

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

PROPOSAL

**INCLUDES ADDENDUM No. 1 DATED 04-11-2023**

DATE AND TIME OF BID OPENING: **Apr 18, 2023 AT 02:00 PM**

CONTRACT ID C204741  
WBS 45762.3.1

FEDERAL-AID NO. NHP-0029(062)  
COUNTY CABARRUS  
T.I.P NO. B-5808  
MILES 0.178  
ROUTE NO. US-29  
LOCATION BRIDGES #57 AND #59 OVER IRISH BUFFALO CREEK ON US-29 AND US-601.

TYPE OF WORK GRADING, DRAINAGE, PAVING, SIGNALS, AND STRUCTURES.

**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. NOTWITHSTANDING THESE LIMITATIONS ON BIDDING, THE BIDDER WHO IS AWARDED ANY FEDERAL - AID FUNDED PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING.

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

**THIS IS A ROADWAY & STRUCTURE PROPOSAL**

**5% BID BOND OR BID DEPOSIT REQUIRED**

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**PROPOSAL FOR THE CONSTRUCTION OF  
CONTRACT No. C204741 IN CABARRUS COUNTY, 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. **C204741** 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. **C204741** in **Cabarrus County**, 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.*

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04/11/2023

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**PROJECT SPECIAL PROVISIONS****GENERAL****CONTRACTOR PREQUALIFICATION:**

(10-18-22)

102

SP1 G01

Revise the *2018 Standard Specifications* as follows:

**Page 1-10, Subarticle 102-2(A) Bidder Prequalification**, lines 30-31, delete and replace the first sentence with the following:

Prospective bidders shall obtain prequalification approval at least two business days prior to any letting in which they intend to submit a bid. It is recommended that the prospective bidder file all required statements and documents with the State Prequalifications Engineer no less than 4 weeks before a given letting.

**Page 1-11, Subarticle 102-2(B) Purchase Order Bidder Prequalification**, lines 16-18, delete and replace the first sentence with the following:

Prospective bidders shall obtain prequalification approval at least two business days prior to any letting in which they intend to submit a bid. It is recommended that the applicant file all required statements and documents with the State Prequalifications Engineer no less than 4 weeks before a given bid opening for their bid to be considered.

**Page 1-11, Subarticle 102-2(C) Subcontractor Prequalification**, lines 44-45, delete and replace the first sentence with the following:

The subcontractor shall file all required statements and documents with the State Prequalifications Engineer no less than 4 weeks before beginning work.

**Page 1-12, Subarticle 102-2(E) Renewal and Requalification**, lines 38-40, delete and replace the first sentence with the following:

It is recommended that the renewing or requalifying firm file all required statements and documents with the State Prequalifications Engineer no less than 4 weeks before a given letting for their bid to be considered.

**INTERESTED PARTIES LIST:**

(6-21-22)(Rev. 7-19-22)

102

SP1 G02

Revise the *2018 Standard Specifications* as follows:

**Page 1-12, Article 102-3 PROPOSALS AND PLAN HOLDER LISTS**, lines 45-49, delete and replace with the following:

**102-3 PROPOSALS AND INTERESTED PARTIES LIST**

On Department projects advertised, the prospective bidder shall sign up on the *Interested Parties List* no later than one business day prior to the Letting day of that project, for which he intends to

submit a bid. There is no cost for signing up on the *Interested Parties List* that can be found on the Department's website at [connect.ncdot.gov/letting](http://connect.ncdot.gov/letting).

**Page 1-12, Article 102-3 PROPOSALS AND PLAN HOLDER LISTS**, lines 1-3, delete and replace the first sentence of the second paragraph with the following:

The proposal will state the location of the contemplated construction and show a schedule of contract items with the approximate quantity of each of these items for which bid prices are invited.

**Page 1-14, Article 102-8 PREPARATION AND SUBMISSION OF BIDS**, lines 30-31, delete and replace the first paragraph with the following:

Prior to submitting a bid on a project, the bidder shall sign up on the *Interested Parties List* in conformance with Article 102-3. The bidder shall submit a unit or lump sum price for every item in the proposal other than items that are authorized alternates to those items for which a bid price has been submitted.

**BUILD AMERICA, BUY AMERICA (BABA):**

(11-15-22)

106

SP1 G04

Revise the *2018 Standard Specifications* as follows:

**Page 1-53, Article 106-1 GENERAL REQUIREMENTS**, add the following after line 27:

**(C) Build America, Buy America (BABA)**

All manufactured products and construction materials permanently incorporated into any project must meet requirements of the Build America, Buy America (BABA) Act of the Infrastructure Investment and Jobs Act (IIJA). Before any material or product shown on the Department's Build America, Buy America (BABA) List is included for payment on a monthly estimate, the Contractor shall furnish the Engineer with a notarized certification certifying that the items conform to the BABA Act. The Department's Build America Buy America (BABA) List can be found on the Department's website.

<https://connect.ncdot.gov/letting/LetCentral/NCDOT%20BABA%20Materials%20List.pdf>

Each purchase order issued by the Contractor or a subcontractor for items on the BABA List to be permanently incorporated into any project shall contain in bold print a statement advising the supplier that the manufactured products and construction materials must be produced in the United States of America. The Contractor and all affected subcontractors shall maintain a separate file for BABA List items so that verification of the Contractor's efforts to purchase items produced in the United States can readily be verified by an authorized representative of the Department or the Federal Highway Administration (FHWA).

**CONTRACT TIME AND LIQUIDATED DAMAGES:**

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

108

SP1 G07 A

The date of availability for this contract is **July 10, 2023**, 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 **April 30, 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

SP1 G13 A

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 10, 2023**.

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

The liquidated damages for this intermediate contract time are **One Thousand Five Hundred Dollars (\$ 1,500.00)** 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.

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

(2-20-07)

108

SP1 G14 A

The Contractor shall complete the required work of installing, maintaining, and removing the traffic control devices for lane closures and restoring traffic to the existing traffic pattern. The Contractor shall not close or narrow a lane of traffic on **US 29 / US 601 (Concord Parkway)** during the following time restrictions:

**DAY AND TIME RESTRICTIONS**

**Monday thru Friday, 6:00 A.M. to 9:00 P.M.**  
**Saturday & Sunday, 9:00 A.M. to 9:00 P.M.**

In addition, the Contractor shall not close or narrow a lane of traffic on **US 29 / US 601 (Concord Parkway)**, detain and/or alter the traffic flow on or during holidays, holiday weekends, special events, or any other time when traffic is unusually heavy, including the following schedules:

**HOLIDAY AND HOLIDAY WEEKEND LANE CLOSURE RESTRICTIONS**

1. For **unexpected occurrence** that creates unusually high traffic volumes, as directed by the Engineer.
2. For **New Year's Day**, between the hours of **6:00 A.M.** December 31<sup>st</sup> and **9:00 P.M.** January 2<sup>nd</sup>. If New Year's Day is on a Friday, Saturday, Sunday or Monday, then until **9:00 P.M.** the following Tuesday.
3. For **Easter**, between the hours of **6:00 A.M.** Thursday and **9:00 P.M.** Monday.
4. For **Memorial Day**, between the hours of **6:00 A.M.** Friday and **9:00 P.M.** Tuesday.
5. For **Independence Day**, between the hours of **6:00 A.M.** the day before Independence Day and **9:00 P.M.** the day after Independence Day.  
  
If **Independence Day** is on a Friday, Saturday, Sunday or Monday, then between the hours of **6:00 A.M.** the Thursday before Independence Day and **9:00 P.M.** the Tuesday after Independence Day.
6. For **Labor Day**, between the hours of **6:00 A.M.** Friday and **9:00 P.M.** Tuesday.
7. For **Thanksgiving**, between the hours of **6:00 A.M.** Tuesday and **9:00 P.M.** Monday.
8. For **Christmas**, between the hours of **6:00 A.M.** the Friday before the week of Christmas Day and **9:00 P.M.** the following Tuesday after the week of Christmas Day.
9. For **Coca-Cola 600 (World 600) race at Charlotte Motor Speedway**, between the hours of **9:00 A.M.** the **Friday** before the **race** and **9:00 A.M.** the following **Monday** after the **race**.
10. For **Bank of America Roval 400 race at Charlotte Motor Speedway**, between the hours of **9:00 A.M.** the **Friday** before the **race** and **9:00 A.M.** the following **Monday** after the **race**.



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 will not be 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 above and place traffic in the existing traffic pattern.

The liquidated damages are **Seven Hundred Fifty Dollars (\$ 750.00)** per fifteen (15) minute time period.

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

(2-20-07)

108

SP1 G14 C

The Contractor shall complete the required work of installing, maintaining and removing the traffic control devices for lane closures and restoring traffic to the existing traffic pattern. The Contractor shall not close or narrow a lane of traffic on **SR 1394 (Poplar Tent Road / McGill Avenue)** during the following time restrictions:

**DAY AND TIME RESTRICTIONS**

**Monday thru Friday, 7:00 A.M. to 9:00 A.M. and 3:00 P.M. to 6:00 P.M.**

The time of availability for this intermediate contract time will be the time the Contractor begins to install traffic control devices required for the lane closures according to the time restrictions stated herein.

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

The liquidated damages are **Five Hundred Dollars (\$ 500.00)** per fifteen (15) minute time period.

**MANDATORY PRE-BID CONFERENCE (Prequalifying To Bid):**

(7-18-06) (Rev. 3-25-13)

SPD 01-300

In order for all prospective bidders to have an extensive knowledge of the project, all prospective bidders shall attend a mandatory pre-bid conference on April 5, 2023 at 10:00 a.m.

City of Concord – Alfred M. Brown Operations Center (BOC)  
635 Alfred Brown Jr Court SW  
Concord, NC 28025

Please contact Steve Trexler at [sctrexler@ncdot.gov](mailto:sctrexler@ncdot.gov) or at 919-707-7175 for any further questions.

The pre-bid conference will include a thorough discussion of the plans, contract pay items, special provisions, etc. Only bidders who have attended and properly registered at the above scheduled pre-bid conference and who have met all other prequalification requirements will be considered

prequalified to bid on this project. A bid received from a bidder who has not attended and properly registered at the above scheduled pre-bid conference will not be accepted and considered for award.

Attendance at the pre-bid conference will not meet the requirements of proper registration unless the individual attending has registered at the pre-bid conference in accordance with the following:

- (A) The individual has signed his/her name on the official roster prior to the above noted time for the beginning of the conference.
- (B) The individual has written in the name and address of the company he or she represents.
- (C) Only one company has been shown as being represented by the individual attending.
- (D) The individual attending is an officer or permanent employee of the company they are representing.

Any individual arriving after the official roster has been received by the Engineer will not be eligible to bid. Attendance at any prior pre-bid conference will not meet the requirement of this provision.

**PERMANENT VEGETATION ESTABLISHMENT:**

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

104

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.

**MAJOR CONTRACT ITEMS:**

(2-19-02)

104

SP1 G28

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

<b>Line #</b>	<b>Description</b>
176	Reinforced Concrete Deck Slab
178	Class A Concrete (Bridge)
190	36" Prestressed Concrete Florida I-Beam

**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*).

<b>Line #</b>	<b>Description</b>
58-69	Guardrail
74-79	Signing
94-101	Long-Life Pavement Markings
106-118	Utility Construction
119-150	Erosion Control
151-168	Signals/ITS System
171-174	Drilled Piers

**FUEL PRICE ADJUSTMENT:**

(11-15-05) (Rev. 11-15-22)

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 **\$ 2.7901** 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:

<b>Description</b>	<b>Units</b>	<b>Fuel Usage Factor Diesel</b>
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
Erosion Control Stone	Gal/Ton	0.55
Rip Rap, Class _____	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
Ultra-thin Bonded Wearing Course	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
> 11" Portland Cement Concrete Pavement	Gal/SY	0.327
Concrete Shoulders Adjacent to > 11" Pavement	Gal/SY	0.327
9" to 11" Portland Cement Concrete Pavement	Gal/SY	0.272
Concrete Shoulders Adjacent to 9" to 11" Pavement	Gal/SY	0.272
< 9" Portland Cement Concrete Pavement	Gal/SY	0.245
Concrete Shoulders Adjacent to < 9" Pavement	Gal/SY	0.245

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%20-%20Starting%20Nov%202022%20Lettings.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.

### **STEEL PRICE ADJUSTMENT:**

(4-19-22)(Rev. 4-18-23)

SP1 G47

### **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 material 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 (State Contract Officer or Division Contract Engineer) along with the payment bonds, performance bonds and contract execution signature sheets in a single submittal. If Form SPA-1 is not included in the same submittal as the payment bonds, performance bonds and contract execution signature sheets, the Contractor will not be eligible for any steel price adjustment for any item in the contract for the life of the contract. Form SPA-1 can be found on the Department's 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. Should the bidder elect an eligible steel price item, the entire quantity of the line item will be subject to the price adjustment for the duration of the Contract. The Bidder's designations on Form SPA-1 must be written in ink or typed and signed by the Bidder (Prime Contractor) 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 **\$ 45.00** per hundredweight.  
The bidding index for Category 2 Steel items is **\$ 68.79** per hundredweight.  
The bidding index for Category 3 Steel items is **\$ 63.90** per hundredweight.

The bidding index for Category 4 Steel items is \$ **45.17** per hundredweight.  
 The bidding index for Category 5 Steel items is \$ **57.19** per hundredweight.  
 The bidding index for Category 6 Steel items is \$ **69.16** per hundredweight.  
 The bidding index for Category 7 Steel items is \$ **49.50** per hundredweight.  
 The bidding index represents a selling price of steel based on Fastmarkets data for the month of **February 2023**.

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.

<i>Steel Product (Title)</i>	BI, MI*	Adjustment Date for MI	Category
Reinforcing Steel, Bridge Deck, and SIP Forms	Based on one or more Fastmarkets indices	Delivery Date from Producing Mill	1
Structural Steel and Encasement Pipe	Based on one or more Fastmarkets indices	Delivery Date from Producing Mill	2
Steel H-Piles, Soldier Pile Walls	Based on one or more Fastmarkets indices	Delivery Date from Producing Mill	3
Guardrail Items and Pipe Piles	Based on one or more Fastmarkets indices	Material Received Date**	4
Fence Items	Based on one or more Fastmarkets indices	Material Received Date**	5
Overhead Sign Assembly, Signal Poles, High Mount Standards	Based on one or more Fastmarkets indices	Material Received Date**	6
Prestressed Concrete Members	Based on one or more Fastmarkets indices	Cast Date of Member	7

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%20Forms/Form%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 Engineer's 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. Manufacturer'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%20Forms/Form%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:

$$\text{SPA} = ((\text{MI} / \text{BI}) - 1) * \text{BI} * (\text{Q} / 100)$$

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.

**Examples Form SPA-2**  
**Steel Price Adjustment Submission Form**

Contract Number   C203394   Bid Reference Month   January 2019  

Submittal Date   8/31/2019  

Contract Line Item   237  

Line Item Description   APPROX....LBS Structural Steel  

Sequential Submittal Number   2  

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

**Examples Form SPA-2**  
**Steel Price Adjustment Submission Form**

Contract Number C203394 Bid Reference Month January 2019

Submittal Date August 31, 2019

Contract Line Item 237

Line Item Description SUPPORT, OVRHD SIGN STR -DFEB – STA 36+00

Sequential Submittal  
 Number 2

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

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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:

$$\text{SPA} = ((\text{MI} / \text{BI}) - 1) * \text{BI} * (\text{Q} / 100)$$

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.

$$\text{BI} = \$36.12 / \text{CWT}$$

$$\text{MI} = \$64.89 / \text{CWT}$$

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

$$\text{Q} = 450,000 \text{ lbs.}$$

$$\text{SPA} = 0.79651162791 \times \$36.12 \times (450,000 / 100)$$

$$\text{SPA} = 0.79651162791 * \$36.12 * 4,500$$

$$\text{SPA} = \$129,465 \text{ pay adjustment to Contractor for Structural Steel (Structure 2 at Station 44+08.60)}$$

**Price Adjustment Sample Calculation (decrease)**

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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:

$$\text{SPA} = ((\text{MI} / \text{BI}) - 1) * \text{BI} * (\text{Q} / 100)$$

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.

$$\text{BI} = \$46.72 / \text{CWT}$$

$$\text{MI} = \$27.03 / \text{CWT}$$

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

$$\text{Q} = 600,000 \text{ lbs.}$$

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

$$\text{SPA} = -0.421446917808 * \$46.72 * 6,000$$

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

**Price Adjustment Sample Calculation (increase)**

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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:

$$\text{SPA} = ((\text{MI} / \text{BI}) - 1) * \text{BI} * (\text{Q} / 100)$$

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.

$$\text{BI} = \$29.21 / \text{CWT}$$

$$\text{MI} = \$43.13 / \text{CWT}$$

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

$$\text{Q} = 103932 \text{ lbs.}$$

$$\text{SPA} = 0.47654912701 * \$29.21 * (103,932 / 100)$$

$$\text{SPA} = 0.47654912701 * \$29.21 * 1,039.32$$

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

**SCHEDULE OF ESTIMATED COMPLETION PROGRESS:**

(7-15-08) (Rev. 7-19-22)

108-2

SP1 G58

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

	<b><u>Fiscal Year</u></b>	<b><u>Progress (% of Dollar Value)</u></b>
2024	(7/01/23 - 6/30/24)	<b>40%</b> of Total Amount Bid
2025	(7/01/24 - 6/30/25)	<b>34%</b> of Total Amount Bid
2026	(7/01/25 - 6/30/26)	<b>22%</b> of Total Amount Bid
2027	(7/01/26 - 6/30/27)	<b>4%</b> 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.

**DISADVANTAGED BUSINESS ENTERPRISE:**

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

102-15(J)

SP1 G61

**Description**

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

**Definitions**

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

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

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

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

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

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

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

*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) DBE firm.

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

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

### **Forms and Websites Referenced in this Provision**

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

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

*RF-1 DBE Replacement Request Form* - Form for replacing a committed DBE.  
<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%20Notification%20Form.pdf>



*Letter of Intent* - Form signed by the Contractor and the DBE subcontractor, manufacturer or regular dealer that affirms that a portion of said contract is going to be performed by the signed DBE for the estimated amount (based on quantities and unit prices) listed at the time of bid.

<http://connect.ncdot.gov/letting/LetCentral/Letter%20of%20Intent%20to%20Perform%20as%20a%20Subcontractor.pdf>

*Listing of DBE Subcontractors Form* - Form for entering DBE subcontractors on a project that will meet this DBE goal. This form is for paper bids only.

[http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/08%20DBE%20Subcontractors%20\(Federal\).docx](http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/08%20DBE%20Subcontractors%20(Federal).docx)

*Subcontractor Quote Comparison Sheet* - Spreadsheet for showing all subcontractor quotes in the work areas where DBEs quoted on the project. This sheet is submitted with good faith effort packages.

<http://connect.ncdot.gov/business/SmallBusiness/Documents/DBE%20Subcontractor%20Quote%20Comparison%20Example.xls>

### **DBE Goal**

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

Disadvantaged Business Enterprises **3.0** %

- (A) *If the DBE goal is more than zero*, the Contractor shall exercise all necessary and reasonable steps to ensure that DBEs participate in at least the percent of the contract as set forth above as the DBE goal.
- (B) *If the DBE goal is zero*, the Contractor shall make an effort to recruit and use DBEs during the performance of the contract. Any DBE participation obtained shall be reported to the Department.

### **Directory of Transportation Firms (Directory)**

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

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

### **Listing of DBE Subcontractors**

At the time of bid, bidders shall submit all DBE participation that they anticipate to use during the life of the contract. Only those identified to meet the DBE goal will be considered committed, even though the listing shall include both committed DBE subcontractors and additional DBE subcontractors. Additional DBE subcontractor participation submitted at the time of bid will be used toward the Department's overall race-neutral goal. Only those firms with current DBE

certification at the time of bid opening will be acceptable for listing in the bidder's submittal of DBE participation. The Contractor shall indicate the following required information:

(A) Electronic Bids

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

- (1) Submit the names and addresses of DBE firms identified to participate in the contract. If the bidder uses the updated listing of DBE firms shown in the electronic submittal file, the bidder may use the dropdown menu to access the name and address of the DBE firm.
- (2) Submit the contract line numbers of work to be performed by each DBE firm. When no figures or firms are entered, the bidder will be considered to have no DBE participation.
- (3) The bidder shall be responsible for ensuring that the DBE is certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the bid-letting, that DBE's participation will not count towards achieving the DBE goal.

(B) Paper Bids

- (1) *If the DBE goal is more than zero,*
  - (a) Bidders, at the time the bid proposal is submitted, shall submit a listing of DBE participation, including the names and addresses on *Listing of DBE Subcontractors* contained elsewhere in the contract documents in order for the bid to be considered responsive. Bidders shall indicate the total dollar value of the DBE participation for the contract.
  - (b) If bidders have no DBE participation, they shall indicate this on the *Listing of DBE Subcontractors* by entering the word "None" or the number "0." This form shall be completed in its entirety. **Blank forms will not be deemed to represent zero participation.** Bids submitted that do not have DBE participation indicated on the appropriate form will not be read publicly during the opening of bids. The Department will not consider these bids for award and the proposal will be rejected.
  - (c) The bidder shall be responsible for ensuring that the DBE is certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the bid-letting, that DBE's participation will not count towards achieving the corresponding goal.
- (2) *If the DBE goal is zero,* entries on the *Listing of DBE Subcontractors* are not required for the zero goal, however any DBE participation that is achieved during the project shall be reported in accordance with requirements contained elsewhere in the special provision.

