00
\$2.5000	\$285,905.00
\$\$17,700.0000	\$17,700.00
AT STATION *************** (69+25.50 L-)	
\$\$16,700.0000	\$16,700.00
AT STATION *************** (315+50 -L)	
\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$	\$12,900.00
AT STATION ************************************	)
\$19,400.0000	\$19,400.00
,,	)
	AT STATION ********** (345+79.00 -L-) 5 \$19,400.0000 AT STATION ********** (365+81.00 -L-) \$3

0260	803500000-N	1.000 LS	\$38,900.0000	\$38,900.00		
-		ISTING STRUCTURE AT STATION				
0261	806500000-N	1.000 LS	\$5,560.0000	\$5,560.00		
	ASBESTOS ASSE	SSMENT				
0262	8112730000-N	2.000 EA	\$5,670.0000	\$11,340.00		
	PDA TESTING					
0263	812100000-N       1.000 LS       \$16,700.0000       \$16,700.         UNCLASSIFIED STRUCTURE EXCAVA-TION AT STATION ******* (156+55.00 -L- RT)					
0264	8147000000-E REINFORCED CO	4616.000 SF NCRETE DECK SLAB	\$128.0000	\$590,848.00		
0265	8161000000-E	7147.000 SF	\$2.2500	\$16,080.75		
	GROOVING BRID	GE FLOORS				
0266	818200000-E Class a concri		\$1,330.0000	\$245,784.00		
0267	821000000-N BRIDGE APPROA	1.000 LS CH SLABS, STATION*********	\$93,300.0000 ** (156+55.00 -L- LT)	\$93,300.00		
0268		1.000 LS CH SLABS, STATION*********	\$93,300.0000 ** (156+55.00 -L- RT)	\$93,300.00		
0269	8217000000-E REINFORCING S'	23590.000 LB FEEL (BRIDGE)	\$2.5000	\$58,975.00		
0270	8259000000-E 36" PRESTRESSI	577.790 LF ED CONCRETE GIR- DERS	\$240.0000	\$138,669.60		
0271		24.000 EA EQUIPMENT SETUP (HP 12 X 53)	\$2,220.0000	\$53,280.00		
0272	8364000000-E HP12X53 STEEL		\$82.0000	\$157,440.00		
0273	8393000000-N PILE REDRIVES		\$55.5000	\$666.00		
0274	850300000-E Concrete barr.		\$260.0000	\$60,632.00		
0275	8657000000-N ELASTOMERIC B	1.000 LS EARINGS	\$5,560.0000	\$5,560.00		
0276	8892000000-E GENERIC STRUC	14202.000 SF FURE ITEM 18" GALVANIZED STR	\$60.0000 EEL SHEET PILES	\$852,120.00		
Section 0004						

Item Total

\$86,385,000.00

#### ELECTRONIC BID SUBMISSION

By submitting this bid electronically, I hereby acknowledge that all requirements included in the hard copy proposal, addendum, amendments, plans, standard specifications, supplemental specifications and special provisions are part of the bid and contract. Further, I acknowledge that I have read, understand, accept, acknowledge and agree to comply with all statements in this electronic bid.

#### NON-COLLUSION, DEBARMENT AND GIFT BAN CERTIFICATION

The prequalified bidder declares (or certifies, verifies, or states) under penalty of perjury under the laws of the United States that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the prequalified bidder has not been convicted of violating N.C.G.S. §133-24 within the last three years, and that the prequalified bidder intends to do the work with his own bonafide employees or subcontractors and will not bid for the benefit of another contractor.

By submitting this non-collusion, debarment and gift ban certification, the Contractor is attesting his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. §133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

#### DEBARMENT CERTIFICATION OF PREQUALIFIED BIDDER

Conditions for certification:

1. The prequalified bidder shall provide immediate written notice to the Department if at any time the bidder learns that his certification was erroneous when he submitted his debarment certification or explanation that is file with the Department, or has become erroneous because of changed circumstances.

2. The terms covered transaction, debarred, suspended, ineligible, lower tier

covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded, as used in this provision, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. A copy of the Federal Rules requiring this certification and detailing the definitions and coverages may be obtained from the Contract Officer of the Department.

3. The prequalified bidder agrees by submitting this form, that he will not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in NCDOT contracts, unless authorized by the Department.

4. For Federal Aid projects, the prequalified bidder further agrees that by submitting this form he will include the Federal- Aid Provision titled Required Contract Provisions Federal-Aid Construction Contract (Form FHWA PR 1273) provided by the Department, without subsequent modification, in all lower tier covered transactions.

5. The prequalified bidder may rely upon a certification of a participant in a lower tier covered transaction that he is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless he knows that the certification is erroneous. The bidder may decide the method and frequency by which he will determine the eligibility of his subcontractors.

6. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this provision. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

7. Except as authorized in paragraph 6 herein, the Department may terminate any contract if the bidder knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available by the Federal Government.

#### DEBARMENT CERTIFICATION

The prequalified bidder certifies to the best of his knowledge and belief, that he and his principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records; making false statements; or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph b. of this certification; and

d. Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

e. Will submit a revised Debarment Certification immediately if his status changes and will show in his bid proposal an explanation for the change in status.

If the prequalified bidder cannot certify that he is not debarred, he shall provide an explanation with this submittal. An explanation will not necessarily result in denial of participation in a contract.

Failure to submit a non-collusion and debarment certification will result in the prequalified bidder's bid being considered non-responsive.

#### EXPLANATION:

\_\_\_\_\_

Amendment Count: 1

#### Award Limits on Multiple Projects

By answering YES to this statement, the bidder acknowleges that they are using the award limits on multiple projects? Yes  $\bigcirc$  No  $\odot$ 

A bidder who desires to bid on more than one project on which bids are to be opened on the same date, and who also desires to avoid receiving an award of more projects than he is equipped to handle, may bid on any number of projects but may limit the total amount of work awarded to him on selected projects by completing the AWARD LIMITS ON MULTIPLE PROJECTS.

The Award Limits on Multiple Projects must be filled in on each project bid for which the Bidder desires protection.

It is the desire of the Bidder to be awarded contracts, the value of which

will not exceed a total of for those

projects indicated herein, for which bids will be opened on (MM/DD/YY)

The Award Limits shall apply to the following projects:

Contract Number County

It is agreed that if I am (we are) the low Bidder(s) on indicated projects, the total value of which is more than the above stipulated award limits, the Board of Transportation will award me (us) projects from among those indicated

that have a total value not to exceed the award limit and will result in the lowest total bids to the Department of Transportation.

# DBE List Summary

Bidder ID: 3697

Business Name: Branch Civil, Inc.

Project: STATE FUNDED Bid Total: 86,385,000.00 Goal: 7.00% (6,046,950.00) Total Entered: 7.15% (6,176,785.61)

ID Name Is Supplier? Item Count Amount Is Complete? 12278 CLIFTON CONSTRUCTION CO INC False 7 237,920.00 True 19102 PINNACLE GRINDING AND 2 25,696.32 GROOVING, False True LLC 1,632,968.67 16877 ROADWORKS CONSTRUCTION COMPANY LLC False 21 True 11852 SADLER LANDSCAPING LLC False 23 3,450,106.59 True 18910 J EBRON & SON TRUCKING False 1 200,005.00 True 4761 TRAFFIC CONTROL SAFETY 88,565.00 SERVICES, False 10 True INC. 4761 TRAFFIC CONTROL SAFETY SERVICES, True 10 179,005.80 True INC. 15450 DIXON PAVING INC False 3 80,907.30 True 15521 4 D CONSTRUCTION False 4 33,949.68 True 3376 REYNOLDS FENCE & GUARDRAIL INC False 11 247,661.25 True

Letting: L220419 04/19/2022 02:00:00 PM	North Carolina Department of Transportation 3697 - Branch Civil, Inc.	Contract ID: (
Name: CLIFTON CONSTRUCTION	CO INC ID: 12278	
Address: 1435 GIDDENSVILLE	ROAD , FAISON, NC 28341	
Used As: SubContractor DBE	Items Total:\$237,920.00	
It	tems for CLIFTON CONSTRUCTION CO INC	

0001 ROADWAY I	TEMS - NPAR (BEAUFORT COUN	ΓY)			
0001	0000100000-N MOBILIZATION	1.000	LS	\$4,000.0000	\$4,000.00
0072	2022000000-E SUBDRAIN EXCAV	1344.000 VATION	СҮ	\$35.0000	\$47,040.00
0073	202600000-E GEOTEXTILE FOR	4000.000 SUBSURFACE	SY DRAINS	\$14.0000	\$56,000.00
0074	203600000-E SUBDRAIN COARS	672.000 E AGGREGATE	СҮ	\$80.0000	\$53,760.00
0075	2044000000-E 6" PERFORATED	4000.000 SUBDRAIN PIPE	LF	\$18.0000	\$72,000.00
0076	207000000-N SUBDRAIN PIPE	8.000 OUTLET	EA	\$400.0000	\$3,200.00
0077	2077000000-E 6" OUTLET PIPE	48.000	LF	\$40.0000	\$1,920.00
Section 0001	l Total				\$237,920.00

Item Total

\$237,920.00

C204498 Call: 001

Letting: L220419 04/19/2022 02:00:00 PM	North Carolina Department of Transportation 3697 - Branch Civil, Inc.	Contract ID: C204498 Call: 001
Name: PINNACLE G	RINDING AND GROOVING, LLC ID: 19102	
Address: 275 HIL	L STREET SUITE 220 , RENO, NV 89501	
Used As: SubCont	ractor DBE Items Total:\$25,696.32	

### Items for PINNACLE GRINDING AND GROOVING, LLC

0001	0000100000-N MOBILIZATION	1.000 LS	\$12,300.0000	\$12,300.00
0071	1840000000-E	212640.000 LF	\$0.0630	\$13,396.32
	MILLED RUMBLE S	TRIPS (ASPHALT CONCRETE)		,
Section 0001	Total			\$25,696.32

Check: C9132F83EA Amendment Count: 1

Letting: L220419 04/19/2022 02:00:00 PM	North Carolina Department of Transportation 3697 - Branch Civil, Inc.	Contract ID: C204498 Call: 001
Name: ROADWORKS CONS	STRUCTION COMPANY LLC ID: 16877	
Address: 5401 BUCKWC	DOD DRIVE , APEX, NC 27539	
Used As: SubContract	tor DBE Items Total:\$1,632,968.67	