**DBE Prime Contractor**

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

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

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

**Written Documentation – Letter of Intent**

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

The documentation shall be received in the office of the 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 DBE to be used toward the DBE goal, or if the form is incomplete (i.e. both signatures are not present), the DBE participation will not count toward meeting the DBE goal. If the lack of this participation drops the commitment below the DBE goal, the Contractor shall submit evidence of good faith efforts, completed in its entirety, to the 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.

**Submission of Good Faith Effort**

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

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 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 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 DBE quotations shall be a part of the good faith effort submittal. This documentation may include written subcontractor quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

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

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

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

- (A) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising, written notices, use of verifiable electronic means through the use of the NCDOT Directory of Transportation Firms) the interest of all certified DBEs who have the capability to perform the work of the contract. The bidder must solicit this interest within at least 10 days prior to bid opening to allow the DBEs to respond to the solicitation. Solicitation shall provide the opportunity to DBEs within the Division and surrounding Divisions where the project is located. The bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.
- (B) Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved.
  - (1) Where appropriate, break out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.
  - (2) Negotiate with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be sublet includes potential for DBE participation (2<sup>nd</sup> and 3<sup>rd</sup> tier subcontractors).
- (C) Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (D) (1) Negotiating in good faith with interested DBEs. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, to facilitate DBE participation. Evidence of

such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.

- (2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidding contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.
- (E) Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associates and political or social affiliations (for example, union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
- (F) Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or bidder.
- (G) Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- (H) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; Federal, State, and local minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs. Contact within 7 days from the bid opening the Business Opportunity and Work Force Development Unit at [BOWD@ncdot.gov](mailto:BOWD@ncdot.gov) to give notification of the bidder's inability to get DBE quotes.
- (I) Any other evidence that the bidder submits which shows that the bidder has made reasonable good faith efforts to meet the DBE goal.

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

- (1) Whether the bidder's documentation reflects a clear and realistic plan for achieving the DBE goal.
- (2) The bidders' past performance in meeting the DBE goals.
- (3) The performance of other bidders in meeting the DBE goal. For example, when the apparent successful bidder fails to meet the DBE goal, but others meet it, you may reasonably raise the question of whether, with additional reasonable efforts the apparent successful bidder could have met the goal. If the apparent successful bidder fails to meet the DBE goal, but meets or exceeds the average

DBE participation obtained by other bidders, the Department may view this, in conjunction with other factors, as evidence of the apparent successful bidder having made a good faith effort.

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

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

The 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 DBE Participation Toward Meeting DBE Goal**

#### **(A) Participation**

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

#### **(B) Joint Checks**

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

#### **(C) Subcontracts (Non-Trucking)**

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

#### **(D) Joint Venture**

When a DBE performs as a participant in a joint venture, the Contractor may count toward its contract goal requirement a portion of the total value of participation with the DBE in

the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the DBE performs with its forces.

(E) Suppliers

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

(F) Manufacturers and Regular Dealers

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

- (1) The fees or commissions charged by a DBE firm for providing a *bona fide* service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, provided the fees or commissions are determined to be reasonable and not excessive as compared with fees and commissions customarily allowed for similar services.
- (2) With respect to materials or supplies purchased from a DBE, which is neither a manufacturer 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) DBE Utilization

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

**(B) DBE Utilization in Trucking**

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

- (1) The DBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there shall not be a contrived arrangement for the purpose of meeting DBE goals.
- (2) The DBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
- (3) The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
- (4) The DBE may subcontract the work to another DBE firm, including an owner-operator who is certified as a DBE. The DBE who subcontracts work to another DBE receives credit for the total value of the transportation services the subcontracted DBE provides on the contract.
- (5) The DBE may also subcontract the work to a non-DBE firm, including from an owner-operator. The DBE who subcontracts the work to a non-DBE is entitled to credit for the total value of transportation services provided by the non-DBE subcontractor not to exceed the value of transportation services provided by DBE-owned trucks on the contract. Additional participation by non-DBE subcontractors receives credit only for the fee or commission it receives as a result of the subcontract arrangement. The value of services performed under subcontract agreements between the DBE and the Contractor will not count towards the DBE contract requirement.
- (6) A DBE may lease truck(s) from an established equipment leasing business open to the general public. The lease must indicate that the DBE has exclusive use of and control over the truck. This requirement does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. This type of lease may count toward the DBE's credit as long as the driver is under the DBE's payroll.
- (7) Subcontracted/leased trucks shall display clearly on the dashboard the name of the DBE that they are subcontracted/leased to and their own company name if it is not identified on the truck itself. Magnetic door signs are not permitted.

**DBE Replacement**

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



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

A committed DBE subcontractor may only be terminated 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 DBE subcontractor fails or refuses to execute a written contract;
- (b) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;
- (c) The listed DBE subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements;
- (d) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (e) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR Parts 180, 215 and 1,200 or applicable state law;
- (f) The listed DBE subcontractor is not a responsible contractor;
- (g) The listed DBE voluntarily withdraws from the project and provides written notice of withdrawal;
- (h) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (i) A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract;
- (j) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the prime contractor seeks to terminate a DBE it relied upon to obtain the contract so that the prime contractor can self-perform the work for which the DBE contractor was engaged or so that the prime contractor can substitute another DBE or non-DBE contractor after contract award.

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

(A) Performance Related Replacement

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

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

- (1) Copies of written notification to DBEs that their interest is solicited in contracting the work defaulted by the previous DBE or in subcontracting other items of work in the contract.
  - (2) Efforts to negotiate with DBEs for specific subbids including, at a minimum:
    - (a) The names, addresses, and telephone numbers of DBEs who were contacted.
    - (b) A description of the information provided to DBEs regarding the plans and specifications for portions of the work to be performed.
  - (3) A list of reasons why DBE quotes were not accepted.
  - (4) Efforts made to assist the DBEs contacted, if needed, in obtaining bonding or insurance required by the Contractor.
- (B) Decertification Replacement
- (1) When a committed DBE is decertified by the Department after the SAF (*Subcontract Approval Form*) has been received by the Department, the Department will not require the Contractor to solicit replacement DBE participation equal to the remaining work to be performed by the decertified firm. The participation equal to the remaining work performed by the decertified firm will count toward the contract goal requirement.
  - (2) When a committed DBE is decertified prior to the Department receiving the SAF (*Subcontract Approval Form*) for the named DBE firm, the Contractor shall take all necessary and reasonable steps to replace the DBE subcontractor with another DBE subcontractor to perform at least the same amount of work to meet the DBE goal requirement. If a DBE firm is not found to do the same amount of work, a good faith effort must be submitted to NCDOT (see A herein for required documentation).
  - (3) Exception: If the DBE'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 DBE participation equal to the remaining work to be performed by the decertified firm. The participation equal to the remaining work performed by the decertified firm will count toward the contract goal requirement and overall goal.

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

### **Changes in the Work**

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

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

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

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

### **Reports and Documentation**

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

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

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

### **Reporting Disadvantaged Business Enterprise Participation**

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

- (A) Withholding of money due in the next partial pay estimate; or
- (B) Removal of an approved contractor from the prequalified bidders' list or the removal of other entities from the approved subcontractors list.

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

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

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

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

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

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

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

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

### **CERTIFICATION FOR FEDERAL-AID CONTRACTS:**

(3-21-90)

SP1 G85

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

- (A) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (B) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, *Disclosure Form to Report Lobbying*, in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by *Section 1352, Title 31, U.S. Code*. Any person who

fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

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

**CONTRACTOR'S LICENSE REQUIREMENTS:**

(7-1-95)

102-14

SP1 G88

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)

SP01 G090

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)

SP1 G092

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

SP1 G096

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 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 is exempt from the idling limitations set forth in this special provision.

**U.S. DEPARTMENT OF TRANSPORTATION HOTLINE:**

(11-22-94)

108-5

SP1 G100

To report bid rigging activities call: **1-800-424-9071**

The U.S. Department of Transportation (DOT) operates the above toll-free hotline Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the hotline to report such activities.

The hotline is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

**SUBSURFACE INFORMATION:**

(7-1-95)(Rev. 8-16-22)

450

SP1 G112 B

Subsurface information is available on the structure portion of this project.

**PORTABLE CONCRETE BARRIER - (Partial Payments for Materials):**

(7-1-95) (Rev. 8-16-11)

1170-4

SP1 G121

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

SP1 G125

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:

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.

**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”

**AWARD LIMITS:**

(4-19-22)

103

SP1 G141

Revise the *2018 Standard Specifications* as follows:

**Page 1-29, Subarticle 103-4(C), Award Limits, line 4-8,** delete and replace the first sentence in the first paragraph with the following:

A bidder who desires to bid on more than one project on which bids are to be opened in the same letting and who 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 form Award Limits on Multiple Projects for each project subject to the award limit.

**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.

### **EROSION AND SEDIMENT CONTROL/STORMWATER CERTIFICATION:**

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

105-16, 225-2, 16

SP1 G180

#### **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.

- (A) *Certified Supervisor* - Provide a certified Erosion and Sediment Control/Stormwater 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.
- (C) *Certified Installer* - Provide a certified installer to install or direct the installation for erosion or sediment/stormwater control practices.
- (D) *Certified Designer* - Provide a certified designer for the design of the erosion and sediment control/stormwater component of reclamation plans and, if applicable, for the design of the project erosion and sediment control/stormwater plan.

#### **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:

- (A) Either cease discharge or modify the discharge volume or turbidity levels to bring the downstream turbidity levels into compliance, or
- (B) Evaluate the upstream conditions to determine if the exceedance of the standard is due to 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 <https://connect.ncdot.gov/resources/roadside/FieldOperationsDocuments/TurbidityReductionOptionSheet.pdf> 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.

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.

**PROJECT SPECIAL PROVISIONS****ROADWAY****CLEARING AND GRUBBING - METHOD II:**

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

200

SP2 R02A

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.

**BURNING RESTRICTIONS:**

(7-1-95)

200, 210, 215

SP2 R05

Open burning is not permitted on any portion of the right-of-way limits established for this project. Do not burn the clearing, grubbing or demolition debris designated for disposal and generated from the project at locations within the project limits, off the project limits or at any waste or borrow sites in this county. Dispose of the clearing, grubbing and demolition debris by means other than burning, according to state or local rules and regulations.

**SHOULDER AND FILL SLOPE MATERIAL:**

(5-21-02)

235, 560

SP2 R45 A

**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**

Where the material has been obtained from an authorized stockpile or from a borrow source and *Borrow Excavation* is not included in the contract, no direct payment will be made for this work, as the cost of this work will be part of the work being paid at the contract lump sum price for *Grading*. If *Borrow Excavation* is included in this contract and the material has been obtained from an authorized stockpile or from a borrow source, measurement and payment will be as provided in Section 230 of the *2018 Standard Specifications* for *Borrow Excavation*.

**MANUFACTURED QUARRY FINES IN EMBANKMENTS:**

(01-17-17)

235

SP02 R72(Rev)

**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.

### 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 for *Borrow Excavation* is not included in the original contract then no separate payment will be made for this item and payment will be included in the lump sum price bid for *Grading*.

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 special provision). Where the pay item of *Geotextile for Pavement Stabilization* is not included in the original contract then no payment will be made for this item and will be considered incidental to the use of MQFs in embankment.

### CULVERT PIPE:

(8-20-19)(Rev. 5-17-22)

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, galvanized 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
Galvanized Corrugated Steel Pipe	1032-3

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

Item	Section
Polypropylene Pipe	1032-9
Galvanized Corrugated Steel Pipe	1032-3

**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, galvanized 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:

<b>Pay Item</b>	<b>Pay Unit</b>
__" Polypropylene Pipe	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 not use pipe sections, flared end sections, tees or elbows which do not have this seal of approval.

**BRIDGE APPROACH FILLS:**

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

422

SP4 R02A

**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 with MSE wall reinforcement connected to end bent caps. Construct 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.

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*.

<b>Item</b>	<b>Section</b>
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**

Type I Standard Approach Fill, Station \_\_\_\_\_  
Type II Modified Approach Fill, Station \_\_\_\_\_  
Type III Reinforced Approach Fill, Station \_\_\_\_\_

**Pay Unit**

Lump Sum  
Lump Sum  
Lump Sum

**BRIDGE APPROACH FILLS – GEOTEXTILE:**

(5-17-22)

SP4 R03

Place a single layer of Type 5 Geotextile one foot below the approach slab for the full width and length of the approach fill. Type 5 Geotextile shall meet the requirements of Section 1056 of the *Standard Specifications*. This revision applies to Roadway Standard 422.01, 422.02, 422.03 and Detail in Lieu of Standard 422DO10.

No separate measurement or payment will be made for the work required by this provision as the cost of such work shall be included in the lump sum price bid for *Type I Standard Approach Fill Station \_\_\_\_\_, Type III Reinforced Approach Fill, Station \_\_\_\_\_ or Type II Modified Approach Fill, Station \_\_\_\_\_.*

**PILES:**

(10-19-21)(Rev. 12-20-22)

450

SP4 R05

Revise the 2018 *Standard Specifications* as follows:

**Page 4-65, Article 450-1 DESCRIPTION, lines 8-9,** replace the fourth sentence of the first paragraph with the following:

Galvanize, metallize, restrike, redrive, splice, cut off and build up piles and perform predrilling, spudding and pile driving analyzer testing as necessary or required.

**Page 4-65, Article 450-1 DESCRIPTION, lines 14-16,** replace the third paragraph with the following:

The estimated pile lengths shown in the plans are sufficient for the minimum required pile embedment and penetration and are estimates of the pile lengths needed for required driving

resistance. For prestressed concrete piles, use estimated pile lengths for pile order lengths or the Engineer will provide pile order lengths based on testing prestressed concrete piles with the pile driving analyzer (PDA). For bridges with staged construction and pile order lengths based on testing prestressed concrete piles with the PDA, order lengths for latter stages will not be provided until pile driving for previous stage of construction is complete.

**Page 4-66, Article 450-3(C) Pile Accessories, line 14**, insert the following as the second, third and fourth sentence of the first paragraph:

Steel pile points for steel pipe piles include pipe pile cutting shoes and conical points. Use "inside fit" pipe pile cutting shoes, i.e., cutting shoes with an outside diameter equal to the pipe pile diameter. Use pipe pile plates with a diameter equal to the pipe pile diameter.

**Page 4-66, Article 450-3(D) Driven Piles, lines 37-39**, replace the fourth paragraph with the following:

Redrive piles raised or moved laterally due to driving adjacent piles. For initial drive of prestressed concrete piles below a depth of 10 ft or 20% of pile length, whichever is greater, drive each pile continuously except to pause driving for one hour or less to change pile cushions and remove templates. Design and construct templates so prestressed concrete piles can be driven to pile cut-off without exceeding the one-hour time limit. When a prestressed concrete pile attains the required resistance and pile penetration, do not drive the pile any further to avoid cutting off the pile. If a prestressed concrete pile does not have the minimum required driving resistance when the pile head is 1 ft above pile cut-off, stop driving the pile.

**Page 4-68, Article 450-3(D)(3) Required Driving Resistance, lines 10-11**, replace the second paragraph with the following:

Stop driving piles if "refusal" is reached. Refusal occurs at 240 blows per foot (20 blows per inch) or any equivalent set (maximum set of 1/2 inch in 10 blows) with the required stroke as per the pile driving criteria.

**Page 4-68, Article 450-3(D)(4) Restriking and Redriving Piles, lines 13-15**, replace the first sentence of the first paragraph with the following:

If piles do not attain the required resistance with the estimated or order lengths, the Engineer may require the Contractor to stop driving piles, wait and restrike or redrive piles to attain the required resistance.

**Page 4-69, Article 450-3(F) Pile Driving Analyzer, lines 16-18**, replace the first and second sentences of the second paragraph with the following:

Test piles in accordance with the plans or as directed by the Engineer. Provide piles for PDA testing with lengths shown in the plans.

**Page 4-69, Article 450-3(F)(1) PDA Testing, line 33 and 34**, replace the fifth sentence of the second paragraph with the following:

The PDA Operator or Engineer may require modified pile installation procedures during driving, including but not limited to driving piles deeper or to a higher driving resistance than stated in the

plans.

**Page 4-71, Article 450-4 MEASUREMENT AND PAYMENT, lines 27-28**, replace the second sentence of the third paragraph with the following:

Steel piles will be measured as the pile length before installation minus any pile cut-offs. Prestressed concrete piles will be measured as the authorized pile length before installation.

**Page 4-71, Article 450-4 MEASUREMENT AND PAYMENT, lines 40-45**, replace the fifth paragraph with the following:

After steel piles attain the required resistance and pile penetration and at the Contractor's option, drive piles to grade instead of cutting off steel piles provided the remaining portions of steel piles do not exceed 5 ft and steel piles can be driven without damage or exceeding the maximum stroke or refusal. When this occurs, the additional pile length driven will be measured and paid at the contract unit prices for \_\_\_\_ *Steel Piles* and \_\_\_\_ *Galvanized Steel Piles*.

**INCIDENTAL MILLING:**

(11-15-22)(Rev. 1-17-23)

607

SP6 R02R

Revise the *2018 Standard Specifications* as follows:

**Page 6-5, Article 607-3 CONSTRUCTION METHODS**, add the following paragraph after line 45:

Variable depth milling is intended to improve the cross-sectional slope of the pavement.

**Page 6-6, Article 607-3 CONSTRUCTION METHODS, line 9**, delete and replace the first sentence in the sixth paragraph with the following:

The Engineer may require re-milling of any area exhibiting pavement laminations, scabbing or other defects.

**Page 6-6, Article 607-4 TOLERANCE, lines 17-18**, delete and replace the second sentence with the following:

The Engineer may vary the depth of milling by not more than one inch. In the event the directed depth of milling cut is altered by the Engineer more than one inch, either the Department or the Contractor may request an adjustment in unit price in accordance with Article 104-3. In administering Article 104-3, the Department will give no consideration to value given to RAP due to the deletion or reduction in quantity of milling. Article 104-3 will not apply to the item of *Incidental Milling*.

**Page 6-6, Subarticle 607-5(A) Milled Asphalt Pavement, lines 21-23**, delete and replace the first sentence with the following:

Milled Asphalt Pavement, \_\_" Depth will be measured and paid as the actual number of square yards of pavement surface milled in accordance with this specification.

**Page 6-6, Subarticle 607-5(A) Milled Asphalt Pavement, lines 24-28**, delete and replace the



third and fourth sentence with the following:

The width will be the width required by the plans or directed by the Engineer, measured along the pavement surface. Areas to be paid under this item include mainline travel lanes, full width turn lanes greater than 500 feet in length, collector lanes, shoulders, and any additional equipment necessary to remove pavement in the area of manholes, water valves, curb, gutter and other obstructions.

**Page 6-6, Subarticle 607-5(B) Milled Asphalt Pavement Depth Varies from Required Depth, lines 29-37**, delete and replace the title and first paragraph with the following:

**(B) Variable Depth Milled Asphalt Pavement**

*Milling Asphalt Pavement*, \_\_\_" to \_\_\_" will be measured and paid as the actual number of square yards of pavement surface milled in accordance with this specification. In measuring this quantity, the length will be the actual length milled, measured along the pavement surface. The width will be the width required by the plans or directed by the Engineer, measured along the pavement surface. Areas to be paid under this item include mainline travel lanes, full width turn lanes greater than 500 feet in length, collector lanes, shoulders, and any additional equipment necessary to remove pavement in the area of manholes, water valves, curb, gutter and other obstructions.

**Page 6-6, Subarticle 607-5(C) Incidental Milling, lines 45-49**, delete and replace the first and second sentence with the following:

*Incidental Milling* will be measured and paid as the actual number of square yards of surface milled where the Contractor is required to mill butt joints, irregular areas, full width turn lanes 500 feet or less, intersections and re-mill areas that are not due to the Contractor's negligence. In measuring this quantity, the length will be the actual length milled, measured along the pavement surface. The width will be the width required by the plans or directed by the Engineer, measured along the pavement surface.

**Page 6-7, Subarticle 607-5(D) Milling of Defects, lines 6-10**, delete and replace the second sentence with the following:

If the Engineer directs re-milling of an area and is not due to the Contractor's negligence, the re-milled area will be measured as provided in Subarticle 607-5(C) and paid at the contract unit price per square yard for *Incidental Milling*.

**PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:**

(11-21-00)

620

SP6 R25

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 \$ **646.25** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **March 1, 2023**.

**FINAL SURFACE TESTING NOT REQUIRED:**

(5-18-04) (Rev. 2-16-16)

610

SP6 R45

Final surface testing is not required on this project in accordance with Section 610-13, *Final Surface Testing and Acceptance*.

**MILLING ASPHALT PAVEMENT:**

(1-15-19)

607

SP6 R59

Revise the *2018 Standard Specifications* as follows:

**Page 6-5, Article 607-2, EQUIPMENT, lines 14-16**, delete the seventh sentence of this Article and replace with the following:

Use either a non-contacting laser or sonar type ski system with a minimum of three referencing stations mounted on the milling machine at a length of at least 24 feet.