#### Items for ROADWORKS CONSTRUCTION COMPANY LLC

0001 ROADWAY ITE	MS - NPAR (BEAUFORT COUNT	ΥY)			
0001	0000100000-N MOBILIZATION	1.000	LS	\$156,391.0000	\$156,391.00
0017	0196000000-E GEOTEXTILE FOR		SY ZA-TION	\$2.1300	\$828.57
0108	3628000000-E RIP RAP, CLASS		TON	\$92.0400	\$23,470.20
0112	3656000000-E GEOTEXTILE FOR	360 DRAINAGE	SY	\$4.5500	\$1,638.00
0214	6045000000-E **" TEMPORARY	332 PIPE (42")	LF	\$263.4000	\$87,448.80
0215	6045000000-E **" TEMPORARY	154 PIPE (48")	LF	\$483.0000	\$74,382.00
0217	6069000000-E STILLING BASIN		СҮ	\$86.0000	\$6,106.00
0218	6070000000-N SPECIAL STILLI		EA	\$1,174.0000	\$4,696.00
0222	6071030000-E COIR FIBER BAF	126 FLE	LF	\$12.5500	\$1,581.30
0234	6111000000-E IMPERVIOUS DIK	355.000 E	LF	\$113.2000	\$40,186.00
0237	6117500000-N CONCRETE WASHO		EA	\$1,770.0000	\$10,620.00
0238	6120000000-E CULVERT DIVERS	181.000 ION CHANNEL	СҮ	\$115.0000	\$20,815.00
Section 0001 T	otal				\$428,162.87
0002 CULVERT ITE	MS				
0254	812600000-N	1.000	LS	\$49,920.0000	\$49,920.00

0254	8126000000-N 1.000 LS	\$49,920.0000	\$49,920.00
	CULVERT EXCAVATION, STA ***** (345+79.00 -L-)		
0255	8126000000-N 1.000 LS CULVERT EXCAVATION, STA ***** (365+81.00 -L-)	\$50,200.0000	\$50,200.00
	CULVERT EXCAVATION, STA ****** (365+81.00 -L-)		
0256	8126000000-N 1.000 LS CULVERT EXCAVATION, STA ***** (69+25.50 -L-)	\$38,760.0000	\$38,760.00
0257	8133000000-E 980.000 TON	\$58.1000	\$56,938.00

# North Carolina Department of Transportation 3697 - Branch Civil, Inc.

0258	819600000-E	873.500 CY	\$827.0000	\$722,384.50
	CLASS A CONC	RETE (CULVERT)		
0259	8245000000-E	114362.000 LB	\$2.1500	\$245,878.30
	REINFORCING	STEEL (CULVERT)		
0277	805600000-N	1.000 LS	\$14,420.0000	\$14,420.00
	REMOVAL OF E	XISTING STRUCTURE AT STATIC	DN *********** (69+25.50 L-)	
0279	805600000-N	1.000 LS	\$10,500.0000	\$10,500.00
	REMOVAL OF E	XISTING STRUCTURE AT STATIC	N *********** (345+79.00 −L-	• )
0280	805600000-N	1.000 LS	\$15,805.0000	\$15,805.00
	REMOVAL OF E	XISTING STRUCTURE AT STATIC	N *********** (365+81.00 -L-	•)

Item Total

\$1,632,968.67

0500 715.	SubContractor DBE Items Total:	\$3,450,106	. 59	
	Items for SADLER	R LANDSCAPING 1	LLC	
0001				
0001	ITEMS - NPAR (BEAUFORT COUNTY) 0000100000-N 1.000 MOBILIZATION	LS	\$280,000.0000	\$280,000.00
0196	600000000-E 292695.000 TEMPORARY SILT FENCE	LF	\$2.1800	\$638,075.10
0200	601500000-E 378.000 ТЕМРОГАКҮ MULCHING	ACR	\$983.5000	\$371,763.00
0201	601800000-E 14300.000 SEED FOR TEMPORARY SEEDING	LB	\$3.5500	\$50 <b>,</b> 765.00
0202	6021000000-E 73.000 FERTILIZER FOR TEMPORARY SEE		\$1,452.0000	\$105,996.00
0204	602900000-E 6700.000 SAFETY FENCE	LF	\$2.1800	\$14,606.00
0206	603600000-E 252745.000 MATTING FOR EROSION CONTROL	SY	\$1.0600	\$267,909.70
0207	603700000-Е 2010.000 COIR FIBER MAT	SY	\$4.9900	\$10,029.90
0208	603800000-E 900.000 PERMANENT SOIL REINFORCEMENT		\$5.9900	\$5,391.00
0209	604200000-E 6520.000 1/4" HARDWARE CLOTH	LF	\$6.4500	\$42,054.00
0219	6071012000-Е 22080.000 COIR FIBER WATTLE	LF	\$10.1200	\$223,449.60
0220	6071014000-E 7687.000 COIR FIBER WATTLE BARRIER	LF	\$11.4900	\$88,323.63
0221	6071020000-E 32735.000 POLYACRYLAMIDE (PAM)	LB	\$7.4500	\$243,875.75
0222	6071030000-Е 7499 COIR FIBER BAFFLE	LF	\$6.5900	\$49,418.41
0228	6084000000-E 249.000 SEEDING & MULCHING	ACR	\$2,650.0000	\$659,850.00
0229	608700000-Е 288.000 MOWING	ACR	\$195.0000	\$56,160.00
0230	609000000-E 3800.000 SEED FOR REPAIR SEEDING	LB	\$15.6100	\$59,318.00
0231	6093000000-E 12.000 FERTILIZER FOR REPAIR SEEDIN		\$1,700.0000	\$20,400.00

North Carolina Department of Transportation

3697 - Branch Civil, Inc.

Letting: L220419

04/19/2022 02:00:00 PM

Name: SADLER LANDSCAPING LLC ID: 11852

Letting: L220419 04/19/2022 02:00:00 P	М	North Carolina Departn 3697 - Branc			Contract ID: C204498 Call: 001
0232	609600000-E SEED FOR SU	6100.000 JPPLEMENTAL SEEDIN		\$4.1500	\$25,315.00
0233	6108000000-E FERTILIZER	183.000 TOPDRESSING	TON	\$1,285.0000	\$235,155.00
0235	6114500000-N SPECIALIZEI	10.000 D HAND MOWING	MHR	\$125.0000	\$1,250.00
0236	6117000000-N RESPONSE FO	150.000 DR EROSION CONTROL	EA	\$0.0100	\$1.50
0239	6123000000-E REFORESTAT:	0.100 ION	ACR	\$10,000.0000	\$1,000.00
Section 0001 Tota	al				\$3,450,106.59

Item Total

\$3,450,106.59

Letting: L220419 North Ca 04/19/2022 02:00:00 PM	arolina Department of Transportation 3697 - Branch Civil, Inc.	Contract ID: C204498 Call: 001
Name: J EBRON & SON TRUCKING ID	: 18910	
Address: 3860 BRICK KILN ROAD	, GREENVILLE, NC 27858	
Used As: SubContractor DBE Item:	s Total:\$200,005.00	

#### Items for J EBRON & SON TRUCKING

0068	152300000-E	23530 TON	\$8.5000	\$200,005.00
	ASPHALT CONC S	SURFACE COURSE, TYPE S9.5C		
Note: Haul A	sphalt and Plant Stockpile			
Section 0001	Total			\$200,005.00

Letting: L220419 04/19/2022 02:00:00 PM	North Carolina Department of Transportation 3697 - Branch Civil, Inc.	Contract ID: C204498 Call: 001
Name: TRAFFIC	CONTROL SAFETY SERVICES, INC. ID: 4761	
Address: POST	OFFICE BOX 24511 , WINSTON-SALEM, NC 27114	
Used As: SubCo	ntractor DBE Items Total:\$88,565.00	

#### Items for TRAFFIC CONTROL SAFETY SERVICES, INC.

ROADWAY I	TEMS - NPAR (BEAUFORT COU	NTY)		
0001	0000100000-N	1.000 LS	\$4,500.0000	\$4,500.00
	MOBILIZATION			
0113	407200000-E	206.000 LF	\$15.0000	\$3,090.00
	SUPPORTS, 3-I	LB STEEL U-CHANNEL		
0114	408200000-E	3868.000 LF	\$15.0000	\$58,020.00
	SUPPORTS, WOO	D		
0115	409600000-N	16.000 EA	\$125.0000	\$2,000.00
	SIGN ERECTION	I, TYPE D		
0116	410200000-N	149.000 EA	\$80.0000	\$11,920.00
	SIGN ERECTION	I, TYPE E		
0117	4108000000-N	54.000 EA	\$125.0000	\$6 <b>,</b> 750.00
	SIGN ERECTION	I, TYPE F		
0118	4116100000-N	3.000 EA	\$300.0000	\$900.00
	SIGN ERECTION	I, RELOCATE TYPE ****	(GROUND MOUNTED) (D)	
0119	4116100000-N	3.000 EA	\$300.0000	\$900.00
	SIGN ERECTION	I, RELOCATE TYPE ****	(GROUND MOUNTED) (E)	
0120	4141000000-N	6.000 EA	\$5.0000	\$30.00
	DISPOSAL OF S	SUPPORT, WOOD		
0121	4158000000-N	91.000 EA	\$5.0000	\$455.00
	DISPOSAL OF S	SIGN SYSTEM, WOOD		
Section 0001	Total			\$88,565.00
Section 0001	IOCAL			200,000.00
Item Total				\$88,565.00

Letting: L220419 04/19/2022 02:00:00 PM	North Carolina Department of Transportation 3697 - Branch Civil, Inc.	Contract ID: C204498 Call: 001
Name: TRAFFIC	CONTROL SAFETY SERVICES, INC. ID: 4761	
Address: POST	OFFICE BOX 24511 , WINSTON-SALEM, NC 27114	
Used As: Suppl	ier DBE Items Total:\$298,343.00	