**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:

<b>TABLE 609-3 LIMITS OF PRECISION FOR TEST RESULTS</b>	
<b>Mix Property</b>	<b>Limits of Precision</b>
25.0 mm sieve (Base Mix)	± 10.0%
19.0 mm sieve (Base Mix)	± 10.0%
12.5 mm sieve (Intermediate & Type P-57)	± 6.0%
9.5 mm sieve (Surface Mix)	± 5.0%
4.75 mm sieve (Surface Mix)	± 5.0%
2.36 mm sieve (All Mixes, except S4.75A)	± 5.0%
1.18 mm sieve (S4.75A)	± 5.0%
0.075 mm sieve (All Mixes)	± 2.0%
Asphalt Binder Content	± 0.5%
Maximum Specific Gravity (G <sub>mm</sub> )	± 0.020
Bulk Specific Gravity (G <sub>mb</sub> )	± 0.030
TSR	± 15.0%
QA retest of prepared QC Gyratory Compacted Volumetric Specimens	± 0.015
Retest of QC Core Sample	± 1.2% (% Compaction)
Comparison QA Core Sample	± 2.0% (% Compaction)
QA Verification Core Sample	± 2.0% (% Compaction)
Density Gauge Comparison of QC Test	± 2.0% (% Compaction)
QA Density Gauge Verification Test	± 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 Type	Design ESALs millions <sup>A</sup>	Binder PG Grade	Compaction Levels		Max. Rut Depth (mm)	Volumetric Properties <sup>B</sup>			
			G <sub>mm</sub> @			VMA % Min.	VTM %	VFA Min.-Max.	%G <sub>mm</sub> @ N <sub>ini</sub>
			N <sub>ini</sub>	N <sub>des</sub>					
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	≤ 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 Types	Dust to Binder Ratio (P <sub>0.075</sub> / P <sub>bc</sub> )				0.6 - 1.4 <sup>C</sup>				
	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<sub>0.075</sub> / P<sub>bc</sub>) 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%)			
Mix Type	%RBR ≤ 20%	21% ≤ %RBR ≤ 30%	%RBR ≥ 30%
S4.75A, S9.5B, S9.5C, I19.0C, B25.0C	PG 64-22	PG 64-22 <sup>A</sup>	PG-58-28
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
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<b>Asphalt Concrete Mix Type</b>	<b>Minimum Surface and Air Temperature</b>
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:

<b>TABLE 610-7 DENSITY REQUIREMENTS</b>	
<b>Mix Type</b>	<b>Minimum % G<sub>mm</sub> (Maximum Specific Gravity)</b>
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:

<b>Pay Item</b>	<b>Pay Unit</b>
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
Asphalt Concrete Surface Course, Type S9.5D	Ton

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

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

<b>Mix Type</b>	<b>Coarse Aggregate Angularity<sup>B</sup></b>	<b>Fine Aggregate Angularity % Minimum</b>	<b>Sand Equivalent % Minimum</b>	<b>Flat and Elongated 5 : 1 Ratio % Maximum</b>
<i>Test Method</i>	<i>ASTM D5821</i>	<i>AASHTO T 304</i>	<i>AASHTO T 176</i>	<i>ASTM D4791</i>
S4.75A; S9.5B	75 / -	40	40	-
S9.5C; 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

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.

**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

**FRAME WITH GRATES (Driveway Drop Inlet):**

(3-21-00) (Rev.7-18-06)

SPI 8-35

**Description**

Provide grates for driveway drop inlets that are fabricated steel or cast iron. Provide grates that are of a design and weight that is recommended by the manufacturer as being adequate for HS-20 loadings. Furnish a manufacturer's certification stating that the grates and frame furnished on the project have been designed and manufactured to be adequate for an HS-20 loading. Provide grates with a minimum clear waterway opening of 50 in<sup>2</sup> per 1'-0" length of grate.

If the frame and grate is made from fabricated steel, the requirements of Article 1074-9 of the *2018 Standard Specifications* will be applicable. If the grate and frame is made from iron castings, the requirements of Article 1074-7 of the *Standard Specifications* will be applicable.

**Measurement and Payment**

*Frame with Grates, Driveway Drop Inlet* will be measured and paid for as the actual number of linear feet that have been incorporated into the completed and accepted work. Such price and payment will be full compensation for furnishing the grates and frame, and all labor and incidentals necessary to complete the work.

Payment will be made under:

**Pay Item**

Frame with Grates, Driveway Drop Inlet

**Pay Unit**

Linear Foot

**GUARDRAIL END UNITS & TEMPORARY GUARDRAIL END UNITS, TYPE TL-3:**

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

862

SP8 R65 (Rev.)

**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 APL. Units shall not be modified by the manufacturer and installer once approved and on the NCDOT APL.

Prior to installation the Contractor shall submit to the Engineer 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*.

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:

<b>Pay Item</b>	<b>Pay Unit</b>
Guardrail End Units, Type TL-3	Each
Temporary Guardrail End Units, Type TL-3	Each

**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:

<b>Pay Item</b>	<b>Pay Unit</b>
Guardrail Anchor Units, Type ____	Each
Temporary Guardrail Anchor Units, Type ____	Each

**ADJUSTMENT OF CATCH BASINS, MANHOLES, DROP INLETS, METER BOXES AND VALVE BOXES:**

(11-15-22)

858

SP8 R98R

Revise the 2018 Standard Specifications as follows:

**Page 8-38, Article 858-4 MEASUREMENT AND PAYMENT**, lines 10-11, delete and replace the fifth paragraph with the following:

Where any catch basin, drop inlet, manhole, meter box or valve box is adjusted more than once because of milling operations, each adjustment will be measured and paid.

**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:

TABLE 1000-1 REQUIREMENTS FOR CONCRETE											
Class of Concrete	Min. Compressive Strength at 28 days	Maximum Water-Cement Ratio				Consistency Maximum Slump		Cement Content			
		Air-Entrained Concrete		Non-Air-Entrained Concrete		Vibrated	Non-Vibrated	Vibrated		Non-Vibrated	
		Rounded Aggregate	Angular Aggregate	Rounded Aggregate	Angular Aggregate			Min.	Max.	Min.	Max.
		Units	psi					inch	inch	lb/cy	lb/cy
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
A	3000	0.488	0.532	0.550	0.594	3.5 <sup>A</sup>	4.0	564	---	602	---
B	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	as needed	as needed	as needed	as needed



Prestressed	per contract	See Table 1078-1	See Table 1078-1	---	---	8.0	---	564	as needed	---	---
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- 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.

**HIGH STRENGTH CONCRETE FOR DRIVEWAYS:**

(11-21-00) (Rev. 1-17-12)

848

SP10 R02

Use high early strength concrete for all driveways shown in the plans and as directed by the Engineer. Provide high early strength concrete that meets the requirements of Article 1000-5 of the *2018 Standard Specifications*.

Measurement and payment will be in accordance with Section 848 of the *2018 Standard Specifications*.

**THERMOPLASTIC INTERMIXED BEAD TESTING:**

7-19-22

1087

SP10 R04

Revise the *2018 Standard Specifications* as follows:

**Page 10-183, Subarticle 1087-7(B) Thermoplastic Pavement Marking Material Composition**, delete line 34 and 35.

**Page 10-184, Article 1087-8 MATERIAL CERTIFICATION**, delete and replace with the following after line 34:

Drop-on Glass Beads	Type 3 Material Certification and Type 4 Material Certification
Intermix Glass Beads	Type 2 Material Certification and Type 3 Material Certification
Paint	Type 3 Material Certification
Removable Tape	Type 3 Material Certification
Thermoplastic	Type 3 Material Certification and Type 4 Material Certification
Cold Applied Plastic	Type 2 Material Certification and Type 3 Material Certification
Polyurea	Type 2 Material Certification and Type 3 Material Certification

**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 ≥ 45%, and x,y shall fall within PR#1 chart chromaticity limits.

**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	Test Method
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
pH	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.

**GEOSYNTHETICS:**

(03-21-23)(Rev. 4-18-23)

1056

SP10 R56

Revise the *Standard Specifications* as follows:

**Page 10-77, Article 1056-1 DESCRIPTION, lines 13-16,** delete and replace the second sentence in the second paragraph with the following:

Steel anchor pins shall have a diameter of at least 3/16 inch, a length of at least 18 inches, a point at one end and a head at the other end that will retain a steel washer with an outside diameter of at least 1.5 inches.

**Page 10-77, Article 1056-2 HANDLING AND STORING, lines 20-21,** delete and replace the third sentence in the first paragraph with the following:

Geosynthetics with defects, flaws, deterioration or damage will be rejected by the Engineer.

**Page 10-77, Article 1056-3 CERTIFICATIONS AND IDENTIFICATION, lines 25-27,** delete and replace the first sentence in the first paragraph with the following:

Provide Type 1, Type 2 or Type 4 material certifications in accordance with Article 106-3 for geosynthetics except certifications are not required for Type 1 through Type 5 geotextiles.

**Page 10-77, Article 1056-3 CERTIFICATIONS AND IDENTIFICATION, lines 32-35,** delete the second paragraph.

**Page 10-77, Article 1056-3 CERTIFICATIONS AND IDENTIFICATION, lines 36-41,** delete and replace the third paragraph with the following:

Allow the Engineer to visually identify geosynthetic products before installation. Open packaged geosynthetics just before use in the presence of the Engineer to verify the correct product. Geosynthetics that are missing original packaging or product labels or that have been unwrapped or previously opened will be rejected unless otherwise approved by the Engineer.

**Page 10-77, Article 1056-4 GEOTEXTILES, lines 43-45,** delete the first paragraph.

**Page 10-78, Article 1056-4 GEOTEXTILES, before line 1 and lines 1-5,** delete Table 1056-1 and lines 1-5 and replace with the following:

<b>TABLE 1056-1 GEOTEXTILE REQUIREMENTS</b>						
<b>Property<sup>A</sup></b>	<b>Requirement (MARV<sup>A</sup>)</b>					<b>Test Method</b>
	<b>Type 1</b>	<b>Type 2</b>	<b>Type 3<sup>B</sup></b>	<b>Type 4</b>	<b>Type 5<sup>C</sup></b>	
<i>Typical Application</i>	<i>Shoulder Drains</i>	<i>Under Rip Rap</i>	<i>Silt Fence Fabric</i>	<i>Soil Stabilization</i>	<i>Subgrade Stabilization</i>	
Elongation (MD & CD)	≥ 50%	≥ 50%	≤ 25%	< 50%	< 50%	ASTM D4632
Grab Strength (MD & CD) <sup>A</sup>			100 lb			ASTM D4632
Tear Strength (MD & CD) <sup>A</sup>	Table 1 <sup>D</sup> , Class 3	Table 1 <sup>D</sup> , Class 1	–	Table 1 <sup>D</sup> , Class 3	–	ASTM D4533
Puncture Strength			–			ASTM D6241
Ultimate Tensile Strength (MD & CD) <sup>A</sup>	–	–	–	–	Table 12 <sup>D</sup> , Class 4A	ASTM D4595
Permittivity	Table 2 <sup>D</sup> , 15% to 50% <i>in Situ</i> Soil	Table 6 <sup>D</sup> , 15% to 50% <i>in Situ</i> Soil	Table 7 <sup>D</sup>	Table 5 <sup>D</sup>	Table 12 <sup>D</sup> , Class 4A	ASTM D4491
Apparent Opening Size	Passing 0.075 mm	Passing 0.075 mm				ASTM D4751
UV Stability (Retained Strength)						ASTM D4355

**A.** MD, CD and MARV per Article 1056-3.

**B.** Minimum roll width of 36 inches required.

**C.** Minimum roll width of 13 feet required unless otherwise approved by the Engineer for the application.

**D.** Per AASHTO M 288.

**Page 10-78, Article 1056-5 GEOCOMPOSITE DRAINS, before line 9 and lines 9-10, delete Table 1056-2 and lines 9-10 and replace with the following:**

<b>TABLE 1056-2 GEOCOMPOSITE DRAIN REQUIREMENTS</b>				
<b>Property</b>	<b>Requirement</b>			<b>Test Method</b>
	<b>Sheet Drain</b>	<b>Strip Drain</b>	<b>Wick Drain</b>	
Width	≥ 12"	12" ±1/4"	4" ±1/4"	N/A
In-Plane Flow Rate <sup>A</sup> (with gradient of 1.0 and 24-hour seating period)	6 gpm/ft @ applied normal compressive stress of 10 psi	15 gpm/ft @ applied normal compressive stress of 7.26 psi	1.5 gpm <sup>B</sup> @ applied normal compressive stress of 1.45 psi	ASTM D4716

**A.** MARV per Article 1056-3.

**B.** Per foot of width tested.

**Page 10-79, Article 1056-5 GEOCOMPOSITE DRAINS, before line 3, delete Table 1056-3 and replace with the following:**

<b>TABLE 1056-3 DRAINAGE CORE REQUIREMENTS</b>			
<b>Property</b>	<b>Requirement</b>		<b>Test Method</b>
	<b>Sheet Drain</b>	<b>Strip Drain</b>	
Thickness	1/4"	1"	ASTM D1777 or D5199
Compressive Strength <sup>A</sup>	40 psi	30 psi	ASTM D6364

**A.** MARV per Article 1056-3.

**Page 10-79, Article 1056-5 GEOCOMPOSITE DRAINS, before line 6 and lines 6-11, delete Table 1056-4, lines 6-7 and the last paragraph and replace with the following:**

<b>TABLE 1056-4 WICK DRAIN GEOTEXTILE REQUIREMENTS</b>		
<b>Property</b>	<b>Requirement</b>	<b>Test Method</b>
Elongation	≥ 50%	ASTM D4632
Grab Strength	Table 1 <sup>A</sup> , Class 3	ASTM D4632
Tear Strength		ASTM D4533
Puncture Strength		ASTM D6241
Permittivity <sup>B</sup>	0.7 sec <sup>-1</sup>	ASTM D4491
Apparent Opening Size (AOS)	Table 2 <sup>A</sup> , > 50% <i>in Situ</i> Soil Passing 0.075 mm	ASTM D4751
UV Stability (Retained Strength)		ASTM D4355

**A.** Per AASHTO M 288.

**B.** MARV per Article 1056-3.

For wick drains with a geotextile fused to both faces of a corrugated drainage core along the peaks of the corrugations, use wick drains with an ultimate tensile strength of at least 1,650 lbs. per 4 inch width in accordance with ASTM D4595 and geotextiles with a permittivity, AOS and UV stability that meet Table 1056-4.

Page 10-80, Article 1056-6 GEOCELLS, before line 1 and lines 1-4, delete Table 1056-5 and lines 1-4 and replace with the following:

<b>TABLE 1056-5 GEOCELL REQUIREMENTS</b>		
<b>Property</b>	<b>Requirement</b>	<b>Test Method</b>
Cell Depth	4"	N/A
Fully Expanded Cell Area	100 sq.in. max	N/A
Sheet Thickness	50 mil -5%, +10%	ASTM D5199
Density	58.4 pcf min	ASTM D1505
Carbon Black Content	1.5% min	ASTM D1603 or D4218
ESCR <sup>A</sup>	5000 hr min	ASTM D1693
Coefficient of Direct Sliding (with material that meets AASHTO M 145 for soil classification A-2)	0.85 min	ASTM D5321
Short-Term Seam (Peel) Strength (for 4" seam)	320 lb min	USACE <sup>C</sup> Technical Report GL-86-19, Appendix A
Long-Term Seam (Hang) Strength <sup>B</sup> (for 4" seam)	160 lb min	

A. Environmental Stress Crack Resistance.

B. Minimum test period of 168 hours with a temperature change from 74°F to 130°F in 1-hour cycles.

C. US Army Corps of Engineers (USACE).

### **TEMPORARY SHORING:**

(2-20-07) (Rev. 10-19-21)

SP11 R02

#### **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

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*.

<b>Item</b>	<b>Section</b>
Concrete Barrier Materials	1170-2
Flowable Fill, Excavatable	1000-6
Geosynthetics	1056

<b>Item</b>	<b>Section</b>
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](http://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:

<b>Material Type</b>	<b>Shoring Backfill</b>
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 pcf,

(b)

Friction Angle ( $\phi$ )	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 compaction equipment with feet. Do not displace or damage reinforcement when placing and 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 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:

<b>Pay Item</b>	<b>Pay Unit</b>
Temporary Shoring	Square Foot

**MATERIAL AND EQUIPMENT STORAGE & PARKING OF PERSONAL VEHICLES:**  
 11-17-21(Rev. 8-16-22) 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.

<b>TABLE 1101-1</b>	
<b>MATERIAL AND EQUIPMENT STORAGE FROM ACTIVE TRAVEL LANES</b>	
Posted Speed Limit (mph)	Distance (ft)
40 or less	≥ 18
45-50	≥ 28
55	≥ 32
60 or higher	≥ 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 Article 1101-8 or as directed by the Engineer before use.

**WORK ZONE INSTALLER:**  
 (7-20-21)(Rev. 8-16-22) 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 or other NCDOT approved training provider 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 or other NCDOT approved training provider.

All certification records for qualified work zone installers and flaggers shall be uploaded by the approved training agency or other NCDOT approved training provider to the Department's Work Zone Education Verification App (WZ-EVA) prior to the qualified work zone installer or flagger performing any traffic control duties on the project. For more information about WZ-EVA, see the Work Zone Safety Training webpage.

**PORTABLE CHANGEABLE MESSAGE SIGNS:**

(9-20-22)(Rev. 11-15-22)

1089, 1120

SP11 R10

Revise the *2018 Standard Specifications* as follows:

**Page 10-197, Subarticle 1089-7(D) Controller, line 16**, add the following after the third sentence of the first paragraph:

Change the controller password from the factory default and periodically change the controller password to deter unauthorized programming of the controller.

**Page 10-197, Subarticle 1089-7(D) Controller, lines 16-19**, replace the fourth sentence of the first paragraph with the following:

The password system is recommended to include at least two levels of security such that operators at one level may only change message sequences displayed using preprogrammed sequences and operators at a higher level may create and store messages or message sequences.

**Page 10-197, Subarticle 1089-7(D) Controller, line 24** replace the sentence with the following:

The controller shall be stored in a locked, weather and vandal resistant box when not in use and after changes to the messages are made.

**Page 11-8, Article 1120-3 CONSTRUCTION METHODS, lines 26-32,** replace the second paragraph with the following:

Provide an experienced operator for the portable changeable message sign during periods of operation to ensure that the messages displayed on the sign panel are in accordance with the plans and Subarticle 1089-7(D). Change the controller password from the factory default and periodically change the controller password to deter unauthorized programming of the controller. Using two levels of password security is recommended such that operators at one level may only change message sequences displayed using preprogrammed sequences and operators at a higher level may create and store messages or message sequences. Lock the controller in a weather and vandal resistant box when not in use and after changes to the messages are made.

**LAW ENFORCEMENT:**

(6-21-22)(Rev. 11-15-22)

1190

SP11 R30

Revise the *2018 Standard Specifications* as follows:

**Page 11-19, Article 1190-1 DESCRIPTION, lines 4-5,** replace the paragraph with the following:

Furnish Law Enforcement Officers and official Law Enforcement vehicles to direct traffic in accordance with the contract.

**Page 11-19, Article 1190-2 CONSTRUCTION METHODS, lines 7-10,** replace the first and second paragraph with the following:

Use off duty uniformed Law Enforcement Officers and official Law Enforcement vehicles equipped with blue lights to direct or control traffic as required by the plans or by the Engineer.

Law Enforcement vehicles shall not be parked within the buffer space on any roadway. Law Enforcement vehicles shall not be used to close or block an active travel lane on multilane roadways with a posted speed limit of 45 MPH or higher, except as allowed during rolling roadblock operations as shown in the *Roadway Standard Drawings* or while responding to an emergency.

**Page 11-19, Article 1190-3 MEASUREMENT AND PAYMENT, lines 14-15,** replace the second sentence of the first paragraph with the following:

There will be no direct payment for official Law Enforcement vehicles as they are considered incidental to the pay item.

**EXTRUDED THERMOPLASTIC PAVEMENT MARKING THICKNESS:**

3-19-19 (Rev. 6-21-22)

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 the required thickness above the surface of the pavement as shown in Table 1205-3.

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

<b>TABLE 1205-3 MINIMUM THICKNESS REQUIREMENTS FOR THERMOPLASTIC</b>	
<b>Thickness</b>	<b>Location</b>
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

**PORTABLE CONSTRUCTION LIGHTING:**

4-19-22

1413

SP14 R13

Revise the *2018 Standard Specifications* as follows:

**Page 14-24, Article 1413-3 TOWER LIGHT, lines 2-7,** delete and replace the first and second sentence in the first paragraph with the following:

Use tower lights which consist of mercury vapor, metal halide, high pressure sodium, low pressure sodium or light emitting diode (with correlated color temperature of 4000 Kelvin or less) fixtures mounted on a tower approximately 30 feet in height. Use tower light fixtures which are heavy duty flood, area, or roadway style with wide beam spread, have sufficient output to provide the minimum illumination requirements for the Category of work, are weatherproof and supplied with attached waterproof power cord and plug.

**Page 14-24, Article 1413-3 TOWER LIGHT, lines 11-12,** delete and replace the second paragraph with the following:

Provide tower lights of sufficient wattage or quantity to provide the minimum average maintained horizontal illuminance over the work area based on the Category of work as shown in Table 1413-1. For any work not covered in Table 1413-1, provide a minimum average maintained horizontal illuminance of 20.0 footcandles over the work area.