#### Items for TRAFFIC CONTROL SAFETY SERVICES, INC.

0001 ROADWAY I	TEMS - NPAR (BEAUFORT COUN	ITY)			
0122	440000000-E	4689.000	SF	\$10.0000	\$46,890.00
	WORK ZONE SIG	NS (STATIONARY)			
0123	440500000-E	472.000	SF	\$9.0000	\$4,248.00
	WORK ZONE SIG	NS (PORTABLE)			
0124	441000000-E	730.000	SF	\$7.0000	\$5,110.00
	WORK ZONE SIG	NS (BARRICADE	MOUNTED)		
0125	441500000-N	4.000	EA	\$4,250.0000	\$17,000.00
	FLASHING ARRO	W BOARD			
0126	442000000-N	3.000	EA	\$17,000.0000	\$51,000.00
	PORTABLE CHAN	GEABLE MESSAGE	SIGN		
0127	443000000-N	1035.000	EA	\$43.0000	\$44,505.00
	DRUMS				
0128	443500000-N	242.000	EA	\$23.0000	\$5,566.00
	CONES				
0129	444500000-E	520.000	LF	\$25.0000	\$13,000.00
	BARRICADES (T	YPE III)			
0133	448000000-N	2.000	EA	\$55,000.0000	\$110,000.00
	TMA				
0138	451600000-N	32.000	EA	\$32.0000	\$1,024.00
	SKINNY DRUM				
Section 0001	Total				\$298,343.00
Item Total					\$298,343.00

Letting: L220419 04/19/2022 02:00:00 PM	North Carolina Department of Transportation 3697 - Branch Civil, Inc.	Cont	ract ID: C204498 Call: 001
Name: DIXON PAVING INC ID	: 15450		
Address: 4801 GLENWOOD AV	ENUE SUITE 200 , RALEIGH, NC 2	7612	
Used As: SubContractor DB	E Items Total:\$80,907.30		
	Items for DIXON PAVING INC		
0001 ROADWAY ITEMS - NPAR (BEAUFORT	COUNTY)		
0001 0000100000-N MOBILIZAT:	1.000 LS ION	\$12,000.0000	\$12,000.00
0013 0156000000-E REMOVAL OI	42440.000 SY F EXISTING ASPHALT PAVEMENT	\$1.5700	\$66,630.80
0064 133000000-E INCIDENTAL	1450.000 SY L MILLING	\$1.5700	\$2,276.50
Section 0001 Total			\$80,907.30

Item Total

\$80,907.30

Letting: L220419 04/19/2022 02:00:00 PM	North Carolina Department of Transportation 3697 - Branch Civil, Inc.	Contract ID: C204498 Call: 001
Name: 4 D CONSTRUCTION	ID: 15521	
Address: P.O. BOX 806	, MAXTON, NC 28364	
Used As: SubContractor	DBE Items Total:\$33,949.68	

#### Items for 4 D CONSTRUCTION

0264	8147000000-E	4040 SF	\$5.8900	\$23,795.60
0007		CONCRETE DECK SLAB	ČA 170 AA00	Ċ4 170 44
0267	8210000000-N BRIDGE APP	1.000 LS ROACH SLABS, STATION**********	\$4,170.4400 (156+55.00 -L- LT)	\$4,170.44
0268	8210000000-N BRIDGE APP	1.000 LS ROACH SLABS, STATION**********	\$4,066.7400 (156+55.00 -L- RT)	\$4,066.74
0274	850300000-E Concrete B	233.200 LF ARRIER RAIL	\$8.2200	\$1,916.90
Section 000	94 Total			\$33,949.68
				· · ·
Item Total				\$33,949.68

Used As:	SubContractor DBE Items Total:\$247,661.25		
	Items for REYNOLDS FENCE & GUARDRAIL INC		
0001 ROADWAY I	ITEMS - NPAR (BEAUFORT COUNTY)		
0094	303000000-E 3637.500 LF STEEL BEAM GUARDRAIL	\$27.5000	\$100,031.25
0095	304500000-E 150.000 LF STEEL BEAM GUARDRAIL, SHOP CURVED	\$30.0000	\$4,500.00
0096	319500000-N 3.000 EA GUARDRAIL END UNITS, TYPE AT-1	\$1,050.0000	\$3,150.00
0097	321000000-N 9.000 EA GUARDRAIL END UNITS, TYPE CAT-1	\$1,200.0000	\$10,800.00
0098	328700000-N 11.000 EA GUARDRAIL END UNITS, TYPE TL-3	\$3,600.0000	\$39,600.00
0099	328800000-N 1.000 EA GUARDRAIL END UNITS, TYPE TL-2	\$3,500.0000	\$3,500.00
0100	331700000-N 4.000 EA GUARDRAIL ANCHOR UNITS, TYPE B-77	\$3,400.0000	\$13,600.00
0101	336000000-E 590.000 LF REMOVE EXISTING GUARDRAIL	\$2.0000	\$1,180.00
0102	338000000-E 3025.000 LF TEMPORARY STEEL BEAM GUARDRAIL	\$12.0000	\$36,300.00
0103	3387000000-N 3.000 EA TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE *******	\$2,500.0000 *** (B-77)	\$7,500.00
0104	3389150000-N 11.000 EA TEMPORARY GUARDRAIL END UNITS, TYPE ***** (TL-3)	\$2,500.0000	\$27,500.00
Section 0003	1 Total		\$247,661.25

North Carolina Department of Transportation

3697 - Branch Civil, Inc.

Letting: L220419

04/19/2022 02:00:00 PM

Name: REYNOLDS FENCE & GUARDRAIL INC ID: 3376

\$247,661.25

Contract ID: C204498

Call: 001

Letting: L220419 04/19/2022 02:00:00 PM	North Carolina Department of Transportation 3697 - Branch Civil, Inc.	Contract ID: C204498 Call: 001
THIS PROPOSAL CONTAINS	THE FOLLOWING ERRORS/WARNINGS	(IF ANY)
ROADWORKS CONSTRUCTION	COMPANY LLC/DBE: 0017 Price	is over commmited
ROADWORKS CONSTRUCTION	COMPANY LLC/DBE: 0108 Price	is over commmited
ROADWORKS CONSTRUCTION	COMPANY LLC/DBE: 0112 Price	is over commmited
ROADWORKS CONSTRUCTION	COMPANY LLC/DBE: 0215 Price	is over commmited
ROADWORKS CONSTRUCTION	COMPANY LLC/DBE: 0217 Price	is over commmited
ROADWORKS CONSTRUCTION	COMPANY LLC/DBE: 0222 Price	is over commmited
ROADWORKS CONSTRUCTION	COMPANY LLC/DBE: 0237 Price	is over commmited

This Bid contains 1 amendment files

000001 04/05/2022 ADD ITEMS

## Electronic Bid Submission

By submitting this bid electronically, I hereby acknowledge that all requirements included in the hard copy proposal, addendum, amendments, plans, standard specifications, supplemental specifications and special provisions are part of the bid and contract. Further, I acknowledge that I have read, understand, accept, acknowledge and agree to comply with all statements in this electronic bid.

I hereby certify that I have the authority to submit this bid.

Signature \_\_\_\_\_

Agency \_\_\_\_\_

Date \_\_\_\_\_

Signature \_\_\_\_\_

Agency \_\_\_\_\_

Date \_\_\_\_\_

Signature \_\_\_\_\_

Agency \_\_\_\_\_

Date \_\_\_\_\_

## Attachments

Failure to complete and attach the Fuel Usage Factor Adjustment Form will result in using 2.90 gallons per ton as the Fuel Usage Factor for Diesel for the asphalt items included on the form. The contractor will not be permitted to change the option after the bids are submitted.

# North Carolina Department Of Transportation

Page : 1 of 17

Contract Item Sheets For C204498

Unit Bid	Quantity		Sec	ItemNumber	Line
Price	Unit	Description	#		#
		ROADWAY ITEMS			
4,300,000.00	Lump Sum LS	MOBILIZATION	800	0000100000-N	0001
900,000.00	Lump Sum LS	CONSTRUCTION SURVEYING	801	0000400000-N	0002
750,000.00	Lump Sum LS	FIELD OFFICE	SP	0000700000-N	0003
7,500,000.00	Lump Sum LS	CLEARING & GRUBBING ACRE(S)	200	0001000000-Е	0004
17,400.00	3 ACR	SUPPLEMENTARY CLEARING & GRUB- BING	200	0008000000-E	0005
5.00	70,350 CY	UNCLASSIFIED EXCAVATION	225	0022000000-E	0006
50,000.00	Lump Sum LS	TYPE I STANDARD APPROACH FILL STATION ********** (156+55.00 -L- LT)	SP	0028000000-N	0007
50,000.00	Lump Sum LS	TYPE I STANDARD APPROACH FILL STATION ********* (156+55.00 -L- RT)	SP	0028000000-N	0008
15.00	36,326 CY	UNDERCUT EXCAVATION	225	0036000000-E	0009
9.75	1,557,620 CY	BORROW EXCAVATION	230	0106000000-Е	0010
3,650.00	10 EA	EMBANKMENT SETTLEMENT GAUGES	235	0127000000-N	0011
3.25	143,430 CY	DRAINAGE DITCH EXCAVATION	240	0134000000-Е	0012
4.75	42,440 SY	REMOVAL OF EXISTING ASPHALT PAVEMENT	250	0156000000-E	0013
1.50	136,010 SY	BREAKING OF EXISTING ASPHALT PAVEMENT	250	0177000000-E	0014
257.00	107 HR	PROOF ROLLING	260	0192000000-N	0015
9.75	66,000 CY	SELECT GRANULAR MATERIAL, CLASS III	265	0194000000-E	0016
1.50	75,400 SY	GEOTEXTILE FOR SOIL STABILIZA- TION	270	0196000000-E	0017
40.00	 10,003 SF	TEMPORARY SHORING	SP	0199000000-E	0018
	900,000.00 750,000.00 7,500,000.00 17,400.00 5.00 50,000.00 50,000.00 50,000.00 15.00 9.75 3,650.00 9.75 3,25 4.75 1.50 9.75	LS           Lump Sum LS         900,000.00 LS           Lump Sum LS         750,000.00 LS           Lump Sum LS         7,500,000.00 LS           3         17,400.00 ACR           70,350 CY         5.00 CY           Lump Sum LS         50,000.00 LS           Lump Sum LS         50,000.00 CY           36,326 CY         15.00 CY           1,557,620 CY         9.75 CY           10 SY         3,650.00 EA           143,430 CY         3.25 CY           12,517         9.75 CY           10 SY         1.50 SY           136,010 SY         1.50 SY           107 HR         257.00 9.75 CY           107 SY         1.50 SY           107 SY         1.50 SY	MOBILIZATIONLump Sum LS4,300,000.00 LSCONSTRUCTION SURVEYINGLump Sum LS900,000.00 LSFIELD OFFICELump Sum LS750,000.00 LSCLEARING & GRUBBING ACRE(S)Lump Sum LS7,500,000.00 LSSUPPLEMENTARY CLEARING & GRUB- BING3 ACR17,400.00 ACRUNCLASSIFIED EXCAVATION70,350 CY5.00 S00.00TYPE I STANDARD APPROACH FILL STATIONLump Sum LS50,000.00 LSUNDERCUT EXCAVATION36,326 CY15.00UNDERCUT EXCAVATION1,557,620 CY9.75 CYBORROW EXCAVATION1,557,620 SY3.25 CYDRAINAGE DITCH EXCAVATION143,430 SY3.25 CYPROOF ROLLING107 SY257.00 HRPROOF ROLLING107 CY257.00 HRPROOF ROLLING107 SY257.00 HRPROOF ROLLING107 CY257.00 HRTEMPORARY SHORING10,003 SY1.50 SY	800         MOBILIZATION         Lump Sum LS         4,300,000.00 LS           801         CONSTRUCTION SURVEYING         Lump Sum LS         900,000.00 LS           SP         FIELD OFFICE         Lump Sum LS         750,000.00 LS           200         CLEARING & GRUBBING ACRE(S)         Lump Sum LS         7,500,000.00 LS           201         SUPPLEMENTARY CLEARING & GRUB- BING         3         17,400.00 ACR           225         UNCLASSIFIED EXCAVATION         70,350 CY         5.00           SP         TYPE I STANDARD APPROACH FILL STATION ********         Lump Sum LS         50,000.00           SP         TYPE I STANDARD APPROACH FILL (156+55.00 -L - LT)         Lump Sum LS         50,000.00           SP         TYPE I STANDARD APPROACH FILL (156+55.00 -L - RT)         Lump Sum LS         50,000.00           225         UNDERCUT EXCAVATION         36.326 CY         15.00           230         BORROW EXCAVATION         1,557,620 CY         9.75           231         EMBANKMENT SETTLEMENT GAUGES         10 3,650.00         3,25           240         DRAINAGE DITCH EXCAVATION         143,430 SY         3.25           250         REMOVAL OF EXISTING ASPHALT PAVEMENT         150,010 SY         1.50           260         PROOF ROLLING	0000100000-N         800         MOBILIZATION         Lump Sum LS         4,300.000.00 LS           0000400000-N         801         CONSTRUCTION SURVEYING         Lump Sum LS         900.000.00 LS           0000700000-N         SP         FIELD OFFICE         Lump Sum LS         750.000.00 LS           0001000000-E         200         CLEARING & GRUBBING ACRE(S)         Lump Sum LS         7,500.000.00 LS           0008000000-E         200         SUPPLEMENTARY CLEARING & GRUB- BING         3 ACR         17,400.00 CY           0028000000-E         225         UNCLASSIFIED EXCAVATION         70.350 CY         5.00 CY           0028000000-N         SP         TYPE ISTANDARD APPROACH FILL STATION         Lump Sum LS         50.000.00 LS           0028000000-N         SP         TYPE ISTANDARD APPROACH FILL STATION         Lump Sum LS         50.000.00 CY           0036000000-E         225         UNDERCUT EXCAVATION         36.326 CY         15.00 CY           0106000000-E         230         BORROW EXCAVATION         1.557,620 CY         3.660.00 CY           0127000000-E         230         BORROW EXCAVATION         1.50 CY         3.660.00 CY         3.255           0134000000-E         240         DRAINAGE DITCH EXCAVATION         143.430 CY         3.265