Category	Description of Construction and Maintenance Task	Minimum Average Maintained Horizontal Illuminance
I	Excavation; Embankment, Fill and Compaction; Maintenance of Embankment; Asphalt Pavement Rolling; Subgrade, Stabilization and Construction; Base Course Rolling; Sweeping and Cleaning; Landscaping, Sod and Seeding; Reworking Shoulders.	5.0 footcandle
II	Barrier Wall and Traffic Separators; Milling, Removal of Pavement; Asphalt Paving and Resurfacing; Concrete Pavement; Base Course Grading and Shaping; Surface Treatment; Waterproofing and Sealing; Sidewalk Construction; Guardrails and Fencing; Striping and Pavement Marking; Highway Signs; Bridge Decks; Drainage Structures and Drainage Piping; Other Concrete Structures; Repair of Concrete Pavement; Pothole Filling; Repair of Guardrail and Fencing.	10.0 footcandle
III	Traffic Signals; Highway Lighting Systems; Crack Filling.	20.0 footcandle

**Page 14-24, Article 1413-4 MACHINE LIGHTS, lines 18-21,** delete and replace the first and second sentence in the first paragraph with the following:

Use machine lights which have mercury vapor, metal halide, high pressure sodium, low pressure sodium or light emitting diode (with correlated color temperature of 4000 Kelvin or less) fixtures mounted on supports attached to the construction machine at a height of approximately 13 feet.

**Page 14-24, Article 1413-5 CONSTRUCTION METHODS, lines 33-34,** delete and replace the third and fourth sentence in the first paragraph with the following:

Submit photometric calculations showing the minimum average maintained horizontal illuminance over the work area and the tower spacing to the Engineer for review and approval prior to installation.

**STANDARD SPECIAL PROVISION**  
**AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS**

(5-20-08)

Z-2

*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*.

**STANDARD SPECIAL PROVISION**  
**NCDOT GENERAL SEED SPECIFICATION FOR SEED QUALITY**

(5-17-11)

Z-3

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:

<u>Restricted Noxious Weed</u>	<u>Limitations per Lb. Of Seed</u>	<u>Restricted Noxious Weed</u>	<u>Limitations per 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 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)	Bermudagrass
Kobe Lespedeza	Browntop Millet
Korean Lespedeza	German Millet – Strain R
Weeping Lovegrass	Clover – Red/White/Crimson
Carpetgrass	

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	Japanese Millet
Crownvetch	Reed Canary Grass
Pensacola Bahiagrass	Zoysia
Creeping Red Fescue	

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



**STANDARD SPECIAL PROVISION****ERRATA**

(10-16-18) (Rev. 4-18-23)

Z-4

Revise the *2018 Standard Specifications* as follows:

**Division 1**

**Page 1-1, Article 101-2 Abbreviations, line 13**, replace " American National Standards Institute, Inc." with "American National Standards Institute".

**Page 1-1, Article 101-2 Abbreviations, line 32**, replace "Equivalent Single Axis Load" with "Equivalent Single Axle Load".

**Page 1-16, Subarticle 102-9(A) General, line 26**, replace "10 U.S.C. 2304(g)" with "10 U.S.C. 3205".

**Page 1-43, Article 104-13 RECYCLED PRODUCTS OR SOLID WASTE MATERIALS, line 4**, replace "104-13(B)(2)" with "104-13(B)".

**Page 1-52, Article 106-1 RECYCLED PRODUCTS OR SOLID WASTE MATERIALS, line 25**, replace "13 NCAC 7CF.0101(a)(99)" with "29 CFR 1910.1200".

**Page 1-79, Article 109-1 MEASUREMENT AND PAYMENT, Test Method prior to line 34**, replace "AASHTO M 32" with "AASHTO M 336".

**Division 2**

**Page 2-5, Article 210-2 CONSTRUCTION METHODS, line 21**, replace " NCGS §§ 130A-444 to -452" with "NCGS §§ 130A-444 to -453".

**Page 2-13, Article 225-2 EROSION CONTROL REQUIREMENTS, line 17**, replace "the Sedimentation and Pollution Control Act" with "Article 107-12".

**Page 2-20, Subarticle 230-4(B)(3) Reclamation Plan, line 12**, replace " Department's borrow and waste site reclamation procedures for contracted projects" with "Department's *Borrow Waste and Staging Site Reclamation Procedures for Contract Projects*".

**Page 2-25, Subarticle 235-3(E) Surcharges and Waiting Periods, line 21 and 27**, delete "Department's Materials and Tests Unit.".

**Page 2-27, Article 240-4 MEASUREMENT AND PAYMENT, line 23**, replace "Section 225" with "Article 225-7".

**Page 2-30, Article 275-4 MEASUREMENT AND PAYMENT, line 33**, replace "Section 815" with "Article 815-4".

**Division 4**

**Page 4-18, Subarticle 411-5(C)(3) Coring, line 11**, replace "in accordance with ASTM D5079" with "with methods acceptable to the Engineer".

**Page 4-50, Article 430-2 MATERIALS, prior to line 15,** replace Section “1080-9” with “1080-7”.

**Page 4-53, Article 440-2 MATERIALS, prior to line 6,** replace Section “1080-9” with “1080-7”.

**Page 4-58, Article 442-2 MATERIALS, prior to line 15,** replace Section “1080-6” with “1080-12”.

**Page 4-59, Subarticle 442-7(A) Blast Cleaning, line 36,** replace Article “1080-6” with “1080-12”.

**Page 4-76, Article 454-2 MATERIALS, prior to line 24,** replace Section “815-2” with “1044”.

**Page 4-79, Article 455-2 MATERIALS, prior to line 21,** replace Section “815” with “1044”.

**Page 4-80, Subarticle 455-3(B) Precast Gravity Wall Designs, line 23 and lines 25-26,** replace “AASHTO LRFD specifications” with “*AASHTO LRFD Bridge Design Specifications*”.

**Page 4-84, Article 458-5 MEASUREMENT AND PAYMENT, line 31,** replace article number “454-1” with “458-1”.

#### **Division 6**

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

**Page 6-10, Subarticle 609-6(C) Control Charts, line 17,** replace Section number “7021” with “7.20.1”.

**Page 6-13, Article 609-9 QUALITY ASSURANCE, line 31,** replace Section number “7.60” with  
with  
“7.6”.

**Page 6-26, Subarticle 610-13(A)(1) Acceptance for New Construction, line 31,** replace Table number “610-7” with “610-8”.

**Page 6-29, Subarticle 610-13(B) North Carolina Hearne Straightedge, line 32,** replace Table number “610-8” with “610-9”.

**Page 6-31, Article 610-14 DENSITY ACCEPTANCE, Specified Density prior to line 30 and line 32,** replace Table number “610-6” with “610-7”.

**Page 6-37, Article 650-5 CONSTRUCTION METHODS, line 10,** replace Section number “9.5(E)” with “9.5.1(E)”.

**Page 6-44, Subarticle 660-8(B) Asphalt Mat and Seal, line 40,** replace Subarticle number “660-8(A)” with “660-8(C)”.

**Page 6-44, Subarticle 660-8(B) Asphalt Mat and Seal, line 42,** replace Subarticle number “660-8(C)” with “660-8(A)”.

**Division 7**

**Page 7-11, Subarticle 700-15(E) Compressive Strength, line 5,** replace “AASHTO T 23” with “AASHTO R 100”.

**Page 7-24, Article 723-4 Very High Early Strength Concrete for Concrete Pavement Repair, line 4,** replace “AASHTO T126” with “AASHTO R 39”.

**Page 7-24, Article 723-5 MEASUREMENT AND PAYMENT, line 34,** replace "Section 225" with “Article 225-7”.

**Page 7-24, Article 723-5 MEASUREMENT AND PAYMENT, line 36,** replace "Section 270" with “Article 270-4”.

**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 8**

**Page 8-11, Article 815-1 MATERIALS, after line 35,** replace “1080-12” with “1080-10”.

**Page 8-13, Article 816-1 MATERIALS, after line 28,** replace “1080-12” with “1080-10”.

**Page 8-17, Article 825-1 Description, line 5,** delete “853” and “855”.

**Division 10**

**Page 10-2, Subarticle 1000-3(B) Air Entrainment, line 33,** replace “Chase” with “Chace”.

**Page 10-4, Subarticle 1000-4(A) Composition and Design, after line 17,** replace “T23” with “R100”.

**Page 10-4, Subarticle 1000-4(B) Air Entrainment, line 31 and 33,** replace “Chase” with “Chace”.

**Page 10-4, Subarticle 1000-4(C) Strength of Concrete, line 39 and 41,** replace “T 23” with “R 100”.

**Page 10-15, Subarticle 1000-11(B) Mixing Time for Central Mixed Concrete, after line 35,** replace “T 23” with “R 100”.

**Page 10-22, Article 1003-3 COMPOSITION AND DESIGN, line 9,** replace “Engineer” with “engineer”.

**Page 10-23, Article 1003-4 GROUT REQUIREMENTS, line 16 and 18,** replace “T 23” with “R 100”.

**Page 10-26, Article 1005-4 TESTING, after line 26,** replace “1014-2€(6)” with “1014-2€(6)” in C. of Table 1005-1 footnote and replace “Lightweight<sup>B</sup>” with “Lightweight<sup>C</sup>”.

**Page 10-29, Subarticle 1012-1(B)(4) Flat and Elongated Pieces, line 44,** delete “SF9.5A”

**Page 10-36, Subarticle 1012-2(E) Toughness (Resistance to Abrasion), line 31,** replace “course” with “coarse”.

**Page 10-37, Article 1012-4, LIGHTWEIGHT AGGREGATE, line 4,** replace Table number “1012-8” with “1012-5”.

**Page 10-48, Subarticle 1020-10(A) Mineral Fibers, line 27,** replace “Table 1012-5” with “Table 1020-2”.

**Page 10-52, Article 1024-5 FLY ASH, line 12,** replace “Table 2” with “Table 3”.

**Page 10-60, Subarticle 1032-6(F) Joint Materials, line 15,** replace “AASHTO M 198” with “ASTM C990” and delete “Type B”.

**Page 10-61, Article 1034-3 CONCRETE SEWER PIPE, line 33,** replace “AASHTO M 198” with “ASTM C990” and delete “Type A or B”.

**Page 10-64, Article 1040-1 BRICK, line 12,** replace “ASTM C62” with “ASTM C62 or ASTM C216”.

**Page 10-67, Article 1044-7 CORRUGATED PLASTIC PIPE AND FITTINGS, line 24,** replace “AASHTO M 294 for heavy duty tubing” with “Article 1032-7 and AASHTO M 252”.

**Page 10-69, Subarticle 1046-3(D) Offset Blocks, before line 1,** replace “WIRE DIAMETER” with “COMPOSITE OFFSET BLOCKS” as the title of Table 1046-1 and replace “NCHRP Report 350” with “MASH” in Table 1046-1.

**Page 10-80, Article 1060-2 FERTILIZER, line 18,** replace “North Carolina Fertilizer Law” with “North Carolina Commercial Fertilizer Law”.

**Page 10-83, Article 1060-9 WATER, line 9,** replace “15 NCAC 2B.0200” with “15A NCAC 02B.0200”.

**Page 10-86, Article 1070-3 COLD DRAWN STEEL WIRE AND WIRE REINFORCEMENT, line 23 and 25,** replace “M 32” and “M 55” with “M 336”.

**Page 10-87, Article 1070-6 DOWELS AND TIE BARS FOR PORTLAND CEMENT CONCRETE PAVEMENT, line 17,** replace “AASHTO M 32” with “AASHTO M 336”.

**Page 10-88, Subarticle 1070-7(D) Handling, Storage and Transportation, line 40,** replace “Section” with “Subarticle”.

**Page 10-89, Article 1070-8 SPIRAL COLUMN REINFORCING STEEL, line 21,** replace “AASHTO M 32” with “AASHTO M 336”.

**Page 10-91, Article 1072-3 BEARING PLATE ASSEMBLIES, line 44,** replace “Article 1080-9” with “Article 1080-7”.

**Page 10-92, Subarticle 1072-5(A) General, after line 30,** replace “SAMPLING REQUIREMENTS FOR HIGH STRENGTH BOLTS, NUTS AND WASHERS” with “SAMPLING REQUIREMENTS FOR HIGH STRENGTH BOLTS, NUTS AND WASHERS TO INCLUDE DIRECT TENSION INDICATORS” as the title of Table 1072-1.

**Page 10-95, Subarticle 1072-5(D)(7)(a) Mill Test Report(s), line 18,** replace title with “Mill Test Report(s) (MTR)”.

**Page 10-95, Subarticle 1072-5(D)(7)(b) Manufacturer Certified Test Report(s), line 24,** replace title with “Manufacturer Certified Test Report(s) (MCTR)”.

**Page 10-96, Subarticle 1072-5(D)(7)(c) Distributor Certified Test Report(s), line 1,** replace title with “Distributor Certified Test Report(s) (DCTR)”.

**Page 10-98, Subarticle 1072-5(F) Galvanized High Strength Bolts, Nuts and Washers, line 11,** replace “Article 1080-9” with “Article 1080-7”.

**Page 10-98, Subarticle 1072-5(F) Galvanized High Strength Bolts, Nuts and Washers, line 11,** replace “Article 1080-9” with “Article 1080-7”.

**Page 10-111, Subarticle 1072-18(B) General, line 24,** replace “Structural Welding Code-Reinforcing Steel” with “Structural Welding Code-Steel Reinforcing Bars”.

**Page 10-117, Article 1074-1 WELDING, lines 21-22,** replace “Structural Welding Code-Reinforcing Steel” with “Structural Welding Code-Steel Reinforcing Bars”.

**Page 10-119, Article 1074-7(B) Gray Iron Castings, line 16,** replace “M306” with “AASHTO M 306”.

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

**Page 10-125, Subarticle 1077-5(B) Testing, line 31,** replace “T 23” with “R 100”.

**Page 10-136, Subarticle 1077-5(J)(2) Mixing Time for Central Mixed Concrete, after line 17,** replace “T23” with “R100”.

**Page 10-131, Subarticle 1078-4(A) Composition and Design, after line 23, in Table 1078-2** replace “T 23” with “R 100”.

**Page 10-153, Subarticle 1079-1 PREFORMED BEARING PADS, line 8,** replace “MIL-C882-D” with “MIL-C-882-E”.

**Page 10-154, Subarticle 1079-2(A) General, line 6,** delete “and 1079-2(E)”.

**Page 10-156, Article 1080-5 SELF-CURING INORGANIC ZINC PAINT, line 8,** replace “AASHTO M 252” with “AASHTO M 300”.

**Page 10-156, Article 1080-5 SELF-CURING INORGANIC ZINC PAINT, line 20,** replace “AASHTO M 253” with “AASHTO M 300”.

**Page 10-156, Subarticle 1080-9(A) Composition, line 40,** replace “Tables 1080-7 through 1080-14” with “Tables 1080-1 through 1080-3”.

**Page 10-157, Subarticle 1080-9(B) Properties, line 5,** replace “Tables 1080-7 through 1080-14” with “Tables 1080-1 through 1080-3”.

**Page 10-157, Subarticle 1080-9(B) Properties, line 35,** replace “Materials and Tests Standards CLS-P-1.0” with “*Structural Steel Shop Coatings Program*”.

**Page 10-159, Subarticle 1080-9(E) Color Variation, Table 1080-1,** replace “ASTM D1159” with “ASTM D1199”.

**Page 10-159, Subarticle 1080-9(E) Color Variation, Table 1080-1,** replace “NCDOT M&T P-10” with “ASTM D6280”.

**Page 10-161, Subarticle 1080-9(E) Color Variation, Table 1080-3,** replace “ASTM D13278” and “ASTM D3278”.

**Page 10-161, Subarticle 1080-9(E) Color Variation, Table 1080-3,** replace “NCDOT M&T P-10” and “Structural Steel Shop Coatings Program”.

**Page 10-161, Subarticle 1080-9(E) Color Variation, Table 1080-3,** add Test Method “ASTM D4400” for the Leneta Sag Test property in Table 1080-3.

**Page 10-161, Subarticle 1080-9(E) Color Variation, Table 1080-3,** add Test Method “ASTM D523” for the Gloss, Specular property in Table 1080-3.

**Page 10-161, Subarticle 1080-9(E) Color Variation, Table 1080-3,** replace Test Method “ASTM” with “ASTM E70” for the pH property in Table 1080-3.

**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”.

**Page 10-166, Subarticle 1081-1(E) Prequalification, line 24,** replace “Value Management Unit” with “Product Evaluation Program”.

**Page 10-168, Subarticle 1081-3(A) Physical Requirements, after line 25,** replace “Subarticle 1081-4(B)” with “Subarticle 1081-3(B)” in Table 1081-2.

**Page 10-168, Subarticle 1087-2(A) Paint Composition, lines 19-20**, replace “Federal Specification TTP 1952F” with “Federal Specification TT-P-1952”.

**Page 10-200, Subarticle 1090-1(C) Anchor Bolts, line 38**, replace ASTM number “A325” with “F3125”.

**Page 10-202, Subarticle 1091-3(F) Solid Wall HDPE Conduit, line 5**, replace “, Table 1091-1, 1091-2 and 1091-3” with “and Table 1091-1”.

**Page 10-208, Subarticle 1094-1(A) Breakaway or Simple Steel Beam Sign Supports, line 19**, replace ASTM number “A325” with “F3125”.

**Page 10-209, Subarticle 1094-1(D) Steel Square Tube Posts, line 10**, replace ASTM number “A123” with “A653”.

**Page 10-209, Subarticle 1094-1(E) Wood Supports, line 17**, replace “Article 1082-2 and 1082-3” with “Section 1082”.

**Page 10-212, Subarticle 1098-1(H) Electrical Service, line 21**, replace “NEMA Type 3R” with “NEMA 3R”.

**Page 10-212, Subarticle 1098-1(H) Electrical Service, line 36**, replace “UL Standard 231” with “UL Standard UL-231”.

**Page 10-212, Subarticle 1098-1(H) Electrical Service, line 37**, replace “UL Standard 67” with “UL Standard UL-67”.

**Page 10-224, Subarticle 1098-14(H)(1) Type I – Pedestrian Pushbutton Post, line 3**, replace ASTM number “325” with “F3125”.

**Page 10-224, Article 1098-16 CABINET BASE ADAPTER/EXTENDER, line 33**, replace Section number “6.7” with “6.8”.

#### **Division 14**

**Page 14-11, Subarticle 1401-2(B) Lowering Device, line 36**, replace Military Specification “MIL-W-83420E” with “MIL-DTL-83420”.

**Page 14-22, Article 1412-2 MATERIALS, line 29**, replace UL Standard “1572” with “1598”.

#### **Division 15**

**Page 15-6, Subarticle 1510-3(B) Testing and Sterilization, line 40**, replace Section number “4.4.3” with “4.4”.

**Page 15-14, Article 1525-2 MATERIALS, line 9**, replace “AASHTO M 198” with “ASTM C990”.

**Page 15-14, Article 1525-2 MATERIALS, lines 17-18**, delete “in the Grout Production and Delivery provision”.

**Page 15-19, Article 1550-2 MATERIALS, line 16,** replace “*AASHTO LRFD Bridge Design Specifications*” with “*AASHTO LRFD Bridge Construction Specifications*”.

**Division 16**

**Page 16-9, Article 1630-3 MEASUREMENT AND PAYMENT, line 7,** replace "Section 225" with "Article 225-7".

**Page 16-9, Article 1630-3 MEASUREMENT AND PAYMENT, line 8,** replace "Section 230" with "Article 230-5".

**Page 16-16, Article 1637-5 MEASUREMENT AND PAYMENT, line 17,** replace "Section 310" with "Article 310-6".

**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”.

**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*".



**STANDARD SPECIAL PROVISION****PLANT AND PEST QUARANTINES****(Imported Fire Ant, Gypsy Moth, Witchweed, Emerald Ash Borer, Guava Root Knot Nematode, And Other Noxious Weeds)**

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

Z-04a

**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 <https://www.ncagr.gov/plantindustry/Plant/quaran/table2.htm> 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.

**STANDARD SPECIAL PROVISION****TITLE VI AND NONDISCRIMINATION:**

(6-28-77)(Rev 6/19/2018)

Z-6

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, 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 U.S.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.

<b>TABLE 103-1 COMPLAINT BASIS</b>			
<b>Protected Categories</b>	<b>Definition</b>	<b>Examples</b>	<b>Applicable Nondiscrimination Authorities</b>
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 ( <i>Limited English Proficiency</i> )	Place of birth. Citizenship is not a factor. ( <i>Discrimination based on language or a person's accent is also covered</i> )	Mexican, Cuban, Japanese, Vietnamese, Chinese	
Sex	Gender. The sex of an individual. <i>Note: Sex under this program does not include sexual orientation.</i>	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

Religion (in the context of employment) <i>(Religion/ Creed in all aspects of any aviation or transit-related 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. <b>Note:</b> 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);
  - (l) 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, Non-discrimination 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):

1. 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.)

**STANDARD SPECIAL PROVISION****MINORITY AND FEMALE EMPLOYMENT REQUIREMENTS**

Z-7

NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (*EXECUTIVE NUMBER 11246*)

1. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, see as shown on the attached sheet entitled "Employment Goals for Minority and Female participation".

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in *41 CFR Part 60-4* shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in *41 CFR 60-4.3(a)*, and its effort to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the executive Order and the regulations in *41 CFR Part 60-4*. Compliance with the goals will be measured against the total work hours performed.

2. As used in this Notice and in the contract resulting from this solicitation, the "covered area" is the county or counties shown on the cover sheet of the proposal form and contract.