# North Carolina Department Of Transportation Contract Item Sheets For C204498

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Contract	Item Sheets For C204498	
ription		Quantity

Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
0019	0222000000-E	SP	GEOTEXTILE FOR ROCK EMBANK- MENTS	500 SY	6.00	3,000.00
0020	0318000000-E	300	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRUCTURES	5,770 TON	35.50	204,835.00
0021	0320000000-E	300	FOUNDATION CONDITIONING GEO- TEXTILE	33,700 SY	2.50	84,250.00
0022	0335200000-E	305	15" DRAINAGE PIPE	1,076 LF	35.50	38,198.00
0023	0335300000-E	305	18" DRAINAGE PIPE	188 LF	40.00	7,520.00
0024	0335400000-E	305	24" DRAINAGE PIPE	324 LF	54.50	17,658.00
0025	0335500000-E	305	30" DRAINAGE PIPE	180 LF	81.00	14,580.00
0026	0335600000-E	305	36" DRAINAGE PIPE	44 LF	121.00	5,324.00
0027	0335700000-E	305	42" DRAINAGE PIPE	108 LF	143.00	15,444.00
0028	0335800000-E	305	48" DRAINAGE PIPE	28 LF	200.00	5,600.00
0029	0342000000-E	310	**" SIDE DRAIN PIPE (30")	128 LF	80.00	10,240.00
0030	0342000000-E	310	**" SIDE DRAIN PIPE (36")	76 LF	98.50	7,486.00
0031	0343000000-E	310	15" SIDE DRAIN PIPE	3,808 LF	36.00	137,088.00
0032	0344000000-E	310	18" SIDE DRAIN PIPE	1,652 LF	41.00	67,732.00
0033	0345000000-E	310	24" SIDE DRAIN PIPE	1,388 LF	55.00	76,340.00
0034	0366000000-E	310	15" RC PIPE CULVERTS, CLASS III	7,528 LF	40.00	301,120.00
0035	0372000000-E	310		364 LF	47.50	17,290.00
0036	0378000000-E	310	24" RC PIPE CULVERTS, CLASS III	636 LF	67.50	42,930.00
0037	0384000000-E	310	30" RC PIPE CULVERTS, CLASS III	1,404 LF	97.50	136,890.00

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Contract	Item Sheets For C204498	
ntion		Quantity

	Contract Item Sheets For C204498									
Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid				
0038	039000000-E	310	36" RC PIPE CULVERTS, CLASS III	2,988 LF	128.00	382,464.00				
0039	0396000000-E	310	42" RC PIPE CULVERTS, CLASS III	1,084 LF	163.00	176,692.00				
0040	0402000000-E	310	48" RC PIPE CULVERTS, CLASS III	1,288 LF	201.00	258,888.00				
0041	0408000000-E	310	54" RC PIPE CULVERTS, CLASS III	352 LF	303.00	106,656.00				
0042	0420000000-E	310	66" RC PIPE CULVERTS, CLASS III	848 LF	477.00	404,496.00				
0043	0448000000-E	310	****" RC PIPE CULVERTS, CLASS IV (66")	180 LF	543.00	97,740.00				
0044	0448200000-E	310	15" RC PIPE CULVERTS, CLASS IV	5,676 LF	47.00	266,772.00				
0045	0448300000-E	310	18" RC PIPE CULVERTS, CLASS IV	 180 LF	58.50	10,530.00				
0046	0448500000-E	310	30" RC PIPE CULVERTS, CLASS IV	276 LF	111.00	30,636.00				
0047	0448600000-E	310	36" RC PIPE CULVERTS, CLASS IV	188 LF	145.00	27,260.00				
0048	0973100000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B IN SOIL (36", 0.500")	166 LF	818.00	135,788.00				
0049	0973100000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B IN SOIL (54", 0.750")	92 LF	1,970.00	181,240.00				
0050	0973100000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B IN SOIL (66", 0.875")	92 LF	2,230.00	205,160.00				
0051	0973300000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B NOT IN SOIL (36", 0.500")	166 LF	1,860.00	308,760.00				
0052	0973300000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B NOT IN SOIL (54", 0.750")	92 LF	2,900.00	266,800.00				
0053	0973300000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B NOT IN SOIL (66", 0.875")	92 LF	3,150.00	289,800.00				

# North Carolina Department Of Transportation Contract Item Sheets For C204498

Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
0054	000000000			00	404.00	14 499 99
0054	0986000000-E	SP	GENERIC PIPE ITEM 15" CS SLOTTED DRAIN, 0.064" THICK	80 LF	181.00	14,480.00
0055	0995000000-E	340	PIPE REMOVAL	11,593 LF	18.00	208,674.00
0056	1011000000-N	500	FINE GRADING	Lump Sum LS	1,563,302.15	1,563,302.15
0057	1077000000-E	SP	#57 STONE	1,030 TON	56.50	58,195.00
0058	1099500000-E	505	SHALLOW UNDERCUT	1,500 CY	16.00	24,000.00
0059	1099700000-E	505	CLASS IV SUBGRADE STABILIZA- TION	2,860 TON	31.50	90,090.00
0060	1111000000-E	SP	CLASS IV AGGREGATE STABILIZA- TION	1,000 TON	47.50	47,500.00
0061	1121000000-Е	520	AGGREGATE BASE COURSE	199,600 TON	32.50	6,487,000.00
0062	1220000000-E	545	INCIDENTAL STONE BASE	3,000 TON	33.50	100,500.00
0063	1275000000-E	600	PRIME COAT	462 GAL	31.50	14,553.00
0064	1330000000-E	607	INCIDENTAL MILLING	1,450 SY	2.00	2,900.00
0065	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	7,170 TON	95.00	681,150.00
0066	1503000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE 119.0C	97,560 TON	69.00	6,731,640.00
0067	1519000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	2,310 TON	90.00	207,900.00
0068	1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	81,600 TON	70.00	5,712,000.00
0069	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	10,055 TON	450.00	4,524,750.00
0070	1693000000-E	654	ASPHALT PLANT MIX, PAVEMENT REPAIR	750 TON	261.00	195,750.00
0071	1840000000-E	665	MILLED RUMBLE STRIPS (ASPHALT CONCRETE)	212,640 LF	0.20	42,528.00