**EMPLOYMENT GOALS FOR MINORITY  
AND FEMALE PARTICIPATION**

Economic Areas

**Area 023 29.7%**

Bertie County  
Camden County  
Chowan County  
Gates County  
Hertford County  
Pasquotank County  
Perquimans County

**Area 024 31.7%**

Beaufort County  
Carteret County  
Craven County  
Dare County  
Edgecombe County  
Green County  
Halifax County  
Hyde County  
Jones County  
Lenoir County  
Martin County  
Nash County  
Northampton County  
Pamlico County  
Pitt County  
Tyrrell County  
Washington County  
Wayne County  
Wilson County

**Area 025 23.5%**

Columbus County  
Duplin County  
Onslow County  
Pender County

**Area 026 33.5%**

Bladen County  
Hoke County  
Richmond County  
Robeson County  
Sampson County  
Scotland County

**Area 027 24.7%**

Chatham County  
Franklin County  
Granville County  
Harnett County  
Johnston County  
Lee County  
Person County  
Vance County  
Warren County

**Area 028 15.5%**

Alleghany County  
Ashe County  
Caswell County  
Davie County  
Montgomery County  
Moore County  
Rockingham County  
Surry County  
Watauga County  
Wilkes County

**Area 029 15.7%**

Alexander County  
Anson County  
Burke County  
Cabarrus County  
Caldwell County  
Catawba County  
Cleveland County  
Iredell County  
Lincoln County  
Polk County  
Rowan County  
Rutherford County  
Stanly County

**Area 0480 8.5%**

Buncombe County  
Madison County

**Area 030 6.3%**

Avery County  
Cherokee County  
Clay County  
Graham County  
Haywood County  
Henderson County  
Jackson County  
McDowell County  
Macon County  
Mitchell County  
Swain County  
Transylvania County  
Yancey County

**SMSA Areas**

**Area 5720 26.6%**  
Currituck County

**Area 9200 20.7%**  
Brunswick County  
New Hanover County

**Area 2560 24.2%**  
Cumberland County

**Area 6640 22.8%**  
Durham County  
Orange County  
Wake County

**Area 1300 16.2%**  
Alamance County

**Area 3120 16.4%**  
Davidson County  
Forsyth County  
Guilford County  
Randolph County  
Stokes County  
Yadkin County

**Area 1520 18.3%**  
Gaston County  
Mecklenburg County  
Union County

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**Goals for Female**

**Participation in Each Trade**

(Statewide) 6.9%

## REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Non-segregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

### ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

### I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work

performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

### II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

**1. Equal Employment Opportunity:** Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (*see* 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

**3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

**5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

#### 6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

**7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide

sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

**8. Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

**9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

#### 10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

**11. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

a. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

### III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

### IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

#### 1. Minimum wages (29 CFR 5.5)

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and



(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

## 2. Withholding (29 CFR 5.5)

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics,

including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

## 3. Payrolls and basic records (29 CFR 5.5)

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or

subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

#### 4. Apprentices and trainees (29 CFR 5.5)

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State

Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the

corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

**6. Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

**7. Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

**9. Disputes concerning labor standards.** As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor

set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

#### **10. Certification of eligibility (29 CFR 5.5)**

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

#### **V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

**1. Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

**2. Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph 1 of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph 1 of this section, in the sum currently provided in 29 CFR 5.5(b)(2)\* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1 of this section. 29 CFR 5.5.

\* \$27 as of January 23, 2019 (See 84 FR 213-01, 218) as may be adjusted annually by the Department of Labor; pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990).

**3. Withholding for unpaid wages and liquidated damages.**

The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 of this section. 29 CFR 5.5.

**4. Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs 1 through 4 of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1 through 4 of this section. 29 CFR 5.5.

**VI. SUBLETTING OR ASSIGNING THE CONTRACT**

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or

equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on longstanding interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

**VII. SAFETY: ACCIDENT PREVENTION**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance

with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

### **VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

### **IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)**

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.326.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders

or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.326.

### **X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

#### **1. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant

who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction 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 to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

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## **2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;

(2) 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, 2 CFR 180.800;

(3) 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 (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

## **3. Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is

submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contractor). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers to any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. 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 clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction 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 to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

\*\*\*\*\*

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(a) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(b) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(c) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

\*\*\*\*\*

**XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000. 49 CFR Part 20, App. A.

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

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

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

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

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier

subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

#### **XII. USE OF UNITED STATES-FLAG VESSELS:**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.
2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.



**ATTACHMENT A - EMPLOYMENT AND MATERIALS  
PREFERENCE FOR APPALACHIAN DEVELOPMENT  
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS  
ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

**STANDARD SPECIAL PROVISION****ON-THE-JOB TRAINING**

(10-16-07) (Rev. 4-21-15)

Z-10

**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 Operators	Office Engineers
Truck Drivers	Estimators
Carpenters	Iron / Reinforcing Steel Workers
Concrete Finishers	Mechanics
Pipe Layers	Welders

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.

**STANDARD SPECIAL PROVISION**  
**MINIMUM WAGES**  
**GENERAL DECISION NC20230088 01/06/2023 NC88**

Z-088

Date: January 6, 2023

General Decision Number: NC20230088 01/06/2023 NC88

Superseded General Decision Numbers: NC20220088

State: North Carolina

Construction Type: HIGHWAY

**COUNTIES:**

Alamance	Forsyth	Randolph
Anson	Gaston	Rockingham
Cabarrus	Guilford	Stokes
Chatham	Mecklenburg	Union
Davie	Orange	Yadkin
Durham	Person	

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<p>Executive Order 14026 generally applies to the contract.</p> <p>The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.</p>
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<p>Executive Order 13658 generally applies to the contract.</p> <p>The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.</p>

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number  
0

Publication Date  
01/06/2023

SUNC2014-003 11/14/2014

	Rates	Fringes
BLASTER	18.64	
CARPENTER	13.68 **	.05
CEMENT MASON/CONCRETE FINISHER	13.93 **	
ELECTRICIAN		
Electrician	18.79	2.72
Telecommunications Technician	15.19 **	1.25
IRONWORKER	13.30 **	
LABORER		
Asphalt Raker and Spreader	12.78 **	
Asphalt Screed/Jackman	14.50 **	
Carpenter Tender	12.51 **	.27
Cement Mason/Concrete Finisher Tender	11.04 **	
Common or General	10.40 **	.01
Guardrail/Fence Installer	13.22 **	
Pipelayer	12.43 **	
Traffic Signal/Lighting Installer	15.65 **	.24
PAINTER		
Bridge	23.77	
POWER EQUIPMENT OPERATORS		
Asphalt Broom Tractor	10.00 **	
Bulldozer Fine	16.13 **	
Bulldozer Rough	14.36 **	
Concrete Grinder/Groover	17.92	
Crane Boom Trucks	18.19	
Crane Other	19.83	
Crane Rough/All-Terrain	19.10	
Drill Operator Rock	14.28 **	
Drill Operator Structure	20.89	
Excavator Fine	16.95	
Excavator Rough	13.63 **	
Grader/Blade Fine	19.84	
Grader/Blade Rough	15.47 **	
Loader 2 Cubic Yards or Less	13.31 **	
Loader Greater Than 2 Cubic Yards	16.19 **	
Material Transfer Vehicle (Shuttle Buggy)	15.44 **	
Mechanic	17.51	
Milling Machine	15.22 **	
Off-Road Hauler/Water Tanker	11.83 **	
Oiler/Greaser	14.16 **	
Pavement Marking Equipment	12.05 **	
Paver Asphalt	15.97 **	
Paver Concrete	18.20	
Roller Asphalt Breakdown	12.79 **	
Roller Asphalt Finish	13.76 **	
Roller Other	12.08 **	
Scraper Finish	12.65 **	

	Rates	Fringes
Scraper Rough	11.50 **	
Slip Form Machine	19.60	
Tack Truck/Distributor Operator	14.82 **	
TRUCK DRIVER		
GVWR of 26,000 Lbs or Less	11.45 **	
GVWR of 26,001 Lbs or Greater	13.57 **	.03

Welders – Receive rate prescribed for craft performing operation to which welding is incidental.

\*\* Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$16.20) or 13658 (\$12.15). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <http://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the David-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U. S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, D.C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor



200 Constitution Avenue, N.W.  
Washington, D.C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

- 3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, D.C. 20210

- 4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

**PROJECT SPECIAL PROVISIONS**

**GEOTECHNICAL**

STANDARD SHORING (10/19/2021)

GT-1.1 - GT-1.4

TEMPORARY SOIL NAIL WALLS (10/19/2021)

GT-2.1 - GT-2.9

AGGREGATE SUBGRADE (SPECIAL)

GT-3.1 - GT-3.1

DocuSigned by:  
*Geotechnical Engineering Unit*  
E06538624A11498... 03/10/2023

**STANDARD SHORING:****(10-19-21)****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*.

<b>Item</b>	<b>Section</b>
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](http://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](http://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.



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**TEMPORARY SOIL NAIL WALLS:****(10-19-21)****Description**

Construct temporary soil nail walls consisting of soil nails spaced at a regular pattern and connected to a reinforced shotcrete face. A soil nail consists of a solid or hollow steel bar grouted in a drilled hole inclined at an angle below horizontal. At the Contractor's option, use temporary soil nail walls instead of temporary shoring for full cut sections. Design and construct temporary soil nail walls based on actual elevations and wall dimensions in accordance with the contract and accepted submittals. Use a prequalified Anchored Wall Contractor to construct temporary soil nail walls. Define "soil nail wall" as a temporary soil nail wall and "Soil Nail Wall Contractor" as the Anchored Wall Contractor installing soil nails and applying shotcrete. Define "nail" as a soil nail.

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

**Materials**

Refer to Division 10 of the *Standard Specifications*.

<b>Item</b>	<b>Section</b>
Geocomposites	1056
Portland Cement	1024-1
Reinforcing Steel	1070
Shotcrete	1002
Select Material, Class IV	1016
Steel Plates	1072-2
Water	1024-4

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 lb of Portland cement. Provide grout with a compressive strength at 3 and 28 days of at least 1,500 psi and 4,000 psi, respectively.

Use Class IV select material for temporary guardrail. Provide soil nails consisting of grouted steel bars and nail head assemblies. Use deformed solid steel bars that meet AASHTO M 275 or M 31, Grade 60, 75 or 80. Splice solid bars in accordance with Article 1070-9 of the *Standard Specifications*. Use hollow steel bars manufactured by DYWIDAG-Systems International USA Inc., Nucor Skyline, Williams Form Engineering Corp. or an approved equal.

Use centralizers that meet Article 34.3.4 of the *AASHTO LRFD Bridge Construction Specifications*. Provide nail head assemblies consisting of nuts, washers and bearing plates. Use steel plates for bearing plates and steel washers and hex nuts recommended by the Soil Nail Manufacturer.

Provide Type 6 material certifications for soil nail materials in accordance with Article 106-3 of the *Standard Specifications*. Store steel materials on blocking at least 12" above the ground and protect it at all times from damage; and when placing in the work make sure it is free from dirt, dust, loose mill scale, loose rust, paint, oil or other foreign materials. Load, transport, unload and store soil nail wall materials so materials are kept clean and free of damage. Bent, damaged or defective materials will be rejected.

**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 soil nail walls except for barrier above walls. Concrete barrier with the minimum required clear distance is required above soil nail walls.

**(B) Temporary Guardrail**

Define “clear distance” behind temporary guardrail as the horizontal distance between guardrail posts and soil nail walls. At the Contractor’s option or if clear distance for soil nail walls is less than 4 ft, use temporary guardrail with 8 ft posts and a clear distance of at least 2.5 ft. Place ABC in clear distance and around guardrail posts instead of pavement.

**(C) Soil Nail Wall Designs**

Before beginning soil nail wall design, survey existing ground elevations in the vicinity of wall locations to determine actual design heights (H). Use a prequalified Anchored Wall Design Consultant to design soil nail walls. Provide designs sealed by a Design Engineer approved as a Geotechnical Engineer (key person) for the Anchored Wall Design Consultant.

Design soil nail walls in accordance with the plans and the *AASHTO LRFD Bridge Design Specifications* unless otherwise required. Design soil nails that meet the following unless otherwise approved:

- (1) Horizontal and vertical spacing of at least 3 ft,
- (2) Inclination of at least 12° below horizontal and
- (3) Diameter of 4" to 10".

Do not extend nails beyond right-of-way or easement limits. If existing or future obstructions such as foundations, pavements, pipes, inlets or utilities will interfere with nails, maintain a clearance of at least 6" between obstructions and nails.

Design soil nail walls for a traffic surcharge of 250 psf if traffic will be above and within H of walls. This traffic surcharge does not apply to construction traffic. Design soil nail walls for any construction surcharge if construction traffic will be above and within H of walls. For temporary guardrail with 8 ft posts above soil nail walls, analyze shotcrete and top row of nails for a nominal horizontal load of 300 lb/ft of wall with a load factor of 1.0.

Place geocomposite sheet drains with a horizontal spacing of no more than 10 ft and center drains between adjacent nails. Attach sheet drains to excavation faces. Design shotcrete in accordance with Article 11.12.6.2 of the *AASHTO LRFD Bridge Design Specifications*.

Submit PDF files of working drawings and design calculations for soil nail wall designs in accordance with Article 105-2 of the *Standard Specifications*. Submit working drawings showing plan views, wall profiles, typical sections and details of soil nail wall



design and construction sequence. Include details in working drawings of soil nail locations, unit grout/ground bond strengths, shotcrete reinforcement and if necessary, obstructions extending through walls or interfering with nails. Include details in construction sequence of excavation, grouting, installing reinforcement, nail testing and shotcreting with mix designs and shotcrete nozzleman certifications. Do not begin soil nail wall construction until a design submittal is accepted.

Submit design calculations for each wall section with different surcharge loads, geometry or material parameters. Include analysis of temporary conditions during construction in design calculations. At least one analysis is required for each wall section with different nail lengths. Analyze internal and compound stability with a computer software program that uses limit equilibrium methods and submit all PDF output files from the program with the design calculations. See Article C11.12.2 of the AASHTO LRFD specifications for determining the maximum soil nail force,  $T_{\max sn}$ . Once  $T_{\max sn}$  and pullout length behind slip surface,  $L_P$ , are determined from limit equilibrium methods at the target soil failure resistance factor (1 over factor of safety output from computer software), use these values for soil nail (pullout and tensile resistance) and wall facing (flexure, punching shear and headed-stud tensile resistance) design in accordance with Articles 11.12.5.2, 11.12.6.1 and 11.12.6.2 of the AASHTO LRFD specifications.

- (1) When designing soil nail walls with computer software Snail manufactured by the California Department of Transportation (CALTRANS), use Snail version 2.2.0 or later, to calculate factors of safety and  $T_{\max sn}$  and  $L_P$  values in accordance with the following: Allowable Stress Design for Analysis Method with no load factors applied except those applied to factored surcharge loads from structures or traffic,
- (2) Perform Below Toe Search option selected when any soil layer has a friction angle less than  $30^\circ$  and
- (3) Default value of 0.33 for Interface Friction Reduction Factor.

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

**(D) Preconstruction Meeting**

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

**Construction Methods**

Control drainage during construction in the vicinity of soil nail walls. Direct run off away from soil nail walls and areas above and behind walls.

Install foundations located behind soil nail walls before beginning wall construction. Do not excavate behind soil nail walls. If overexcavation occurs, repair walls with an approved method and a revised soil nail wall design may be required.

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

**(A) Excavation**

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

- (1) Heights not to exceed vertical nail spacing,
- (2) Bottom of lifts no more than 3 ft below nail locations for current lift and
- (3) Horizontal and vertical alignment within 6" of location shown in the accepted submittals.

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

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

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

Do not excavate the next lift until nail installations and testing and shotcrete application for the current lift are accepted and grout and shotcrete for the current lift have cured at least 3 days and 1 day, respectively.

**(B) Soil Nails**

Drill and grout nails the same day and do not leave drill holes open overnight. Control drilling and grouting to prevent excessive ground movements, damaging structures and pavements or fracturing rock and soil formations. If ground heave or subsidence occurs, suspend soil nail wall construction and take corrective action to minimize movement. If property damage occurs, make repairs with an approved method and a revised soil nail wall design may be required.

The drilling, steel bar and grouting requirements below are for solid bar nails and may not apply to hollow bar nails. Hollow bar nails are typically installed by simultaneously drilling and grouting as a sacrificial drill bit is advanced and grout is pumped through the bar. For hollow bar nails, submit drilling and grouting procedures for approval before

installing soil nails.

(1) Drilling

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

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

(2) Steel Bars

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

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

(3) Grouting

Mix and place grout in accordance with Subarticles 1003-5, 1003-6 and 1003-7 of the *Standard Specifications*. Remove oil, rust inhibitors, residual drilling fluids and similar foreign materials from holding tanks/hoppers, stirring devices, pumps, lines, tremie pipes and any other equipment in contact with grout before use. Measure grout temperature, density and flow during grouting with at least the same frequency grout cubes are made for compressive strength. Perform density and flow field tests in the presence of the Engineer in accordance with American National Standards Institute/American Petroleum Institute Recommended Practice 13B-1 (Section 4, Mud Balance) and ASTM C939 (Flow Cone), respectively.

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

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

(4) Nail Heads

Install nail head assemblies after shotcreting. Before shotcrete reaches initial set, seat bearing plates and tighten nuts so plates contact shotcrete uniformly. If uniform contact is not possible, install nail head assemblies on mortar pads so nail

heads are evenly loaded.

**(C) Sheet Drains**

Install geocomposite sheet drains as shown in the accepted submittals. Before installing shotcrete reinforcement, place sheet drains with the geotextile side against excavation faces. For highly irregular faces and at the discretion of the Engineer, sheet drains may be placed after shotcreting over weep holes through the shotcrete. Hold sheet drains in place with anchor pins so drains are in continuous contact with surfaces to which they are attached and allow for full flow the entire height of soil nail walls. Discontinuous sheet drains are not allowed. If splices are needed, overlap sheet drains at least 12" so flow is not impeded. Cut off excess sheet drain length and expose drain ends below shotcrete when soil nail wall construction is complete.

**(D) Shotcrete**

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

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

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

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

**(E) Construction Records**

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

- (1) Names of Soil Nail Wall Contractor, Superintendent, Nozzleman, Drill Rig Operator, Project Manager and Design Engineer;
- (2) Wall description, county, Department's contract, TIP and WBS element number;
- (3) Wall station and number and lift location, dimensions, elevations and description;
- (4) Nail locations, dimensions and inclinations, bar types, sizes and grades and temporary casing information;

- (5) Date and time drilling begins and ends, steel bars are inserted into drill holes, grout and shotcrete are mixed and arrives on-site and grout placement and shotcrete application begins and ends;
- (6) Grout volume, temperature, flow and density records;
- (7) Ground and surface water conditions and elevations if applicable;
- (8) Weather conditions including air temperature at time of grout placement and shotcrete application; and
- (9) All other pertinent details related to soil nail wall construction.

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

### **Nail Testing**

“Proof tests” are performed on nails incorporated into walls, i.e., production nails. Define “test nail” as a nail tested with a proof test. Proof tests are typically required for at least one nail per nail row per soil nail wall or at least 5% of production nails, whichever is greater. More or less test nails may be required depending on subsurface conditions encountered. The Engineer will determine the number and locations of proof tests required. Do not test nails until grout and shotcrete attain the required 3-day compressive strength.

#### **(A) Test Equipment**

Use the following equipment to test nails:

- (1) Two dial gauges with rigid supports,
- (2) Hydraulic jack and pressure gauge and
- (3) Jacking block or reaction frame.

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

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

#### **(B) Test Nails**

Test nails include both unbonded and bond lengths. Grout only bond lengths before nail testing. Provide unbonded and bond lengths of at least 3 ft and 10 ft, respectively.

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

#### **(C) Proof Tests**

Test proof test nails in accordance with the accepted submittals and Article 34.5.5.3, respectively of the *AASHTO LRFD Bridge Construction Specifications*.

**(D) Test Nail Acceptance**

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

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

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

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

**Measurement and Payment**

Temporary soil nail walls will be measured and paid in square feet. Temporary soil nail walls will be paid for at the contract unit price for *Temporary Shoring*. Temporary soil nail walls will be measured as the square feet of exposed wall face area. No measurement will be made for any embedment or pavement thickness above soil nail walls.

The contract unit price for *Temporary Shoring* will be full compensation for providing soil nail wall designs, submittals, labor, tools, equipment and soil nail wall materials, excavating, hauling and removing excavated materials, installing and testing soil nails, grouting, shotcreting and supplying sheet drains and any incidentals necessary to construct soil nail walls. No additional payment will be made and no extension of completion date or time will be allowed for repairing property damage, overexcavations or unstable excavations, unacceptable test nails or thicker shotcrete.

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 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 *Standard Specifications*. No additional payment will be made for anchoring PCB for soil nail walls. Costs for anchoring PCB will be incidental to soil nail walls.

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



DocuSigned by:

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02/15/2023

**AGGREGATE SUBGRADE**

**(SPECIAL)**

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.



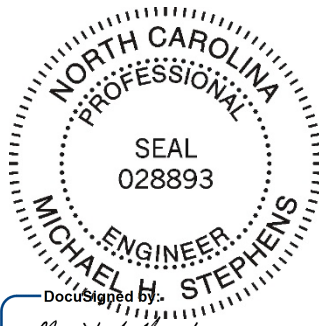
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03/10/2023



**PHASE 1 - APPROACH FILL WAITING PERIOD**

**(SPECIAL)**

For Stage 1 Bridge Construction, observe an approximate 2 month waiting period after constructing the embankment, end bent, and bridge approach fill before beginning approach slab construction at End Bent Nos. 1 and 2. For bridge waiting periods, see Roadway Plans and Section 235 of the Standard Specifications. Before beginning the waiting period, install 2 settlement hubs per end bent (total of 4), survey the hubs initially and every 3 to 4 days thereafter for relative movement and submit the data to the engineer weekly. The Engineer will determine when the waiting period ends and bridge approach slab construction can begin. No payment will be made for the settlement hubs as they are incidental to other items in the contract.



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04/11/2023

**PROJECT SPECIAL PROVISIONS  
GEOENVIRONMENTAL**

**CONTAMINATED SOIL (6/20/2022)**

The Contractor's attention is directed to the fact that soil contaminated with petroleum hydrocarbon compounds exist within the project area. The known areas of contamination are indicated on corresponding plans sheets. Information relating to these contaminated areas, sample locations, and investigation reports will be available at the following web address by navigating to the correct letting year and month then selecting, "Plans and Proposals", "B-5808", "Individual Sheets/520 GeoEnvironmental":

<http://dotw-xfer01.dot.state.nc.us/dsplan/>

Petroleum contaminated soil may be encountered during any earthwork activities on the project. The Contractor shall only excavate those soils that the Engineer designates necessary to complete a particular task. The Engineer shall determine if soil is contaminated based on areas shown on the plans, petroleum odors, and unusual soil staining. Contaminated soil not required to be excavated is to remain in place and undisturbed. Undisturbed soil shall remain in place, whether contaminated or not. The Contractor shall transport all contaminated soil excavated from the project to a facility licensed to accept contaminated soil.

In the event that a stockpile is needed, the stockpile shall be created within the property boundaries of the source material and in accordance with the Diagram for Temporary Containment and Treatment of Petroleum-Contaminated Soil per North Carolina Department of Environmental Quality's (NCDEQ) Division of Waste Management UST Section GUIDELINES FOR EX SITU PETROLEUM CONTAMINATED SOIL REMEDIATION. If the volume of contaminated material exceeds available space on site, the Contractor shall obtain a permit from the NCDEQ UST Section's Regional Office for off-site temporary storage. The Contractor shall provide copies of disposal manifests completed per the disposal facilities requirements and weigh tickets to the Engineer.

**Measurement and Payment:**

The quantity of contaminated soil hauled and disposed of shall be the actual number of tons of material, which has been acceptably transported and weighed with certified scales as documented by disposal manifests and weigh tickets. The quantity of contaminated soil, measured as provided above, shall be paid for at the contract unit price per ton for "Hauling and Disposal of Petroleum Contaminated Soil".

The above price and payment shall be full compensation for all work covered by this section, including, but not limited to stockpiling, loading, transportation, weighing, laboratory testing, disposal, equipment, decontamination of equipment, labor, and personal protective equipment.

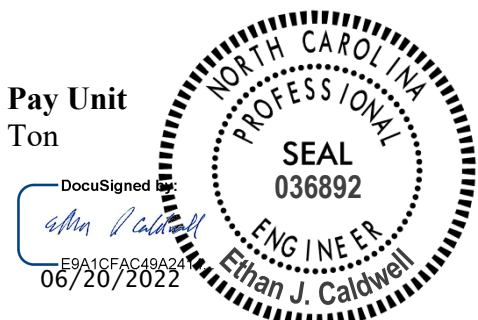
Payment shall be made under:

**Pay Item**

Hauling and Disposal of Petroleum Contaminated Soil

**Pay Unit**

Ton



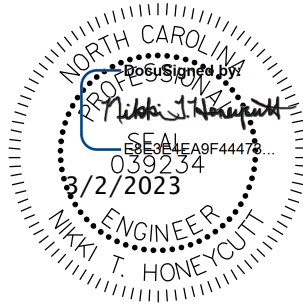
# TC-1

B-5808

Cabarrus County

## WORK ZONE TRAFFIC CONTROL Project Special Provisions Table of Contents

Special Provision	Page
ADA Compliant Pedestrian Traffic Control Devices	TC-2



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Charlotte, NC 28202  
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# TC-2

B-5808

Cabarrus County

## **ADA COMPLIANT PEDESTRIAN TRAFFIC CONTROL DEVICES:**

(10/31/2017) (Rev. 6/3/2022)

### **Description**

Furnish, install, and maintain all ADA compliant pedestrian traffic control devices for existing pedestrian facilities that are disrupted, closed, or relocated by planned work activities.

The ADA compliant pedestrian traffic control devices used to either close, redirect, divert or detour pedestrian traffic are Pedestrian Channelizing Devices.

### **Construction Methods**

The ADA compliant pedestrian traffic control devices involved in the closing or redirecting of pedestrians as designated on the Transportation Management Plan (TMP) shall be manufactured and assembled in accordance with the requirements of the Americans with Disabilities Act (ADA) and be on the NCDOT approved products list.

Any Pedestrian Channelizing Devices used to close or block a pedestrian facility shall have a "SIDEWALK CLOSED" sign affixed to it, if designated on the TMP.

### **Measurement and Payment**

*Pedestrian Channelizing Devices* will be measured and paid as the maximum number of linear feet of *Pedestrian Channelizing Devices* furnished, acceptably placed, and in use at any one time during the life of the project.

No direct payment will be made for any sign affixed to a pedestrian channelizing device. Signs mounted to pedestrian channelizing devices will be considered incidental to the device.

Relocation, replacement, repair, maintenance, or disposal of *Pedestrian Channelizing Devices* will be incidental to the pay item.

Payment will be made under:

#### **Pay Item**

Pedestrian Channelizing Devices

#### **Pay Unit**

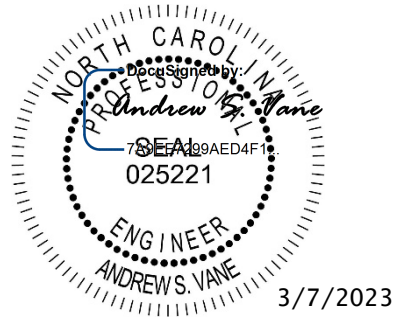
Linear Foot

PROJECT SPECIAL PROVISIONS  
Utility Construction

Andrew Vane, PE  
STV Engineers, Inc.  
900 West Trade Street, Suite 715  
Charlotte, NC 28202

**B-5808: Bridges #057 & #059 Over Irish Buffalo Creek on US 29/ US 601**

Signature and Seal of Professional Engineer that Prepared This Report



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

**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 utility owners are the City of Concord and Water and Sewer Authority of Cabarrus County (WSACC). The contact people for the City of Concord and WSACC are Kevin Plemmons and Mark Lomax, who can be reached by phone at (704) 920-5344 and (704) 786-1783 (ext. 231), respectively.

Utility owner standard specifications and details govern over the 2018 NCDOT Standard Specifications when applicable.

**1.1 PROJECT SPECIAL PROVISIONS**

Unless otherwise indicated in these special provisions, all materials and requirements for proposed water and sewer lines shall at a minimum meet the standards and requirements outlined in the 2018 NCDOT Standard Specifications. For water lines, sewer lines and related work, the work shall be in conformance with the City of Concord and WSACC water and sewer standard drawings latest revision. Specific City of Concord and WSACC details are referenced on Sheets UC-3A through UC-3D. All work and items not specifically listed in the bid items shall be considered incidental to the work.

**16" Insert Valve - SP-001**

**Description**

This item includes furnishing all materials, equipment, labor and incidentals necessary to install insert type valve in existing water line.

**Materials and Methods**

Insert valve shall be insertable gate valve shall be designed to be installed onto a working, pressurized water line. Insert valve shall be manufactured with the following materials:

- A. Ductile Iron Operating Nut per AWWA C509-09.
- B. 316 Stainless steel bonnet nuts and bolts.
- C. Epoxy coated carbon steel valve bonnet.
- D. BUNA-N bonnet o-ring.

Project: B-5808

**UC-3**

County: Cabarrus

- E. 304 SS Valve body branch and stem.
- F. EPDM gate seals.
- G. BUNA-M/EPDM valve body gasket.
- H. Cast Nylon, Type 6 gate.

Insert valve shall be factory tested to 1.5 times system working pressure at a minimum with maximum test pressure 375 psi.

Insert valve shall allow for bi-directional flow and weigh approximately 865lbs.

### **Measurement and Payment**

The quantity of Insert Valves to be paid for will be the actual number of insert valves installed bysize. The quantity of Insert Valves, measured as provided above, such payment will be fullcompensation for all Work covered by this Project Special Provision.

#### **Pay Item**

#### **Unit**

16" Insert Valve

EA

### **84" Tunnel Liner Plate - SP-002**

#### **Description**

This item includes furnishing all materials, equipment, labor and incidentals necessary to install 84" Tunnel Liner Plate around existing sanitary sewer.

#### **Materials and Methods**

84" Tunnel Liner Plates shall be dip-galvanized and asphalt coated 2-Flange, 12-gauge steel plate, per ASTM A1011 & A1018. Steel plates shall be zinc coated in accordance with ASTM Specification A123, except that the zinc shall be applied at the rate of two ounces per square foot total for both sides or may be manufactured from galvanized steel (AASHTO M218).

Bolts and nuts shall be 5/8" in diameter and length as recommended by the manufacturer and shall be galvanized in accordance with ASTM B695, Class 50.

Plates shall be accurately curved to fit the tunnel cross-section and shall be of uniform fabrication to allow plates of similar curvature to be interchanged. All plates shall be punched for bolting on both the longitudinal and circumferential seams and shall be fabricated as to permit complete erection from the inside of the tunnel. Circumferential bolt hole spacing will be a multiple of the plate length to allow staggering of the longitudinal seam. Circumferential bolt spacing shall be 6 ¼" unless otherwise specified.

Project: B-5808

## UC-4

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Grout holes shall be 2” in diameter and shall be provided as on the shop drawings to permit grouting during assembly of the Liner Plates.

Liner Plates shall be designed per AASHTO Standard Design Specification for Tunnel Liner Plates Section 15 and shall be assembled in accordance with the manufacturer’s recommendations.

New liner plates shall be either bolted or welded to existing liner plates of existing tunnel.

Annular space between existing liner plates and carrier pipe shall be grouted in accordance with NCDOT specifications as part of this work.

### **Measurement and Payment**

The quantity of 84” tunnel liner plates to be paid for shall be the actual linear footage of liner plates installed by size and shall include casing spacers (3 per pipe joint), grouting the annular space between the tunnel plates and carrier pipe for both existing and proposed installation, and shall include casing end seals. Such payment for all work covered by this Project Special Provision shall include full compensation for this work.

### **Pay Item**

84” Tunnel Liner Plate

### **Unit**

LF



PROJECT SPECIAL PROVISIONS

## Utilities by Others

**General:**

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

- A) City of Concord - Power (Transmission)
- B) City of Concord – Power (Distribution)
- C) City of Concord – Communications
- D) AT&T – Communications
- E) Google Fiber - Communications
- F) Segra – Communications
- G) Windstream – Communications
- H) Dominion Energy – Gas (Transmission)

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

The Contractor's attention is directed to Article 105-8 of the 2018 Standard Specifications.

**Utilities Requiring Adjustment:**

Utility relocations are shown on the Utilities by Others Plans.

- A) City of Concord (COC) – Power (Transmission)
  - 1) COC will install new poles on the same alignment to eliminate project conflicts on the east side of US 29/US 601 and will install a new pole alignment on the west side of US 29/US 601. Their relocations will begin in May of 2023 due to seasonal restrictions and will be complete by June 30<sup>th</sup>, 2023.

During bridge construction on the west side of US 29/US 601, COC has agreed to remove their OH transmission line for up to twelve (12) weeks during the following time frames mid-April to late June in spring and late August to early November in fall. They will NOT be able to de-energize and remove these lines outside of the provided durations due to energy demand. All bridge activity requiring the removal of this line can only occur during the noted durations. COC requires two (2) weeks' notice to schedule and one (1) week to de-

PROJECT SPECIAL PROVISIONS

## Utilities by Others

energize and remove the lines. COC requires two (2) weeks' notice to schedule and two (2) weeks to reconnect their lines. No bridge activity can occur during their removal and reconnection timeframes.

- 2) Contact person for City of Concord:  
Brandon Hargett  
[hargettb@concordnc.gov](mailto:hargettb@concordnc.gov)  
704-920-5324
- B) City of Concord – Power (Distribution)
- 1) COC will transfer their distribution power lines to their new pole alignment when they perform the transmission relocation. This relocation will be complete by June 30<sup>th</sup>, 2023.
  - 2) Contact person for City of Concord:  
Brandon Hargett  
[hargettb@concordnc.gov](mailto:hargettb@concordnc.gov)  
704-920-5324
- C) City of Concord – Communications
- 1) COC will transfer their fiber to their new pole alignment along the east side of US 29/US 601 when they perform the transmission relocation. This relocation will be complete by June 30<sup>th</sup>, 2023.
  - 2) Contact person for City of Concord:  
Brandon Hargett  
[hargettb@concordnc.gov](mailto:hargettb@concordnc.gov)  
704-920-5324
- D) AT&T – Communications
- 1) AT&T will relocate their underground facilities throughout the project further west from US 29/US 601 and out of conflict with the project. AT&T and Segra will be in a joint bore from south of Poplar Tent Road to after bore under the creek. AT&T's relocation will be completed by July 1, 2023.
- AT&T will be crossing over the proposed 42-in drainage crossing at the bridge. They require a two (2) weeks' notification prior to exposing their line to have a representative on-site to protect and secure their lines during drainage construction.
- 2) Contact person for AT&T:  
David Poli  
[Dp2170@att.com](mailto:Dp2170@att.com)  
704-526-7054

PROJECT SPECIAL PROVISIONS

## Utilities by Others

## E) Google Fiber – Communications

- 1) Google will install their underground facilities on the north side of Poplar Tent Road, cross under US 29/US 601 at a minimum depth of 15 feet, and tie back to their existing facilities on McGill Avenue outside the project limits. Google also plans to install an underground fiber on the west side of US 29/US 601. They plan to be 3 feet deep at the 42-in drainage crossing, so the contractor will coordinate with them during that drainage installation. This is all new construction, so no completion date has been finalized.

- 2) Contact person for Google:

Michael Baker

[blegault@telics.com](mailto:blegault@telics.com)

828-781-2464

## F) Segra – Communications

- 1) Segra will relocate their underground facilities further west from US 29/US 601 and out of conflict with the project. Segra and AT&T will perform a joint trench from south of Poplar Tent to north of creek crossing. Segra's relocation will be completed by 6/30/2023.

Segra will be crossing over the proposed 42-in drainage crossing at the bridge. They require a two (2) weeks' notification prior to exposing their line to have a representative on-site to protect and secure their lines during drainage construction.

- 2) Contact person for Segra:

Brad Legault

[blegault@telics.com](mailto:blegault@telics.com)

828-781-2464

## G) Windstream – Communications

- 1) Windstream will relocate aerially to COC's new transmission poles and will take six weeks following the relocations of COC's aerial transmission and distribution power and fiber lines.

- 2) Contact person for Windstream:

Wesley Carlisle

[Wesley.N.Carlisle@windstream.com](mailto:Wesley.N.Carlisle@windstream.com)

980-250-2269

PROJECT SPECIAL PROVISIONS

Utilities by Others

H) Dominion Energy – Gas (Transmission)

1) Dominion Energy will install a new gas line to eliminate the conflict with the 42” RCP drainage pipe. This relocation will be an offset at the drainage crossing. Dominion’s relocation will be completed by 4/30/2023.

2) Contact person for Dominion Energy:

Benjamin Gaughan

[Benjamin.J.Gaughan@dominionenergy.com](mailto:Benjamin.J.Gaughan@dominionenergy.com)

330-571-6711

**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:**

**(West)**

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

**Shoulder and Median Areas**

**August 1 - June 1**

20#	Kentucky Bluegrass
75#	Hard Fescue
25#	Rye Grain
500#	Fertilizer
4000#	Limestone

**May 1 - September 1**

20#	Kentucky Bluegrass
75#	Hard Fescue
10#	German or Browntop Millet
500#	Fertilizer
4000#	Limestone

**Areas Beyond the Mowing Pattern, Waste and Borrow Areas:**

**August 1 - June 1**

100#	Tall Fescue
15#	Kentucky Bluegrass
30#	Hard Fescue

**May 1 - September 1**

100#	Tall Fescue
15#	Kentucky Bluegrass
30#	Hard Fescue

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

## Approved Tall Fescue Cultivars

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	

## Approved Kentucky Bluegrass Cultivars:

4-Season	Blue Velvet	Gladstone	Quantum Leap
Alexa II	Blueberry	Granite	Rambo
America	Boomerang	Hampton	Rhapsody
Apollo	Brilliant	Harmonie	Rhythm
Arcadia	Cabernet	Impact	Rita
Aries	Champagne	Jefferson	Royce
Armada	Champlain	Juliet	Rubicon
Arrow	Chicago II	Jump Start	Rugby II
Arrowhead	Corsair	Keeneland	Shiraz
Aura	Courtyard	Langara	Showcase
Avid	Delight	Liberator	Skye
Award	Diva	Madison	Solar Eclipse
Awesome	Dynamo	Mercury	Sonoma
Bandera	Eagleton	Midnight	Sorbonne
Barduke	Emblem	Midnight II	Starburst
Barnique	Empire	Moon Shadow	Sudden Impact
Baroness	Envicta	Moonlight SLT	Total Eclipse
Barrister	Everest	Mystere	Touche
Barvette HGT	Everglade	Nu Destiny	Tsunami
Bedazzled	Excursion	NuChicago	Unique
Belissimo	Freedom II	NuGlade	Valor
Bewitched	Freedom III	Odyssey	Voyager II
Beyond	Front Page	Perfection	Washington
Blacksburg II	Futurity	Pinot	Zinfandel
Blackstone	Gaelic	Princeton 105	
Blue Note	Ginney II	Prosperity	

## Approved Hard Fescue Cultivars:

Aurora II	Eureka II	Oxford	Scaldis II
Aurora Gold	Firefly	Reliant II	Spartan II
Berkshire	Granite	Reliant IV	Stonehenge
Bighorn GT	Heron	Rescue 911	
Chariot	Nordic	Rhino	

On cut and fill slopes 2:1 or steeper add 20# Sericea Lespedeza 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**

**(West)**

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

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

**August 1 - June 1**

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

**May 1 – September 1**

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

**Approved Creeping Red Fescue Cultivars:**

- Aberdeen
- Boreal
- Epic
- Cindy Lou

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

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

**Measurement and Payment**

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



**TEMPORARY SEEDING:**

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

**FERTILIZER TOPDRESSING:**

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

**SUPPLEMENTAL SEEDING:**

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

**MOWING:**

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

**LAWN TYPE APPEARANCE:**

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

**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

#### Pay Unit

Each

**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. 04-27-20)

**Description**

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

**Polyacrylamides (PAMS) and Flocculants**

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

[https://files.nc.gov/ncdeq/Water+Quality/Environmental+Sciences/ATU/PAM8\\_30\\_18.pdf](https://files.nc.gov/ncdeq/Water+Quality/Environmental+Sciences/ATU/PAM8_30_18.pdf)

**Equipment Fluids**

Fuels, lubricants, coolants, and hydraulic fluids, and other petroleum products shall be handled and disposed of in a manner so as not to enter surface or ground waters and in accordance with applicable state and federal regulations. Equipment used on the site must be operated and

maintained properly to prevent discharge of fluids. Equipment, vehicle, and other wash waters shall not be discharged into E&SC basins or other E&SC devices. Alternative controls should be provided such that there is no discharge of soaps, solvents, or detergents.

### **Waste Materials**

Construction materials and land clearing waste shall be disposed of in accordance with North Carolina General Statutes, Chapter 130A, Article 9 - Solid Waste Management, and rules governing the disposal of solid waste (15A NCAC 13B). Areas dedicated for managing construction material and land clearing waste shall be at least 50 feet away from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. Paint and other liquid construction material waste shall not be dumped into storm drains. Paint and other liquid construction waste washouts should be located at least 50 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:**

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

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

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

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

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

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

**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*.

**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	Test Method	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	≥80	%
Porosity (Permanent Net)	ECTC Guidelines	≥85	%
Maximum Permissible Shear Stress (Vegetated)	Performance Bench Test	≥8.0	lb/ft <sup>2</sup>
Maximum Allowable Velocity (Vegetated)	Performance Bench Test	≥16.0	ft/s

\*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:

<b>Pay Item</b>	<b>Pay Unit</b>
Permanent Soil Reinforcement Mat	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 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:

<b>Pay Item</b>	<b>Pay Unit</b>
Polyacrylamide(PAM)	Pound
Coir Fiber Wattle	Linear Foot

**IMPERVIOUS DIKE:**  
(9-9-11)(Rev. 11-15-22)

**Description**

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

**Materials**

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

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

**Construction Methods**

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

**Measurement and Payment**

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

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Impervious Dike	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**

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

Payment will be made under:

**Pay Item****Pay Unit**

\_\_\_" Temporary Pipe

Linear Foot

**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.

**Materials****Item****Section**

Coir Fiber Mat

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

**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**

<b>Item</b>	<b>Section</b>
Temporary Silt Fence	1605

*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 thick 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.)