ItemNumber

Sec

Line

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0072

0073

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0088

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0091

2556000000-E

846

SHOULDER BERM GUTTER

0086

# North Carolina Department Of Transportation Contract Item Sheets For C204498

Amount

Unit Bid

Contract	Item Sheets For C204498	
Description		Quantity

ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
2022000000-E	815	SUBDRAIN EXCAVATION	1,344 CY	39.50	53,088.00
2026000000-E	815	GEOTEXTILE FOR SUBSURFACE DRAINS	4,000 SY	16.00	64,000.00
2036000000-E	815	SUBDRAIN COARSE AGGREGATE	672 CY	90.50	60,816.00
2044000000-E	815	6" PERFORATED SUBDRAIN PIPE	4,000 LF	20.50	82,000.00
2070000000-N	815	SUBDRAIN PIPE OUTLET	8 EA	452.00	3,616.00
2077000000-E	815	6" OUTLET PIPE	48 LF	88.50	4,248.00
2209000000-E	838	ENDWALLS	113 CY	1,630.00	184,190.00
2220000000-E	838	REINFORCED ENDWALLS	38.8 CY	2,330.00	90,404.00
2253000000-E	840	PIPE COLLARS	2.701 CY	2,300.00	6,212.30
2264000000-E	840	PIPE PLUGS	0.029 CY	18,000.00	522.00
2275000000-E	SP	FLOWABLE FILL	197 CY	252.00	49,644.00
2286000000-N	840	MASONRY DRAINAGE STRUCTURES	227 EA	3,500.00	794,500.00
2297000000-E	840	MASONRY DRAINAGE STRUCTURES	37.35 CY	2,900.00	108,315.00
2308000000-E	840	MASONRY DRAINAGE STRUCTURES	22.26 LF	305.00	6,789.30
2364000000-N	840	FRAME WITH TWO GRATES, STD 840.16	96 EA	598.00	57,408.00
2364200000-N	840	FRAME WITH TWO GRATES, STD 840.20	5 EA	614.00	3,070.00
2365000000-N	840	FRAME WITH TWO GRATES, STD 840.22	122 EA	614.00	74,908.00
2396000000-N	840	FRAME WITH COVER, STD 840.54	1 EA	443.00	443.00
2451000000-N	852	CONCRETE TRANSITIONAL SECTION FOR DROP INLET	93 EA	1,300.00	120,900.00

194

LF

70.00

13,580.00

ItemNumber

Line

#

# North Carolina Department Of Transportation Contract Item Sheets For C204498

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Amount

Bid

Unit Bid

Price

	Contract Item Sheets For C204498					
Sec #	Description	Quantity Unit				

58,050.00	135.00	430 SY	6" CONCRETE DRIVEWAY	848	2612000000-E	0092
1,392,510.00	133.00	10,470 SY	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN)	852	2655000000-E	0093
109,125.00	30.00	3,637.5 LF	STEEL BEAM GUARDRAIL	862	3030000000-E	0094
4,650.00	31.00	150 LF	STEEL BEAM GUARDRAIL, SHOP CURVED	862	3045000000-E	0095
3,450.00	1,150.00	3 EA	GUARDRAIL END UNITS, TYPE AT-1	862	3195000000-N	0096
11,925.00	1,325.00	9 EA	GUARDRAIL END UNITS, TYPE CAT-1	862	321000000-N	0097
44,000.00	4,000.00	11 EA	GUARDRAIL END UNITS, TYPE TL-3	SP	3287000000-N	0098
3,900.00	3,900.00	1 EA	GUARDRAIL END UNITS, TYPE TL-2	SP	3288000000-N	0099
15,000.00	3,750.00	4 EA	GUARDRAIL ANCHOR UNITS, TYPE B-77	SP	3317000000-N	0100
1,327.50	2.25	590 LF	REMOVE EXISTING GUARDRAIL	863	3360000000-E	0101
39,325.00	13.00	3,025 LF	TEMPORARY STEEL BEAM GUARDRAIL	862	3380000000-E	0102
7,800.00	2,600.00	3 EA	TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE ********* (B-77)	SP	3387000000-N	0103
28,600.00	2,600.00	11 EA	TEMPORARY GUARDRAIL END UNITS, TYPE ***** (TL-3)	SP	3389150000-N	0104
336,388.50	3.50	96,111 LF	WOVEN WIRE FENCE, 47" FABRIC	866	3503000000-E	0105
130,218.00	22.00	5,919 EA	4" TIMBER FENCE POSTS, 7'-6" LONG	866	350900000-E	0106
51,817.50	31.50	1,645 EA	5" TIMBER FENCE POSTS, 8'-0" LONG	866	3515000000-Е	0107
74,250.00	82.50	900 TON	RIP RAP, CLASS I	876	3628000000-E	0108
208,440.00	96.50	2,160 TON	RIP RAP, CLASS II	876	3635000000-E	0109

ItemNumber

Line

#

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Amount

Bid

	Contract Item Sheets For C204498					
Sec	Description	Quantity	Unit Bid			
#	-	Unit	Price			

0110	3642000000-E	876	RIP RAP, CLASS A	500 TON	67.00	33,500.00
0111	3649000000-E	876	RIP RAP, CLASS B	1,500 TON	67.00	100,500.00
0112	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	10,100 SY	2.00	20,200.00
0113	4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	206 LF	17.50	3,605.00
0114	4082000000-E	903	SUPPORTS, WOOD	3,868 LF	17.50	67,690.00
0115	4096000000-N	904	SIGN ERECTION, TYPE D	16 EA	146.00	2,336.00
0116	4102000000-N	904	SIGN ERECTION, TYPE E	149 EA	93.50	13,931.50
0117	4108000000-N	904	SIGN ERECTION, TYPE F	54	146.00	7,884.00

0118	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (D)	3 EA	351.00	1,053.00
0119	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (E)	3 EA	351.00	1,053.00
0120	4141000000-N	907	DISPOSAL OF SUPPORT, WOOD	6 EA	5.75	34.50
0121	4158000000-N	907	DISPOSAL OF SIGN SYSTEM, WOOD	91 EA	5.75	523.25
0122	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	4,689 SF	11.00	51,579.00
0123	4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	472 SF	10.00	4,720.00
0124	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	730 SF	7.75	5,657.50
0125	4415000000-N	1115	FLASHING ARROW BOARD	4 EA	4,720.00	18,880.00
0126	4420000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN	3 EA	18,900.00	56,700.00
0127	4430000000-N	1130	DRUMS	1,035 EA	48.00	49,680.00
0128	4435000000-N	1135	CONES	242 EA	25.50	6,171.00

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Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
0129	4445000000-E	1145	BARRICADES (TYPE III)	520 LF	28.00	14,560.00
0130	4455000000-N	1150	FLAGGER	2,400 DAY	325.00	780,000.00
0131	4465000000-N	1160	TEMPORARY CRASH CUSHIONS	14 EA	6,780.00	94,920.00
0132	4470000000-N	1160	REMOVE & RESET TEMPORARY CRASH CUSHION	29 EA	3,280.00	95,120.00
0133	4480000000-N	1165	ТМА	2 EA	61,100.00	122,200.00
0134	4485000000-E	1170	PORTABLE CONCRETE BARRIER	4,360 LF	51.50	224,540.00
0135	449000000-E	1170	PORTABLE CONCRETE BARRIER (ANCHORED)	900 LF	72.50	65,250.00
0136	4500000000-E	1170	REMOVE AND RESET PORTABLE CON- CRETE BARRIER	10,520 LF	5.25	55,230.00
0137	4510000000-N	1190	LAW ENFORCEMENT	100 HR	61.00	6,100.00
0138	4516000000-N	1180	SKINNY DRUM	32 EA	35.50	1,136.00
0139	465000000-N	1251	TEMPORARY RAISED PAVEMENT MARKERS	2,581 EA	5.75	14,840.75
0140	4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	14,115 LF		12,703.50
0141	4688000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (6", 90 MILS)	266,469 LF	1.00	266,469.00
0142	4695000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	115 LF	2.75	316.25
0143	4700000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (12", 90 MILS)	 24,424 LF	2.75	67,166.00

0144	4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	148 EA	234.00	34,632.00
0145	4775000000-E	1205	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (6") (IV)	720 LF	7.00	5,040.00
0146	481000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	67,716 LF	0.20	13,543.20

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			Contract Item Sheets For C2	04498		
Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
0147	481500000-E	1205	PAINT PAVEMENT MARKING LINES (6")	1,285,211 LF	0.20	257,042.20
0148	4825000000-E	1205	PAINT PAVEMENT MARKING LINES (12")	51,058 LF	0.85	43,399.30
0149	4835000000-E	1205	PAINT PAVEMENT MARKING LINES (24")	2,466 LF	3.50	8,631.00
0150	4845000000-N	1205	PAINT PAVEMENT MARKING SYMBOL	330 EA	58.50	19,305.00
0151	4850000000-Е	1205	REMOVAL OF PAVEMENT MARKING LINES (4")	9,636 LF	0.30	2,890.80
 0152	4855000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (6")	233,098 LF	0.30	69,929.40

			LINES (6")	LF		
0153	4865000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (12")	918 LF	2.25	2,065.50
0154	4870000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (24")	277 LF	4.75	1,315.75
0155	4875000000-N	1205	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS	19 EA	58.50	1,111.50
0156	4890000000-E	SP	GENERIC PAVEMENT MARKING ITEM POLYUREA PAVEMENT MARKING LINES, 6", 20 MILS (STANDARD GLASS BEADS)	495 LF	9.25	4,578.75
0157	4891000000-E	1205	GENERIC PAVEMENT MARKING ITEM THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MLS)	270 LF	17.50	4,725.00
0158	4895000000-N	SP	GENERIC PAVEMENT MARKING ITEM NON-CAST IRON SNOWPLOWABLE PAVEMENT MARKER	3,587 EA	47.00	168,589.00
0159	4900000000-N	1251	PERMANENT RAISED PAVEMENT MARKERS	5 EA	11.50	57.50
0160	5325300000-E	1510	3" WATER LINE	2,700 LF	20.00	54,000.00
0161	5325400000-E	1510	4" WATER LINE	89 LF	116.00	10,324.00
0162	5325600000-E	1510	6" WATER LINE	47,521 LF	43.00	2,043,403.00
0163	5325800000-E	1510	8" WATER LINE	4,152 LF	66.00	274,032.00

# North Carolina Department Of Transportation С

Contract	ltem	Sheets	For	C204498

	Contract Item Sheets For C204498									
Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid				
0164	5326000000-E	1510	10" WATER LINE	4,745 LF	89.50	424,677.50				
0165	5329000000-E	1510	DUCTILE IRON WATER PIPE FITTINGS	22,179 LB	3.50	77,626.50				
0166	5534000000-E	1515	**" VALVE (3")	5 EA	1,890.00	9,450.00				
0167	5540000000-E	1515	6" VALVE	47 EA	2,450.00	115,150.00				
0168	5546000000-E	1515	8" VALVE	4 EA	3,490.00	13,960.00				
0169	5552000000-E	1515	10" VALVE	2 EA	5,240.00	10,480.00				
0170	5571400000-E	1515	4" TAPPING SLEEVE & VALVE	1 EA	9,320.00	9,320.00				
0171	5571600000-E	1515	6" TAPPING SLEEVE & VALVE	3 EA	10,200.00	30,600.00				
0172	5571800000-E	1515	8" TAPPING SLEEVE & VALVE	1 EA	11,600.00	11,600.00				
0173	5572000000-E	1515	10" TAPPING SLEEVE & VALVE	2 EA	15,400.00	30,800.00				
0174	5643100000-E	1515	3/4" WATER METER	35 EA	641.00	22,435.00				
0175	5648000000-N	1515	RELOCATE WATER METER	41 EA	1,630.00	66,830.00				
0176	5666000000-N	1515	FIRE HYDRANT	12 EA	9,900.00	118,800.00				
0177	5673000000-E	1515	FIRE HYDRANT LEG	202 LF	99.00	19,998.00				
0178	5686500000-E	1515	WATER SERVICE LINE	6,765 LF	21.50	145,447.50				
0179	5798000000-E	1530	ABANDON **" UTILITY PIPE (3")	3,125 LF	6.00	18,750.00				
0180	5798000000-E	1530	ABANDON **" UTILITY PIPE (4")	105 LF	18.00	1,890.00				
0181			ABANDON 6" UTILITY PIPE	44,233 LF	8.00	353,864.00				
0182		1530	ABANDON 8" UTILITY PIPE	3,402 LF	9.50	32,319.00				
0183			ABANDON 10" UTILITY PIPE	4,391 LF	12.50	54,887.50				