**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/ConcreteWashoutStructureDetail.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:

<b>Pay Item</b>	<b>Pay Unit</b>
Concrete Washout Structure	Each

### **FABRIC INSERT INLET PROTECTION DEVICE (HIGH FLOW)**

(6-29-17)

#### **Description**

This work shall consist of installing, maintaining, and removing *Fabric Insert Inlet Protection Device*, of the type specified, in inlet structures (catch basins, drop inlets, etc) in areas where asphalt or concrete may prevent the proper installation of a Rock Inlet Sediment Traps Type C, or as directed.

## Materials

The product shall be a fabric inlet protection device composed of a fitted woven polypropylene geotextile double sewn with nylon thread suspended sack. The *Fabric Insert Inlet Protection Device* shall be manufactured to fit the opening of the catch basin or drop inlet or shall have a deflector to direct runoff from the curb opening into the fabric sack. The *Fabric Insert Inlet Protection Device* shall have a rigid frame or support system to support the loaded weight of the product. The product shall have lifting loops for removing the device from the basin and will have dump straps attached at the bottom to facilitate the emptying of the device. The *Fabric Insert Inlet Protection Device* shall have an overflow system to allow stormwater to enter the inlet structure and avoid ponding on the roadway when the device reaches capacity.

The stitching shall meet the following physical properties:

Physical	Test Method	English
Average Wide Width Strength	ASTM D-4884	165 lb/in

The fitted filter assembly shall have the following physical properties:

Physical	Test Method	English
Grab Tensile	ASTM D-4632	255 x 275 lbs
Minimum Puncture Strength	ASTM D-4833	125 lbs
Mullen Burst	ASTM D-3786	420 PSI
Minimum UV Resistance	ASTM D-4355	70 %.
Flow Rate	ASTM D-4491	200 gal/min/ft <sup>2</sup>
Apparent Opening	ASTM D-4751	20 US Sieve
Permittivity	ASTM D-4491	1.5 sec <sup>-1</sup>

## Construction Methods

Strictly comply with manufacturer's installation instructions and recommendations. Maintenance shall include regular daily inspections and after each qualifying rain event. The *Fabric Insert Inlet Protection Device* shall be emptied, cleaned and placed back into the basin when it reaches 50% capacity or as directed.

## Measurement and Payment

This work will be paid for at the contract unit price per *Fabric Insert Inlet Protection Device* of the type specified, complete in place and accepted. Such payment shall be full compensation for furnishing and installing the *Fabric Insert Inlet Protection Device* in accordance with this specification and for all required maintenance.

Maintenance of the device, cleanout and disposal of accumulated sediments shall be paid for by *Fabric Insert Inlet Protection Device Cleanout*.



Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Fabric Insert Inlet Protection Device	Each
Fabric Insert Inlet Protection Device Cleanout	Each

**LITTER REMOVAL (MOWING AREAS ONLY):**  
(07-19-22)

**Description**

This work consists of the pickup, removal, and disposal of litter from roadsides within the construction project prior to mowing operations.

**Construction Methods**

Provide labor, equipment and materials necessary for the pickup and removal of litter from non-construction sources and the disposal of same into state approved landfills. The Contractor shall abide by all ordinances, laws and regulations regarding disposal of litter and recycling of eligible materials. Wastes generated from construction activities shall be managed as provided elsewhere in the contract. Litter items may consist of any item not considered normal to the right-of-way, including but not limited to, varied sizes of bottles, cans, paper, tires, tire pieces, lumber, vehicle parts, building supplies, metals, household furnishings, cardboard, plastics, ladders, brush and other items not considered normal to the right of way. Litter removal shall be performed in designated areas within five days prior to any mowing operations and as directed. Designated areas shall include vegetated medians and shoulders within the project limits including all interchange ramps and other areas to be mown. Designated areas may be omitted for litter removal by the Engineer due to safety concerns.

The Contractor shall provide adequate personnel and materials to collect and remove litter. The Contractor shall be responsible for locating and utilizing approved local landfills and recycling facilities. Refer to Section 105-27 of the *Standard Specifications* for potential hazardous materials. All collected litter shall be containerized immediately and kept off the traveled portions of the roadway, shoulders, and rights-of-way (including paved shoulders). All collected litter that is small enough to be placed in a bag shall be bagged immediately. All collected litter that is too large for a bag shall be placed into a vehicle. Extended storage or stockpiling of collected litter and recyclables will not be permitted.

The Contractor's personnel shall dispose of any litter in a landfill approved by North Carolina Division of Waste Management. The Contractor will not be allowed to use NCDOT accounts at the landfills/recycling centers nor be allowed to dispose of the litter in NCDOT trash containers on any NCDOT property.

The Contractor shall report online the number of bags of litter and any recycling on the NCDOT Litter Management Website on the date of the pickup at the following website:

<https://apps.ncdot.gov/LM>

An access code ('Pickup Key') for the online reporting portal may be obtained via emailing the Roadside Environmental Unit Litter Management Section at [ncdot.clr@ncdot.gov](mailto:ncdot.clr@ncdot.gov). The Contractor shall request access to the litter removal reporting website prior to starting initial litter collection operations.

### **Measurement and Payment**

The quantity of litter removal to be performed will be affected by the actual conditions that occur during construction of the project. The quantity of litter removal 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.

*Manual Litter Removal* will be measured and paid as the actual number of man hours each worker spends picking up litter. Such price and payment will be full compensation for all litter removal work covered by *Litter Removal*, including, but not limited to, furnishing all materials, labor, equipment, transport, reporting, and incidentals necessary to accomplish the work.

*Litter Disposal* will be measured and paid for by the actual number of tons of litter collected and properly disposed of at a state approved landfill. Such price and payment will be full compensation for all fees, labor, transport, and incidentals necessary to dispose of collected litter associated with *Litter Removal*.

All traffic control necessary to provide a safe work area for *Litter Removal* shall be paid for as specified elsewhere in the contract.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Manual Litter Removal	MHR
Litter Disposal	TON

### **TACK FOR MULCH FOR EROSION CONTROL:**

(07-19-22)

#### **Description**

This work consists of supplying and installing of an approved material for binding mulch for erosion control in accordance with Section 1060-5, Section 1615 and Section 1660 of the *Standard Specifications*. This provision defines acceptable materials and rates for tacking material for holding mulch in place.

**Materials**

## (a) Emulsified Asphalt

Asphalt emulsion tack shall conform to the requirements of AASHTO M 140, Specification for Emulsified Asphalt. The emulsified asphalt may be rapid setting, medium setting, or slow setting. Apply emulsified asphalt tackifier at a rate of 0.10 gallons per square yard (approximately 484 gallons per acre).

## (b) Cellulose Hydromulch

Cellulose hydromulch products shall be non-toxic, weed-free, prepackaged cellulose fiber (pulp) material containing no more than 3% ash or other inert materials. Cellulose hydromulches may contain dyes or binders specifically formulated to enhance the adhesive qualities of the hydromulch. Apply cellulose hydromulches at a rate of 1000 pounds (dry weight) per acre.

Wood fiber or wood fiber blend hydromulches may be substituted for cellulose hydromulch at the same application rate.

## (c) Other tackifiers

Other approved materials, specifically designed and manufactured for application as a straw mulch tacking agent, may be used at the manufacturer's recommended rate.

**Construction Methods**

Apply the Tack for Mulch for Erosion Control uniformly across straw mulch per Section 1615 and Section 1660 of the *Standard Specifications*.

**Payment**

*Tack for Mulch for Erosion Control* is incidental to the application of *Temporary Mulching*, Section 1615-4, and *Seeding and Mulching*, Section 1660-8, and no additional payment will be made.

**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:

<b>Property</b>	<b>Value</b>
Grab tensile strength	*md-370 lbs *cd-250 lbs
Mullen burst strength	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**

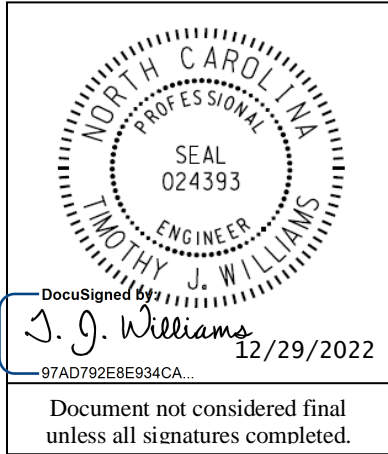
*Floating Turbidity Curtain* will be measured and paid for as the actual number of square yards of curtain furnished as specified and accepted. Such price and payment will be full compensation for the work as described in this section including but not limited to furnishing all materials, tools, equipment, and all incidentals necessary to complete the work.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Floating Turbidity Curtain	Square Yard

Signals and Intelligent Transportation Systems  
Project Special Provisions  
(Version 18.7)

Prepared By: emm  
29-Dec-22



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**1. 2018 STANDARD SPECIFICATIONS FOR ROADS & STRUCTURES**

*The 2018 Standard Specifications are revised as follows:*

**1.1. GENERAL REQUIREMENTS – Materials (1098-1(H))**

Page 10-212, line 12, revise title of section 1098-1(H) from “Electrical Service” to “Electrical Service for Traffic Signals”.

Page 10-212, revise paragraph beginning on line 13 to read “Furnish external electrical service disconnects with a single pole 50 ampere inverse time circuit breaker with at least 10,000 RMS symmetrical amperes short circuit current rating in a lockable NEMA 3R enclosure. For electrical service to an Advanced Transportation Controller (ATC) cabinet, provide a single pole 30 ampere inverse time circuit breaker with at least 10,000 RMS symmetrical amperes short circuit current rating. Ensure service disconnects are listed as meeting UL Standard UL-489 and marked as being suitable for use as service equipment. 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. Provide ground bus and neutral bus with at least 5 terminals with minimum wire capacity range of number 14 through number 4. Ensure each service has only one disconnecting means in the enclosure. Place barriers in service equipment such that no uninsulated, ungrounded service busbar, or service terminal is exposed.”

**1.2. GENERAL REQUIREMENTS – Construction Methods (1700-3(K))**

Page 17-4, revise paragraph starting on line 10 to read:

“Where electrical services do not include an external electrical service disconnect, modify service to include electrical service disconnect and a new grounding electrode system.

Provide a grounding electrode system at all new electrical services. All grounding and bonding equipment shall conform to UL Standard 467. Permanently bond grounding conductor to ground rod using an irreversible ground connector. Unless the irreversible ground connectors are designed for use with more than one conductor, only one conductor shall be used with each irreversible ground connector. Ensure all irreversible ground connectors are installed per manufacturer’s installation instructions. Irreversible compression ground connectors requiring the use of a die for installation shall be made using a hydraulic, power, or ratcheting type crimper with appropriate dies. The use of handheld pliers for crimping irreversible compression ground connectors is prohibited.

Modify existing electrical services, as necessary, to meet the grounding requirements of the NEC, these Standard Specifications and the project plans. Remove any ground rods in the cabinet foundation and install a new grounding electrode system. Cut off abandoned ground rods in the cabinet foundation flush with the foundation surface.

In addition to NEC requirements, test grounding electrode resistance for a maximum of 20 ohms. Furnish and install additional ground rods to grounding electrode system as necessary to meet the Standard Specifications, Standard Drawings, and test requirements. Grounding electrode resistance test shall be verified or witnessed by the Engineer or the Engineer’s designated representative.

Follow test equipment’s procedures for measuring grounding electrode resistance. When using clamp-type ground resistance meters, readings of less than one ohm typically indicate a ground loop. Rework bonding and grounding circuits as necessary to remove ground loop circuits and retest. If a ground loop cannot be identified and removed to allow the proper use of a clamp-type ground resistance meter, use the three-point test method.

Submit a completed Inductive Loop & Grounding Test Form available on the Department's website.

For ease of inspection, the top of ground rods shall be 12 inches ( $\pm 1$  inch) below finished grade and shall remain exposed until electrical inspection is complete. Provide a length of marker tape 6 inches below finished grade directly over grounding electrodes and conductors.

For ground rods installed in areas where the slope is greater than 4:1, the top of the ground rods shall be a minimum of 24" below finished grade. Provide a length of marker tape 6 inches to 12 inches below finished grade directly over grounding electrodes and conductors."

### **1.3. GENERAL REQUIREMENTS – Construction Methods (1700-3(L))**

Page 17-4, revise paragraph starting on line 35 to read "Using an approved termination means, connect a #14 AWG minimum, 19-strand copper conductor (Type THWN) with insulation that is green or green with one or more yellow stripes to serve as an equipment grounding conductor to metal poles, vehicular and pedestrian signal pedestals, and other metallic components which are not otherwise bonded through means approved by the Engineer. For traffic signal installations, equipment grounding conductors shall have insulation that is green with one or more yellow stripes."

### **1.4. GENERAL REQUIREMENTS – Construction Methods (1700-3(M))**

Page 17-4, Replace the sentence beginning on line 41 with "Prior to placing signal in the steady (stop-and-go) mode, the signal should be placed in the flashing mode for up to 7 days or as directed by the Engineer. The signal should not be placed in the steady (stop-and-go) mode on a Saturday or Sunday without prior approval from the Engineer. Do not place the signal in steady (stop-and-go) mode until inspected and without the prior approval of the Engineer."

### **1.5. WOOD POLES – Construction Methods (1720-3)**

Page 17-18, revise sentence starting on line 13 to read "On new Department-owned poles, install a grounding system consisting of #6 AWG solid bare copper wire that is connected with an **irreversible ground connector** to a single ground rod installed at base of pole or to the electrical service grounding electrode system located within 10 feet of the pole."

## **2. SIGNAL HEADS**

### **2.1. MATERIALS**

#### **A. General:**

Fabricate vehicle signal head housings and end caps from die-cast aluminum. Fabricate 12-inch and 16-inch pedestrian signal head housings and end caps from die-cast aluminum. Fabricate 9-inch pedestrian signal head housings, end caps, and visors from virgin polycarbonate material. Provide visor mounting screws, door latches, and hinge pins fabricated from stainless steel. Provide interior screws, fasteners, and metal parts fabricated from stainless steel.

Fabricate tunnel and traditional visors from sheet aluminum.

Paint all surfaces inside and outside of signal housings and doors. Paint outside surfaces of tunnel and traditional visors, wire outlet bodies, wire entrance fitting brackets and end caps when supplied as components of messenger cable mounting assemblies, pole and pedestal mounting assemblies, and pedestrian pushbutton housings. Have electrostatically-applied, fused-polyester paint in highway yellow (Federal Standard 595C, Color Chip Number 13538) a minimum of 2.5 to 3.5 mils thick. Do not apply paint to the latching hardware, rigid vehicle signal head mounting brackets for mast-arm attachments, messenger cable hanger components or balance adjuster components.

Have the interior surfaces of tunnel and traditional visors painted an alkyd urea black synthetic baking enamel with a minimum gloss reflectance and meeting the requirements of MIL-E-10169, "Enamel Heat Resisting, Instrument Black."

Where required, provide polycarbonate signal heads and visors that comply with the provisions pertaining to the aluminum signal heads listed on the QPL with the following exceptions:

Fabricate signal head housings, end caps, and visors from virgin polycarbonate material. Provide UV stabilized polycarbonate plastic with a minimum thickness of  $0.1 \pm 0.01$  inches that is highway yellow (Federal Standard 595C, Color Chip 13538). Ensure the color is incorporated into the plastic material before molding the signal head housings and end caps. Ensure the plastic formulation provides the following physical properties in the assembly (tests may be performed on separately molded specimens):

Test	Required	Method
Specific Gravity	1.17 minimum	ASTM D 792
Flammability	Self-extinguishing	ASTM D 635
Tensile Strength, yield, PSI	8500 minimum	ASTM D 638
Izod impact strength, ft-lb/in [notched, 1/8 inch]	12 minimum	ASTM D 256

For pole mounting, provide side of pole mounting assemblies with framework and all other hardware necessary to make complete, watertight connections of the signal heads to the poles and pedestals. Fabricate the mounting assemblies and frames from aluminum with all necessary hardware, screws, washers, etc. to be stainless steel. Provide mounting fittings that match the positive locking device on the signal head with the serrations integrally cast into the brackets. Provide upper and lower pole plates that have a 1 ¼-inch vertical conduit entrance hubs with the hubs capped on the lower plate and 1 ½-inch horizontal hubs. Ensure that the assemblies provide rigid attachments to poles and pedestals so as to allow no twisting or swaying of the signal heads. Ensure that all raceways are free of sharp edges and protrusions, and can accommodate a minimum of ten Number 14 AWG conductors.

For pedestal mounting, provide a post-top slipfitter mounting assembly that matches the positive locking device on the signal head with serrations integrally cast into the slipfitter. Provide stainless steel hardware, screws, washers, etc. Provide a minimum of six 3/8 X 3/4-inch long square head bolts for attachment to pedestal. Provide a center post for multi-way slipfitters.

For light emitting diode (LED) traffic signal modules, provide the following requirements for inclusion on the Department's Qualified Products List for traffic signal equipment.

1. Sample submittal,
2. Third-party independent laboratory testing results for each submitted module with evidence of testing and conformance with all of the Design Qualification Testing specified in section 6.4 of each of the following Institute of Transportation Engineers (ITE) specifications:
  - Vehicle Traffic Control Signal Heads – Light Emitting Diode (LED) Circular Signal Supplement
  - Vehicle Traffic Control Signal Heads – Light Emitting Diode (LED) Vehicle Arrow Traffic Signal Supplement
  - Pedestrian Traffic Control Signal Indications –Light Emitting Diode (LED) Signal Modules.



(Note: The Department currently recognizes two approved independent testing laboratories. They are Intertek ETL Semko and Light Metrics, Incorporated with Garwood Laboratories. Independent laboratory tests from other laboratories may be considered as part of the QPL submittal at the discretion of the Department,

3. Evidence of conformance with the requirements of these specifications,
4. A manufacturer's warranty statement in accordance with the required warranty, and
5. Submittal of manufacturer's design and production documentation for the model, including but not limited to, electrical schematics, electronic component values, proprietary part numbers, bill of materials, and production electrical and photometric test parameters.
6. Evidence of approval of the product to bear the Intertek ETL Verified product label for LED traffic signal modules.

Ensure LED traffic signal modules meet the performance requirements for the minimum period of 15 years, provide a written warranty against defects in materials and workmanship for the modules for a period of 15 years after installation of the modules. During the warranty period, the manufacturer must provide new replacement modules within 45 days of receipt of modules that have failed at no cost to the State. Repaired or refurbished modules may not be used to fulfill the manufacturer's warranty obligations. Provide manufacturer's warranty documentation to the Department during evaluation of product for inclusion on Qualified Products List (QPL).

#### **B. Vehicle Signal Heads:**

Comply with the ITE standard "Vehicle Traffic Control Signal Heads". Provide housings with provisions for attaching backplates.

Provide visors that are 8 inches in length for 8-inch vehicle signal head sections. Provide visors that are 10 inches in length for 12-inch vehicle signal heads.

Provide a termination block with one empty terminal for field wiring for each indication plus one empty terminal for the neutral conductor. Have all signal sections wired to the termination block. Provide barriers between the terminals that have terminal screws with a minimum Number 8 thread size and that will accommodate and secure spade lugs sized for a Number 10 terminal screw.

Mount termination blocks in the yellow signal head sections on all in-line vehicle signal heads. Mount the termination block in the red section on five-section vehicle signal heads.

Furnish vehicle signal head interconnecting brackets. Provide one-piece aluminum brackets less than 4.5 inches in height and with no threaded pipe connections. Provide hand holes on the bottom of the brackets to aid in installing wires to the signal heads. Lower brackets that carry no wires and are used only for connecting the bottom signal sections together may be flat in construction.

For messenger cable mounting, provide messenger cable hangers, wire outlet bodies, balance adjusters, bottom caps, wire entrance fitting brackets, and all other hardware necessary to make complete, watertight connections of the vehicle signal heads to the messenger cable. Fabricate messenger cable hanger components, wire outlet bodies and balance adjuster components from stainless steel or malleable iron galvanized in accordance with ASTM A153 (Class A) or ASTM A123. Provide serrated rings made of aluminum. Provide messenger cable hangers with U-bolt clamps. Fabricate washers, screws, hex-head bolts and associated nuts, clevis pins, cotter pins, U-bolt clamps and nuts from stainless steel.

For mast-arm mounting, provide rigid vehicle signal head mounting brackets and all other hardware necessary to make complete, watertight connections of the vehicle signal heads to the mast arms and to provide a means for vertically adjusting the vehicle signal heads to proper alignment.

Fabricate the mounting assemblies from aluminum, and provide serrated rings made of aluminum. Provide stainless steel cable attachment assemblies to secure the brackets to the mast arms. Ensure all fastening hardware and fasteners are fabricated from stainless steel.

Provide LED vehicular traffic signal modules (hereafter referred to as modules) that consist of an assembly that uses LEDs as the light source in lieu of an incandescent lamp for use in traffic signal sections. Use LEDs that are aluminum indium gallium phosphorus (AlInGaP) technology for red and yellow indications and indium gallium nitride (InGaN) for green indications. Install the ultra bright type LEDs that are rated for 100,000 hours of continuous operation from -40°F to +165°F. Design modules to have a minimum useful life of 15 years and to meet all parameters of this specification during this period of useful life.

For the modules, provide spade terminals crimped to the lead wires and sized for a #10 screw connection to the existing terminal block in a standard signal head. Do not provide other types of crimped terminals with a spade adapter.

Ensure the power supply is integral to the module assembly. On the back of the module, permanently mark the date of manufacture (month & year) or some other method of identifying date of manufacture.