# North Carolina Department Of Transportation С

Page: 11 of 17

Contract Item Sheets For C204498	
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Line	ItemNumber	Contract Item Sheets For C204498 Der Sec Description Quantity Unit Bid				
#	Remnumber	#	Description	Unit	Price	Amount Bid
0184	5815000000-N	1530	REMOVE WATER METER	35 EA	349.00	12,215.00
0185	5815500000-N	1530	REMOVE FIRE HYDRANT	5 EA	2,040.00	10,200.00
0186	5835000000-E	1540	**" ENCASEMENT PIPE (14")	726 LF	262.00	190,212.00
0187	5835000000-E	1540	**" ENCASEMENT PIPE (8")	500 LF	186.00	93,000.00
0188	5835700000-E	1540	16" ENCASEMENT PIPE	562 LF	87.50	49,175.00
0189	5835900000-E	1540	20" ENCASEMENT PIPE	333 LF	99.00	32,967.00
0190	5872500000-E	1550	BORE AND JACK OF **" (16")	562 LF	349.00	196,138.00
0191	5872500000-E	1550	BORE AND JACK OF **" (20")	333 LF	379.00	126,207.00
0192	5872600000-E	1550	DIRECTIONAL DRILLING OF **" (6")	1,766 LF	97.00	171,302.00
0193	5882000000-N	SP	GENERIC UTILITY ITEM 2" POST HYDRANT	2 EA	3,490.00	6,980.00
0194	5882000000-N	SP	GENERIC UTILITY ITEM WATER MAIN MARKER	22 EA	233.00	5,126.00
0195	5882000000-N	SP	GENERIC UTILITY ITEM WATER VALVE MARKER	36 EA	233.00	8,388.00
0196	600000000-E	1605	TEMPORARY SILT FENCE	292,695 LF	2.70	790,276.50
0197	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	4,715 TON	38.00	179,170.00
0198	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	49,875 TON	38.00	1,895,250.00
0199	6012000000-Е	1610	SEDIMENT CONTROL STONE	17,575 TON	31.50	553,612.50
0200	6015000000-E	1615	TEMPORARY MULCHING	378 ACR	1,180.00	446,040.00
0201	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	14,300 LB	4.25	60,775.00

# North Carolina Department Of Transportation

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Contract	ltem	Sheets	For	C204498	

Line #	ltemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
0202	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEED- ING	73 TON	1,740.00	127,020.00
 0203	6024000000-E	1622	TEMPORARY SLOPE DRAINS	6,060 LF	16.50	99,990.00
0204	6029000000-E	SP	SAFETY FENCE	6,700 LF	2.75	18,425.00
0205	603000000-Е	1630	SILT EXCAVATION	39,270 CY	2.50	98,175.00
0206	6036000000-Е	1631	MATTING FOR EROSION CONTROL	252,745 SY	1.25	315,931.25
0207	6037000000-Е	SP	COIR FIBER MAT	2,010 SY	6.25	12,562.50
0208	6038000000-E	SP	PERMANENT SOIL REINFORCEMENT MAT	900 SY	7.25	6,525.00
0209	6042000000-Е	1632	1/4" HARDWARE CLOTH	6,520 LF	8.00	52,160.00
0210	6043000000-Е	SP	LOW PERMEABILITY GEOTEXTILE	1,430 SY	5.00	7,150.00
0211	6045000000-E	SP	**" TEMPORARY PIPE (15")	242 LF	52.50	12,705.00
0212	6045000000-E	SP	**" TEMPORARY PIPE (24")	810 LF	75.00	60,750.00
0213	6045000000-E	SP	**" TEMPORARY PIPE (36")	130 LF	126.00	16,380.00
 0214	6045000000-E	SP	**" TEMPORARY PIPE (42")	420 LF	289.00	121,380.00
 0215	6045000000-E	SP	**" TEMPORARY PIPE (48")	670 LF	272.00	182,240.00
 0216	6048000000-Е	SP	FLOATING TURBIDITY CURTAIN	90 SY	37.00	3,330.00
0217	606900000-Е	1638	STILLING BASINS	290 CY	31.50	9,135.00
0218	6070000000-N	1639	SPECIAL STILLING BASINS	5 EA	1,180.00	5,900.00
0219	6071012000-Е	SP	COIR FIBER WATTLE	22,080 LF	12.50	276,000.00
0220	6071014000-Е	SP	COIR FIBER WATTLE BARRIER	7,687 LF	14.00	107,618.00

# North Carolina Department Of Transportation С

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Contract Item Sheets For C204498	Contract	ltem	Sheets	For	C204498
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Line	ItemNumber	Sec	Contract Item Sheets For C2 Description	Quantity	Unit Bid	Amount
#		#		Unit	Price	Bid
0221	6071020000-E	SP	POLYACRYLAMIDE (PAM)	32,735 LB	9.25	302,798.75
0222	6071030000-E	1640	COIR FIBER BAFFLE	7,675 LF	8.25	63,318.75
0223	6071050000-E	SP	**" SKIMMER (1-1/2")	52 EA	553.00	28,756.00
0224	6071050000-E	SP	**" SKIMMER (2")	9 EA	642.00	5,778.00
0225	6071050000-E	SP	**" SKIMMER (2-1/2")	4 EA	856.00	3,424.00
0226	6071050000-E	SP	**" SKIMMER (3")	1 EA	1,080.00	1,080.00
0227	6071050000-E	SP	**" SKIMMER (4")	1 EA	1,620.00	1,620.00
0228	6084000000-E	1660	SEEDING & MULCHING	249 ACR	3,170.00	789,330.00
0229	6087000000-Е	1660	MOWING	288 ACR	233.00	67,104.00
0230	609000000-Е	1661	SEED FOR REPAIR SEEDING	3,800 LB	18.50	70,300.00
0231	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	12 TON	2,030.00	24,360.00
0232	609600000-Е	1662	SEED FOR SUPPLEMENTAL SEEDING	6,100 LB	5.00	30,500.00
0233	610800000-Е	1665	FERTILIZER TOPDRESSING	183 TON	1,540.00	
0234	6111000000-Е	SP	IMPERVIOUS DIKE	355 LF	139.00	
0235	6114500000-N	1667	SPECIALIZED HAND MOWING	10 MHR	149.00	1,490.00
0236	6117000000-N	SP	RESPONSE FOR EROSION CONTROL	150 EA	1.00	150.00
0237	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	15 EA	1,020.00	15,300.00
0238	6120000000-E	SP	CULVERT DIVERSION CHANNEL	181 CY	141.00	25,521.00
0239	6123000000-E	1670	REFORESTATION	0.1 ACR	11,900.00	1,190.00

# North Carolina Department Of Transportation

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Contract	Item Sheets For C204498	
Description		Quantity

Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
0240	730000000-E	1715	UNPAVED TRENCHING (*********) (2")	110 LF	12.00	1,320.00
0241	7301000000-E	1715	DIRECTIONAL DRILL (*********) (2")	90 LF	20.50	1,845.00
0242	7324000000-N	1716	JUNCTION BOX (STANDARD SIZE)	3 EA	341.00	1,023.00
0243	798000000-N	SP	GENERIC SIGNAL ITEM 5/8" X 10' GROUNDING ELEC- TRODE	4 EA	119.00	476.00
0244	7980000000-N	SP	GENERIC SIGNAL ITEM DMS ACCESS LADDER	1 EA	19,100.00	19,100.00
0245	7980000000-N	SP	GENERIC SIGNAL ITEM DMS PEDESTAL STRUCTURE	1 EA	64,800.00	64,800.00
0246	7980000000-N	SP	GENERIC SIGNAL ITEM DYNAMIC MESSAGE SIGN (TYPE-2C)	2 EA	125,000.00	250,000.00
0247	7980000000-N	SP	GENERIC SIGNAL ITEM EQIPMENT CABINET DISCONNECT	1 EA	931.00	931.00
0248	798000000-N	SP	GENERIC SIGNAL ITEM METER BASE/DISCONNECT COMBINA- TION PANEL	1 EA	1,150.00	1,150.00
0249	7980000000-N	SP	GENERIC SIGNAL ITEM WOOD PEDESTAL	1 EA	471.00	471.00
0250	7990000000-E	SP	GENERIC SIGNAL ITEM #4 SOLID BARE COPPER GROUNDING CONDUCTOR	40 LF	2.25	90.00
0251	7990000000-E	SP	GENERIC SIGNAL ITEM 3-WIRE COPPER SERVICE ENTRANCE CONDUCTORS	30 LF	3.75	112.50
0252	7990000000-E	SP	GENERIC SIGNAL ITEM 4-WIRE COPPER FEEDER CONDUC- TORS	220 LF	4.00	880.00
0253	7992000000-E	SP	GENERIC SIGNAL ITEM OVERHEAD FOOTINGS	10 CY	1,440.00	14,400.00

# North Carolina Department Of Transportation

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Contract	ltem	Sheets	For	C204498	

Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
0254	812600000-N	414	CULVERT EXCAVATION, STA ****** (345+79.00 -L-)	Lump Sum LS	61,300.00	61,300.00
 0255	8126000000-N	414	CULVERT EXCAVATION, STA ****** (365+81.00 -L-)	Lump Sum LS	61,700.00	61,700.00
0256	8126000000-N	414	CULVERT EXCAVATION, STA ****** (69+25.50 -L-)	Lump Sum LS	47,600.00	47,600.00
 0257	8133000000-E	414	FOUNDATION CONDITIONING MATER- IAL, BOX CULVERT	980 TON	71.50	70,070.00
0258	8196000000-E	420	CLASS A CONCRETE (CULVERT)	873.5 CY	1,020.00	890,970.00
0259	8245000000-E	425	REINFORCING STEEL (CULVERT)	114,362 LB	2.50	285,905.00
0277	805600000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ********** (69+25.50 L-)	Lump Sum LS	17,700.00	17,700.00
 0278	8056000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ********** (315+50 -L)	Lump Sum LS	16,700.00	16,700.00
 0279	8056000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ********** (345+79.00 -L-)	Lump Sum LS	12,900.00	12,900.00
 0280	8056000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ********** (365+81.00 -L-)	Lump Sum LS	19,400.00	19,400.00

# North Carolina Department Of Transportation С

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Contract Item Sheets For C2	204498
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Amoun Bie	Unit Bid Price	Quantity Unit	Description	Sec #	ltemNumber	Line #
38,900.0	38,900.00	Lump Sum LS	REMOVAL OF EXISTING STRUCTURE AT STATION *********** (156+55.00 -L- RT)	402	803500000-N	0260
5,560.0	5,560.00	Lump Sum LS	ASBESTOS ASSESSMENT	SP	8065000000-N	0261
11,340.0	5,670.00	2 EA	PDA TESTING	450	8112730000-N	0262
16,700.0	16,700.00	Lump Sum LS	UNCLASSIFIED STRUCTURE EXCAVA- TION AT STATION ******** (156+55.00 -L- RT)	412	8121000000-N	0263
590,848.0	128.00	4,616 SF	REINFORCED CONCRETE DECK SLAB	420	8147000000-E	0264
16,080.7	2.25	7,147 SF	GROOVING BRIDGE FLOORS	420	8161000000-E	0265
245,784.0	1,330.00	184.8 CY	CLASS A CONCRETE (BRIDGE)	420	8182000000-E	0266
93,300.0	93,300.00	Lump Sum LS	BRIDGE APPROACH SLABS, STATION ************ (156+55.00 -L- LT)	422	8210000000-N	0267
93,300.0	93,300.00	Lump Sum LS	BRIDGE APPROACH SLABS, STATION ************************************	422	8210000000-N	0268
58,975.0	2.50	23,590 LB	REINFORCING STEEL (BRIDGE)	425	8217000000-E	0269
138,669.6	240.00	577.79 LF	36" PRESTRESSED CONCRETE GIR- DERS	430	8259000000-E	0270
53,280.0	2,220.00	24 EA	PILE DRIVING EQUIPMENT SETUP FOR *** STEEL PILES (HP 12 X 53)	450	8328200000-E	0271
157,440.0	82.00	1,920 LF	HP12X53 STEEL PILES	450	8364000000-E	0272
666.0	55.50	12 EA	PILE REDRIVES	450	8393000000-N	0273
60,632.0	260.00	233.2 LF	CONCRETE BARRIER RAIL	460	8503000000-E	0274
5,560.0	5,560.00	Lump Sum LS	ELASTOMERIC BEARINGS	430	8657000000-N	0275

# North Carolina Department Of Transportation С

ontract	Item	Sheets	For	C204498
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Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
0276	889200000-E	SP	GENERIC STRUCTURE ITEM 18" GALVANIZED STEEL SHEET PILES	14,202 SF	60.00	852,120.00
			TOTAL AMOUNT OF BID FOR EN	TIRE PROJECT		\$86,385,000.00

1119/May03/Q6084920.03/D1172451706000/E280

# Fuel Usage Factor Adjustment Form

Contract Number	C204498
County	BEAUFORT, MARTIN
Contractor Name	BRANCH CIVIL, INC.
HiCAMS Vendor Number	3697

Select a Fuel Usage Factor for each of the Asphalt Material Descriptions to be used on the project. Within the Selected Fuel Usage Factor column, choose either 2.90 or 0.90 Gallons per Ton for the corresponding asphalt material description.

The Selected Fuel Usage Factor chosen will be used for the entire contract duration.

Description	11:4:4	Selected Fuel Usage Factor		
Description	Unit	0.90	2.90	
Asphalt Concrete Base Course, Type B25.0C	Gal/Ton	~		
Asphalt Concrete Intermediate Course, Type I19.0C	Gal/Ton	~		
Asphalt Concrete Surface Course, Type SA-1	Gal/Ton	~		
Asphalt Concrete Surface Course, Type SA-1 (Leveling Course)	Gal/Ton	~		
Asphalt Concrete Surface Course, Type S4.75	Gal/Ton	~		
Asphalt Concrete Surface Course, Type S4.75 (Leveling Course)	Gal/Ton	~		
Asphalt Concrete Surface Course, Type S9.5B	Gal/Ton	~		
Asphalt Concrete Surface Course, Type S9.5B (Leveling Course)	Gal/Ton	~		
Asphalt Concrete Surface Course, Type S9.5C	Gal/Ton	~		
Asphalt Concrete Surface Course, Type S9.5C (Leveling Course)	Gal/Ton	~		
Asphalt Concrete Surface Course, Type S9.5D	Gal/Ton	~		
Asphalt Concrete Surface Course, Type S9.5D (Leveling Course)	Gal/Ton	~		
Open-Graded Asphalt Friction Course	Gal/Ton	~		
Permeable Asphalt Drainage Course, Type	Gal/Ton	~		
Sand Asphalt Surface Course, Type	Gal/Ton	~		

If the Contractor does not mark either Fuel Usage Factor or marks both Fuel Usage Factors for an asphalt item description, the 2.90 Fuel Usage Factor shall be used for that asphalt line item.

7-1-2021 Revised

#### EXECUTION OF CONTRACT NON-COLLUSION, DEBARMENT AND GIFT BAN CERTIFICATION

#### **CORPORATION**

The Contractor declares (or certifies, verifies, or states) under penalty of perjury under the laws of the United States that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this Contract, that the Contractor has not been convicted of violating N.C.G.S. § 133-24 within the last three years, and that the Contractor intends to do the work with its own bona fide employees or subcontractors and did not bid for the benefit of another contractor.

By submitting this Execution of Contract, Non-Collusion and Debarment Certification, the Contractor is certifying his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

*N.C.G.S.* § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

### SIGNATURE OF CONTRACTOR

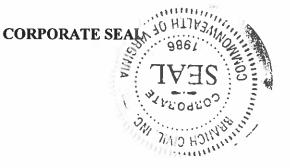
Branch Civil, Inc.

Full name of Corporation

P.O. Box 40004, Roanoke, VA 24022 Address as Prequalified Attest By stant Secretary ice President Jeffrey M. Bourne Michael Colbert

Print or type Signer's name

Print or type Signer's name



### **DEBARMENT CERTIFICATION**

Conditions for certification:

- 1. The prequalified bidder shall provide immediate written notice to the Department if at any time the bidder learns that his certification was erroneous when he submitted his debarment certification or explanation filed with the Department, or has become erroneous because of changed circumstances.
- 2. The terms covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded, as used in this provision, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. A copy of the Federal Rules requiring this certification and detailing the definitions and coverages may be obtained from the Contract Officer of the Department.
- 3. The prequalified bidder agrees by submitting this form, that he will not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in NCDOT contracts, unless authorized by the Department.
- 4. For Federal Aid projects, the prequalified bidder further agrees that by submitting this form he will include the Federal-Aid Provision titled *Required Contract Provisions Federal-Aid Construction Contract (Form FHWA PR* 1273) provided by the Department, without subsequent modification, in all lower tier covered transactions.
- 5. The prequalified bidder may rely upon a certification of a participant in a lower tier covered transaction that he is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless he knows that the certification is erroneous. The bidder may decide the method and frequency by which he will determine the eligibility of his subcontractors.
- 6. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this provision. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- 7. Except as authorized in paragraph 6 herein, the Department may terminate any contract if the bidder knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available by the Federal Government.

#### **DEBARMENT CERTIFICATION**

The prequalified bidder certifies to the best of his knowledge and belief, that he and his principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records; making false statements; or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph b. of this certification; and
- d. Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- e. Will submit a revised Debarment Certification immediately if his status changes and will show in his bid proposal an explanation for the change in status.

If the prequalified bidder cannot certify that he is not debarred, he shall provide an explanation with this submittal. An explanation will not necessarily result in denial of participation in a contract.

Failure to submit a non-collusion and debarment certification will result in the prequalified bidder's bid being considered non-responsive.

Check here if an explanation is attached to this certification.

Contract No. <u>C204498</u>

County (ies): Beaufort, Martin

# ACCEPTED BY THE DEPARTMENT OF TRANSPORTATION

-DocuSigned by: Ronald E. Davenport, Jr.

Contract Officer

05/11/2022

F81B6038A47A44

Date

Execution of Contract and Bonds Approved as to Form:

DocuSigned by: essica Attorney General B584472DA33F432...

05/11/2022

Date

Signature Sheet (Bid - Acceptance by Department)

C204498

Beaufort/Martin Counties

Contract No. County Rev 5-17-11

Bond No. K40501356 Federal Insurance Company Bond No. 47-SUR-300171-01-0045 Berkshire Hathaway Specialty Insurance Company

# **CONTRACT PAYMENT BOND**

Date of Payment Bond Execution	May 4, 2022		
Name of Principal Contractor	Branch Civil, Inc.		
Name of Surety:	Federal Insurance Company and Berkshire Hathaway Specialty Insurance Company		
Name of Contracting Body:	North Carolina Department of Transportation		
	Raleigh, North Carolina		
Amount of Bond:	\$86,385,000.00		
Contract ID No.:	C204498		
County Name:	Beaufort/Martin Counties		

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL CONTRACTOR (hereafter, PRINCIPAL) and SURETY above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the Contracting Body, numbered as shown above and hereto attached:

NOW THEREFORE, if the principal shall promptly make payment to all persons supplying labor and material in the prosecution of the work provided for in said contract, and any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

# C204498

Seal of Surety Company

Martin Countie

Contract No.

and the second

HATHAL

Rev 5-17-11



Federal Insurance Company and Berkshire Hathaway Specialty Insurance Company

Print or type Surety Company Name

By Jaclyn Thomas, Attorney-In-Fact Print, stamp or type name of Attorney-in-Fact

Signature of Attorney-in-Fact

Signature of W

Marisol Mojica, Witness

Print or type Signer's name

100 South Jefferson Road, Ste 101, Whippany, NJ 07981

Address of Attorney-in-Fact

204998

Contract No. County

#### Rev 5-17-11

## **CONTRACT PAYMENT BOND**

# **CORPORATION**

### SIGNATURE OF CONTRACTOR (Principal)

Branch Civil, Inc.

Full name of Corporation

# PO Box 40004, Roanoke, VA 24022

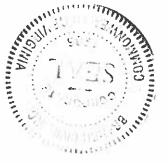
Address as prequalified

By

Signature of President, Vice President, Assistant Vice President Select appropriate title

Michael Colbert Print or type Signer's name

Affix Corporate Seal



Attest

Signature of Secretary, Assistant Secretary Select appropriate title

ourne

Print or type Signer's name

# C204498 Beaufort/Martin Counties

Contract No. County

Bond No. K40501356 Federal Insurance Company

Bond No. 47-SUR-300171-01-0045 Berkshire Hathaway Specialty Insurance Company

# **CONTRACT PERFORMANCE BOND**

Date of Performance Bond Execution:	May 4, 2022
Name of Principal Contractor:	Branch Civil, Inc.
Name of Surety:	Federal Insurance Company and Berkshire Hathaway Specialty Insurance Company
Name of Contracting Body:	North Carolina Department of Transportation
	Raleigh, North Carolina
Amount of Bond:	\$86,385,000.00
Contract ID No.:	C204498
County Name:	Beaufort/Martin Counties

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL CONTRACTOR (hereafter, PRINCIPAL) and SURETY above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the Contracting Body, numbered as shown above and hereto attached:

NOW THEREFORE, if the principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Contracting Body, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.



Signature of Attorney-in-Fact

Signature of Witness

Marisol Mojica, Witness

Print or type Signer's name

100 South Jefferson Road, Ste 101, Whippany, NJ 07981

Address of Attorney-in-Fact

Contract No. County

.

### **CONTRACT PERFORMANCE BOND**

### **CORPORATION**

#### SIGNATURE OF CONTRACTOR (Principal)

Branch Civil, Inc.

C204998

Beaufort/Martin Counties

Full name of Corporation

# PO Box 40004, Roanoke, VA 24022

Address as prequalified

By

Signature of President, Vice President, Assistant Vice President Select appropriate title

Michael Colbert Print or type Signer's name

Affix Corporate Seal

Attes Signature of Seretary, Assistant Secretary Selege appropriate title

Brunc

Print or type Signer's name



Rev 5-17-11

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### Power of Attorney

Federal Insurance Company | Vigilant Insurance Company | Pacific Indemnity Company Westchester Fire Insurance Company | ACE American Insurance Company

Know All by These Presents, that FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY corporations of the Commonwealth of Pennsylvania, do each hereby constitute and appoint Thomas MacDonald, Marisol Mojica, Edward Reilly, Krystal L. Stravato, Jaclyn Thomas and Kevin T. Walsh Jr. of Whippany, New Jersey; Andrea E. Gorbert of Jericho, New York; Neil C. Donovan, and Gerard Leib of Berwyn, Pennsylvania -----

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, PACIFIC INDEMNITY COMPANY, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY have each executed and attested these presents and affixed their corporate seals on this 6th day of April, 2022.

Drunn. Chlores

Down M. Chloros, Assistant Secretary



SS.

STATE OF NEW IERSEY **County of Hunterdon** 

Notarial Seal

Stephen M. Haney, Vice President



On this 6th day of April, 2022 before me, a Notary Public of New Jersey, personally came Dawn M. Chloros and Stephen M. Haney, to me known to be Assistant Secretary and Vice President, respectively, of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, PACIFIC INDEMNITY COMPANY, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros and Stephen M. Haney, being by me duly sworn, severally and each for herself and himself did depose and say that they are Assistant Secretary and Vice President, respectively, of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, PACIFIC INDEMNITY COMPANY, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY and know the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of said Companies; and that their signatures as such officers were duly affixed and subscribed by like authority.



KATHERINE J. ADELAAR NOTARY PUBLIC OF NEW JERSEY No. 2316685 Commission Expires July 16, 2024

Juh Alden Novery Public

#### CERTIFICATION

Resolutions adopted by the Boards of Directors of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY on August 30, 2016; WESTCHESTER FIRE INSURANCE COMPANY on December 11, 2006; and ACE AMERICAN INSURANCE COMPANY on March 20, 2009:

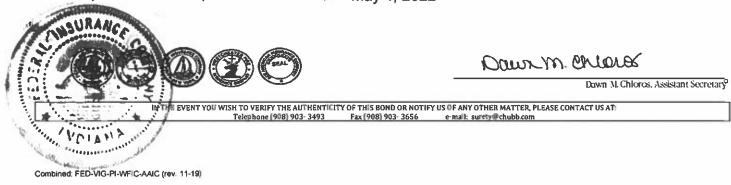
- "RESOLVED, that the following authorizations relate to the execution, for and on behalf of the Company, of bonds, undertakings, recognizances, contracts and other written commitments of the Company entered into in the ordinary course of business (each a "Written Commitment"):
  - Each of the Chairman, the President and the Vice Presidents of the Company is hereby autherized to execute any Written Commitment for and on behalf of the Company, under the seal (1) of the Company or otherwise.
  - (2) Each duly appointed attorney-in-fact of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise, to the extent that such action is authorized by the grant of powers provided for in such person's written appointment as such attorney-in-fact.
  - Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to appoint in writing any person the attorney-infact of the Company with full power and authority to execute, for and on behalf of the Company, under the seal of the Company or otherwise, such Written Commitments of the Company as may be specified in such written appointment, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
  - Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to delegate in writing to any other officer of the **(4**} Company the authority to execute, for and on behalf of the Company, under the Company's seal or otherwise, such Written Commitments of the Company as are specified in such written delegation, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
  - The signature of any officer or other person executing any Written Commitment or appointment or delegation pursuant to this Resolution, and the seal of the Company, may be affixed by (5) facsimile on such Written Commitment or written appointment or delegation,

FURTHER RESOLVED, that the foregoing Resolution shall not be deemed to be an exclusive statement of the powers and authority of officers, employees and other persons to act for and on behalf of the Company, and such Resolution shall not limit or otherwise affect the exercise of any such power or authority otherwise validly granted or vested.

I, Dawn M. Chloros, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, PACIFIC INDEMNITY COMPANY, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY (the "Companies") do hereby certify that

the foregoing Resolutions adopted by the Board of Directors of the Companies are true, correct and in full force and effect, the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Whitehouse Station, NJ, this May 4, 2022



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### **Power Of Attornev** BERKSHIRE HATHAWAY SPECIALTY INSURANCE COMPANY NATIONAL INDEMNITY COMPANY / NATIONAL LIABILITY & FIRE INSURANCE COMPANY

Know all men by these presents, that BERKSHIRE HATHAWAY SPECIALTY INSURANCE COMPANY, a corporation existing under and by virtue of the laws of the State of Nebraska and having an office at One Lincoln Street, 23rd Floor, Boston, Massachusetts 02111, NATIONAL INDEMNITY COMPANY, a corporation existing under and by virtue of the laws of the State of Nebraska and having an office at 3024 Harney Street, Omaha, Nebraska 68131 and NATIONAL LIABILITY & FIRE INSURANCE COMPANY, a corporation existing under and by virtue of the laws of the State of Connecticut and having an office at 100 First Stamford Place, Stamford, Connecticut 06902 (hereinafter collectively the "Companies"), pursuant to and by the authority granted as set forth herein, do hereby name, constitute and appoint: Jaclvn Thomas, Kevin T. Walsh, Jr., Thomas MacDonald, Krystal L. Stravato, 100 South Jefferson Road, Suite 101, of the city of Whippany, State of New Jersey, their true and lawful attorney(s)-in-fact to make, execute, seal, acknowledge, and deliver, for and on their behalf as surety and as their act and deed, any and all undertakings, bonds, or other such writings obligatory in the nature thereof, in pursuance of these presents, the execution of which shall be as binding upon the Companies as if it has been duly signed and executed by their regularly elected officers in their own proper persons. This authority for the Attorney-in-Fact shall be limited to the execution of the attached bond(s) or other such writings obligatory in the nature thereof.

In witness whereof, this Power of Attorney has been subscribed by an authorized officer of the Companies, and the corporate seals of the Companies have been affixed hereto this date of December 20, 2018. This Power of Attorney is made and executed pursuant to and by authority of the Bylaws, Resolutions of the Board of Directors, and other Authorizations of BERKSHIRE HATHAWAY SPECIALTY INSURANCE COMPANY, NATIONAL INDEMNITY COMPANY and NATIONAL LIABILITY & FIRE INSURANCE COMPANY, which are in full force and effect, each reading as appears on the back page of this Power of Attorney, respectively. The following signature by an authorized officer of the Company may be a facsimile, which shall be deemed the equivalent of and constitute the written signature of such officer of the Company for all purposes regarding this Power of Attorney, including satisfaction of any signature requirements on any and all undertakings, bonds, or other such writings obligatory in the nature thereof, to which this Power of Attorney applies.

By:

NATIONAL INDEMNITY COMPANY,

**David Fields, Vice President** 

NATIONAL LIABILITY & FIRE INSURANCE COMPANY,

BERKSHIRE HATHAWAY SPECIALTY INSURANCE COMPANY,

Bv:

**David Fields, Executive Vice President** 

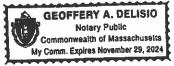


#### NOTARY

State of Massachusetts, County of Suffolk, ss:

On this 20th day of December, 2018, before me appeared David Fields, Executive Vice President of BERKSHIRE HATHAWAY SPECIALTY INSURANCE COMPANY and Vice President of NATIONAL INDEMNITY COMPANY and NATIONAL LIABILITY & FIRE INSURANCE COMPANY, who being duly sworn, says that his capacity is as designated above for such Companies; that he knows the corporate seals of the Companies; that the seals affixed to the foregoing instrument are such corporate seals; that they were affixed by order of the board of directors or other governing body of said Companies pursuant to its Bylaws, Resolutions and other Authorizations, and that he signed said instrument in that capacity of said Companies.

[Notary Seal]



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**Notary Public** 

recella, the undersigned, Officer of BERKSHIRE HATHAWAY SPECIALTY INSURANCE COMPANY, NATIONAL INDEMNITY MENNIN AND THE POWER AND THE INSURANCE COMPANY, GO RECEVENESS THE ADDRESS AND ONAL LIABILITY & FIRE INSURANCE COMPANY, do hereby certify that the above and foregoing is a true and correct fixed the seals of said Companies this May 4, 2022.



Officer