Tint the red, yellow and green lenses to correspond with the wavelength (chromaticity) of the LED. Transparent tinting films are unacceptable. Provide a lens that is integral to the unit with a smooth outer surface.

#### 1. LED Circular Signal Modules:

Provide modules in the following configurations: 12-inch circular sections, and 8-inch circular sections. All makes and models of LED modules purchased for use on the State Highway System shall appear on the current NCDOT Traffic Signal Qualified Products List (QPL).

Provide the manufacturer's model number and the product number (assigned by the Department) for each module that appears on the 2018 or most recent Qualified Products List. In addition, provide manufacturer's certification in accordance with Article 106-3 of the *Standard Specifications*, that each module meets or exceeds the ITE "Vehicle Traffic Control Signal Heads – Light Emitting Diode (LED) Circular Signal Supplement" dated June 27, 2005 (hereafter referred to as VTCSH Circular Supplement) and other requirements stated in this specification.

Provide modules that meet the following requirements when tested under the procedures outlined in the VTCSH Circular Supplement:

Module Type	Max. Wattage at 165° F	Nominal Wattage at 77° F
12-inch red circular	17	11
8-inch red circular	13	8
12-inch green circular	15	15
8-inch green circular	12	12

For yellow circular signal modules, provide modules tested under the procedures outlined in the VTCSH Circular Supplement to insure power required at 77° F is 22 Watts or less for the 12-inch circular module and 13 Watts or less for the 8-inch circular module.

Note: Use a wattmeter having an accuracy of  $\pm 1\%$  to measure the nominal wattage and maximum wattage of a circular traffic signal module. Power may also be derived from voltage, current and power factor measurements.

## 2. LED Arrow Signal Modules

Provide 12-inch omnidirectional arrow signal modules. All makes and models of LED modules purchased for use on the State Highway System shall appear on the current NCDOT Traffic Signal Qualified Products List (QPL).

Provide the manufacturer's model number and the product number (assigned by the Department) for each module that appears on the 2018 or most recent Qualified Products List. In addition, provide manufacturer's certification in accordance with Article 106-3 of the *Standard Specifications*, that each module meets or exceeds the requirements for 12-inch omnidirectional modules specified in the ITE "Vehicle Traffic Control Signal Heads – Light Emitting Diode (LED) Vehicle Arrow Traffic Signal Supplement" dated July 1, 2007 (hereafter referred to as VTCSH Arrow Supplement) and other requirements stated in this specification.

Provide modules that meet the following requirements when tested under the procedures outlined in the VTCSH Arrow Supplement:

Module Type	Max. Wattage at 165° F	Nominal Wattage at 77° F
12-inch red arrow	12	9
12-inch green arrow	11	11

For yellow arrow signal modules, provide modules tested under the procedures outlined in the VTCSH Arrow Supplement to insure power required at 77° F is 12 Watts or less.

Note: Use a wattmeter having an accuracy of  $\pm 1\%$  to measure the nominal wattage and maximum wattage of an arrow traffic signal module. Power may also be derived from voltage, current and power factor measurements.

## 3. LED U-Turn Arrow Signal Modules:

Provide modules in the following configurations: 12-inch left u-turn arrow signal modules and 12-inch right u-turn arrow signal modules.

Modules are not required to be listed on the ITS and Signals Qualified Products List. Provide manufacturer's certification in accordance with Article 106-3 of the *Standard Specifications*, that each module meets or exceeds the ITE "Vehicle Traffic Control Signal Heads – Light Emitting Diode (LED) Circular Signal Supplement" dated June 27, 2005 (hereafter referred to as VTCSH Circular Supplement) and other requirements stated in this specification.

Provide modules that have minimum maintained luminous intensity values that are not less than 16% of the values calculated using the method described in section 4.1 of the VTCSH Circular Supplement.

Provide modules that meet the following requirements when tested under the procedures outlined in the VTCSH Circular Supplement:

Module Type	Max. Wattage at 165° F	Nominal Wattage at 77° F
12-inch red u-turn arrow	17	11
12-inch green u-turn arrow	15	15

For yellow u-turn arrow signal modules, provide modules tested under the procedures outlined in the VTCSH Circular Supplement to ensure power required at 77° F is 22 Watts or less.

Note: Use a wattmeter having an accuracy of  $\pm 1\%$  to measure the nominal wattage and maximum wattage of a circular traffic signal module. Power may also be derived from voltage, current and power factor measurements.

#### 4. LED Bi-Modal Green-Yellow Arrow Signal Modules

Provide 12-inch omnidirectional bi-modal arrow signal modules. Ensure both green and yellow arrow indications are in each module with a clear lens that is integral to the unit. Ensure both indications display an incandescent style look.

Modules are not required to be listed on the ITS and Signals Qualified Products List. Ensure that both indications along with the module meet or exceed the requirements in sections 1, 2, 3, 4 and 5 of the VTCSH Arrow Supplement and other requirements stated in this specification.

Provide modules that meet the following requirements when tested under the procedures outlined in the VTCSH Arrow Supplement:

Arrow Type	Nominal Wattage at 77° F
12-inch yellow arrow	12
12-inch green arrow	11

Note: Use a wattmeter having an accuracy of  $\pm 1\%$  to measure the nominal wattage and maximum wattage of a circular traffic signal module. Power may also be derived from voltage, current and power factor measurements.

#### C. Pedestrian Signal Heads:

Provide pedestrian signal heads with international symbols that meet the MUTCD. Do not provide letter indications.

Comply with the ITE standard for “Pedestrian Traffic Control Signal Indications” and the following sections of the ITE standard for “Vehicle Traffic Control Signal Heads” in effect on the date of advertisement:

- Section 3.00 - “Physical and Mechanical Requirements”
- Section 4.01 - “Housing, Door, and Visor: General”
- Section 4.04 - “Housing, Door, and Visor: Materials and Fabrication”
- Section 7.00 - “Exterior Finish”

Provide a double-row termination block with three empty terminals and number 10 screws for field wiring. Provide barriers between the terminals that accommodate a spade lug sized for number 10 terminal screws. Mount the termination block in the hand section. Wire all signal sections to the terminal block.

Where required by the plans, provide 16-inch pedestrian signal heads with traditional three-sided, rectangular visors, 6 inches long. Where required by the plans, provide 12-inch pedestrian signal heads with traditional three-sided, rectangular visors, 8 inches long.

Provide 2-inch diameter pedestrian push-buttons with weather-tight housings fabricated from die-cast aluminum and threading in compliance with the NEC for rigid metal conduit. Provide a weep hole in the housing bottom and ensure that the unit is vandal resistant.

Provide push-button housings that are suitable for mounting on flat or curved surfaces and that will accept 1/2-inch conduit installed in the top. Provide units that have a heavy duty push-button assembly with a sturdy, momentary, normally-open switch. Have contacts that are electrically insulated from the housing and push-button. Ensure that the push-buttons are rated for a minimum of 5 mA at 24 volts DC and 250 mA at 12 volts AC.

Provide standard R10-3 signs with mounting hardware that comply with the MUTCD in effect on the date of advertisement. Provide R10-3E signs for countdown pedestrian heads and R10-3B for non-countdown pedestrian heads.

Design the LED pedestrian traffic signal modules (hereafter referred to as modules) for installation into standard pedestrian traffic signal sections that do not contain the incandescent signal section reflector, lens, eggcrate visor, gasket, or socket. Provide modules that consist of an assembly that uses LEDs as the light source in lieu of an incandescent lamp. Use LEDs that are of the latest aluminum indium gallium phosphorus (AlInGaP) technology for the Portland Orange hand and countdown displays. Use LEDs that are of the latest indium gallium nitride (InGaN) technology for the Lunar White walking man displays. Install the ultra-bright type LEDs that are rated for 100,000 hours of continuous operation from -40°F to +165°F. Design modules to have a minimum useful life of 60 months and to meet all parameters of this specification during this period of useful life.

Design all modules to operate using a standard 3 - wire field installation. Provide spade terminals crimped to the lead wires and sized for a #10 screw connection to the existing terminal block in a standard pedestrian signal housing. Do not provide other types of crimped terminals with a spade adapter.

Ensure the power supply is integral to the module assembly. On the back of the module, permanently mark the date of manufacture (month & year) or some other method of identifying date of manufacture.

Provide modules in the following configuration: 16-inch displays which have the solid hand/walking man overlay on the left and the countdown on the right, and 12-inch displays which have the solid hand/walking man module as an overlay. All makes and models of LED modules purchased for use on the State Highway System shall appear on the current NCDOT Traffic Signal Qualified Products List (QPL).

Provide the manufacturer’s model number and the product number (assigned by the Department) for each module that appears on the 2018 or most recent Qualified Products List. In addition, provide manufacturer’s certification in accordance with Article 106-3 of the *Standard Specifications*, that each module meets or exceeds the ITE “Pedestrian Traffic Control Signal Indicators - Light Emitting Diode (LED) Signal Modules” dated August 04, 2010 (hereafter referred to as PTCSI Pedestrian Standard) and other requirements stated in this specification.

Provide modules that meet the following requirements when tested under the procedures outlined in the PTCSI Pedestrian Standard:

Module Type	Max. Wattage at 165° F	Nominal Wattage at 77° F
Hand Indication	16	13
Walking Man Indication	12	9
Countdown Indication	16	13

Note: Use a wattmeter having an accuracy of ±1% to measure the nominal wattage and maximum wattage of a circular traffic signal module. Power may also be derived from voltage, current and power factor measurements.

Provide module lens that is hard coated or otherwise made to comply with the material exposure and weathering effects requirements of the Society of Automotive Engineers (SAE) J576. Ensure all exposed components of the module are suitable for prolonged exposure to the environment, without appreciable degradation that would interfere with function or appearance.

Ensure the countdown display continuously monitors the traffic controller to automatically learn the pedestrian phase time and update for subsequent changes to the pedestrian phase time.

Ensure the countdown display begins normal operation upon the completion of the preemption sequence and no more than one pedestrian clearance cycle.

**D. Signal Cable:**

Furnish 16-4 and 16-7 signal cable that complies with IMSA specification 20-1 except provide the following conductor insulation colors:

- For 16-4 cable: white, yellow, red, and green
- For 16-7 cable: white, yellow, red, green, yellow with black stripe tracer, red with black stripe tracer, and green with black stripe tracer. Apply continuous stripe tracer on conductor insulation with a longitudinal or spiral pattern.

Provide a ripcord to allow the cable jacket to be opened without using a cutter. IMSA specification 19-1 will not be acceptable. Provide a cable jacket labeled with the IMSA specification number and provide conductors constructed of stranded copper.

**3. VIDEO IMAGING LOOP EMULATOR DETECTOR SYSTEMS**

**3.1. DESCRIPTION**

Design, furnish, provide training, and install video imaging loop emulator detection systems with all necessary hardware in accordance with the plans and specifications.

Unless otherwise specified in the contract, all loop emulator detection equipment will remain the property of the contractor.

**3.2. MATERIALS**

**A. General:**

Material and equipment furnished under this section must be pre-approved on the Department's QPL by the date of installation except miscellaneous hardware such as cables and mounting hardware do not need to be pre-approved.

Used equipment will be acceptable provided the following conditions have been met:

- Equipment is listed on the current QPL.
- Equipment is in good working condition.
- Equipment is to remain the property of the contractor.

Ensure that software is licensed for use by the Department and by any other agency responsible for maintaining or operating the loop emulation system. Provide the Department with a license to duplicate and distribute the software as necessary for design and maintenance support.

Design and furnish video imaging loop emulator detection systems that detect vehicles at signalized intersections by processing video images and providing detection outputs to the signal controller in real time (within 112 milliseconds of vehicle arrival).

Furnish all required camera sensor units, loop emulator processor units, hardware and software packages, cabling, poles, mast arms, harnesses, camera mounting assemblies, surge protection panels, grounding systems, messenger cable and all necessary hardware. Furnish systems that allow the display of detection zones superimposed on an image of the roadway on a Department-furnished monitor or laptop computer screen. Ensure detection zones can be defined and data entered using a simple keyboard or mouse and monitor, or using a laptop PC with software.

Provide design drawings showing design details and camera sensor unit locations for review and acceptance before installation. Provide mounting height and location requirements for camera sensor units on the design based on site survey. Design video imaging loop emulator detection systems with all necessary hardware. Indicate all necessary poles, spans, mast arms, luminaire arms, cables, camera mounting assemblies and hardware to achieve the required detection zones where Department owned poles are not adequate to locate the camera sensor units. Do not design for the installation of poles in medians.

Obtain the Engineer's approval before furnishing video imaging loop emulator detection systems. The contractor is responsible for the final design of video imaging loop emulator detection systems. Review and acceptance of the designs by the Department does not relieve the contractor from the responsibility to provide fully functional systems and to ensure that the required detection zones can be provided.

Provide the ability to program each detection call (input to the controller) with the following functions:

- Full Time Delay – Delay timer is active continuously,
- Normal Delay – Delay timer is inhibited when assigned phase is green (except when used with TS 2 and 170/2070L controllers),
- Extend – Call is extended for this amount of time after vehicle leaves detection area,
- Delay Call/Extend Call – This feature uses a combination of full time delay and extend time on the same detection call. Ensure operation is as follows: Vehicle calls are received after the delay timer times out. When a call is detected, it is held until the detection area is empty and the programmed extend time expires. If another vehicle enters the detection area before the extend timer times out, the call is held and the extend time is reset. When the extend timer times out, the delay timer has to expire before another vehicle call can be received.

Provide the ability to program each detection zone as one of the following functions:

- Presence detector,
- Directional presence detector,
- Pulse detector,
- Directional pulse detector.

Ensure previously defined detector zones and configurations can be edited.

Provide each individual system with all the necessary equipment to focus and zoom the camera lenses without the need to enter the camera enclosure.

Provide systems that allow for the placement of at least 8 detection zones within the combined field of view of a single camera sensor unit. Provide a minimum of 8 detection outputs per camera.

Provide detection zones that can be overlapped. Ensure systems reliably detect vehicles when the horizontal distance from the camera sensor unit to the detection zone area is less than ten times the mounting height of the sensor. Ensure systems detect vehicles in multiple travel lanes.

Ensure systems can detect vehicle presence within a 98 to 102 percent accuracy (up to 2 percent of the vehicles missed and up to 2 percent of false detection) for clear, dry, daylight conditions, a 96 to 105 percent accuracy (up to 4 percent of the vehicles missed and up to 5 percent false detection) for dawn and dusk conditions, and a 96 percent accuracy (up to 4 percent of the vehicles missed) for night and adverse conditions (fog, snow, rain, etc.) using standard sensor optics and in the absence of occlusion.

Repair and replace all failed components within 72 hours.

The Department may conduct field-testing to ensure the accuracy of completed video imaging loop emulator detection systems.

**B. Loop Emulator System:**

Furnish loop emulator systems that receive and simultaneously process information from camera sensor units, and provides detector outputs to signal controllers.

Ensure systems provide the following:

- Operate in a typical roadside environment and meet the environmental specifications and are fully compatible with NEMA TS 1, NEMA TS 2, or Type 170/2070L controllers and cabinets,
- provide a “fail-safe” mode whereby failure of one or more of the camera sensor units or power failure of the loop emulator system will cause constant calls to be placed on the affected vehicle detection outputs to the signal controller,
- provide compensation for minor camera movement of up to 2 percent of the field of view at 400 feet without falsely detecting vehicles,
- process the video at a minimum rate of 30 times per second,
- provide separate wired connectors inside the controller cabinet for video recording each camera,
- provide remote video monitoring with a minimum refresh rate at 1 frame per second over a standard dial-up telephone line,
- provide remote video detection monitoring.

Furnish camera sensor units that comply with the following:

- have an output signal conforming to EIA RS-170 standard,
- have a nominal output impedance of 75 ohms,
- be immune to bright light sources, or have built in circuitry or protective devices to prevent damage to the sensor when pointed directly at strong light sources,
- be housed in a light colored environmental enclosure that is water proof and dust tight, and that conforms to NEMA-4 specifications or better,
- simultaneously monitor at least five travel lanes when placed at the proper mounting location with a zoom lens,
- have a sunshield attached to the environmental enclosure to minimize solar heating,
- meet FCC class B requirements for electromagnetic interference emissions,
- have a heater attached to the viewing window of the environmental enclosure to prevent ice and condensation in cold weather.

Where coaxial video cables and other cables are required between the camera sensor and other components located in the controller cabinet, furnish surge protection in the controller cabinet.

If furnishing coaxial communications cable comply with the following, as recommended by the approved loop emulator manufacturer:

- Number 20 AWG, solid bare copper conductor terminated with crimped-on BNC connectors (do not use BNC adapters) from the camera sensor to the signal controller cabinet.



- Number 22 AWG, stranded bare copper conductor terminated with crimped-on BNC connectors (do not use BNC adapters) from the camera sensor unit to the junction box, and within the signal controller cabinet.

Furnish power cable appropriately sized to meet the power requirements of the sensors. At a minimum, provide three conductor 120 VAC field power cable.

As determined during the site survey, furnish sensor junction boxes with nominal 6 x 10 x 6 inches dimensions at each sensor location. Provide terminal blocks and tie points for coaxial cable.

### **C. Video Imaging Loop Emulator System Support:**

Furnish video imaging loop emulator systems with either a simple keyboard or a mouse with monitor and appropriate software, or with system software for use on department-owned laptop PCs. Ensure the system is Windows 2000 and Windows XP compatible.

Provide Windows 2000 and Windows XP compatible personal computer software, if needed, to provide remote video and video detection monitoring.

Ensure systems allow the user to edit previously defined detector configurations. When a vehicle is within a detection zone, provide for a change in color or intensity of the detection zone perimeter or other appropriate display changes on the Department-furnished monitor or laptop computer screen.

Provide cabling and interconnection hardware with 6-foot minimum length interconnection cable to interface with the system.

Provide all associated equipment manuals and documentation.

### **3.3. CONSTRUCTION METHODS**

Arrange and conduct site surveys with the system manufacturer's representative and Department personnel to determine proper camera sensor unit selection and placement. Provide the Department at least 3 working days notice before conducting site surveys. Upon completion of the site surveys the Department will provide revised plans reflecting the findings of the site survey.

Before beginning work at locations requiring video imaging loop emulator detection systems, furnish system software. Upon activation of detection zones, provide detector configuration files. Ensure that up-to-date detection configuration files are furnished for various detection zone configurations that may be required for construction phasing.

Place into operation loop emulator detection systems. Configure loop emulator detection systems to achieve required detection in designated zones. Have a certified manufacturer's representative on site to supervise and assist with installation, set up, and testing of the system.

Install the necessary processing and communications equipment in the signal controller cabinet. Make all necessary modifications to install equipment, cabling harnesses, and camera sensor interface panels with surge suppression.

Perform modifications to camera sensor unit gain, sensitivity, and iris limits necessary to complete the installation.

Do not install camera sensor units on signal poles unless approved by the Engineer.

Install the necessary cables from each sensor to the signal controller cabinet along signal cabling routes. Install surge protection and terminate all cable conductors.

Relocate camera sensor units and reconfigure detection zones as necessary according to the plans for construction phases.

Provide at least 8 hours of training on the set up, operation, troubleshooting, and maintenance of the loop emulator detection system to a maximum of ten Department personnel. Arrange for training to be conducted by the manufacturer’s representative at an approved site within the Division responsible for administration of the project. Thirty days before conducting training submit a detailed course curriculum, draft manuals and materials, and resumes. Obtain approval of the submittal before conducting the training. At least one week before beginning training, provide three sets of complete documentation necessary to maintain and operate the system. Do not perform training until installation of loop emulator detection systems is complete.

**3.4. MEASUREMENT AND PAYMENT**

Actual number of site surveys, arranged, conducted, and accepted.

Actual number of luminaire arms for video systems furnished, installed, and accepted.

Actual number of cameras without internal loop emulator processing units furnished, installed, and accepted.

Actual number of external loop emulator processing units furnished, installed, and accepted.

No measurement will be made of video imaging loop emulator system support or training, power and video cables, and trenching as these items will be considered incidental to furnishing and installing video imaging loop emulator detection systems.

Payment will be made under:

Site Survey.....	Each
Luminaire Arm for Video System .....	Each
Camera without Internal Loop Emulator Processing Unit .....	Each
External Loop Emulator Processing Unit.....	Each

**Project Special Provisions  
Structure**

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3/6/2023



DocuSigned by:  
*Jason Griscom*  
 E4ACDE421F244BA...

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**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.

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**THERMAL SPRAYED COATINGS (METALLIZATION)****(12-1-2017)****1.0 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.

**2.0 QUALIFICATIONS**

Only use NCDOT approved TSC Contractors meeting the requirements outlined in the Thermal Sprayed Coatings (Metallization) Program.

**3.0 MATERIALS**

Use only materials meeting the requirements of Section 7 of the Thermal Sprayed Coatings (Metallization) Program.

**4.0 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.

**5.0 INSPECTION AND TESTING**

The TSC Contractor must conduct inspections and tests listed in the Thermal Sprayed Coatings (Metallization) Program.

**6.0 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.

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- 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.

#### **7.0 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.

#### **8.0 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.

**STRIP SEAL EXPANSION JOINTS****(06-25-2020)****1.0 GENERAL**

This Special Provision covers furnishing and installing strip seal expansion joints as shown on the contract drawings and in accordance with this Special Provision, the Standard Specifications and the manufacturer's recommendation. All materials, labor, equipment, and incidentals necessary for proper installation of the strip seal expansion joints are included.

**2.0 MATERIALS**

Provide strip seal expansion joints capable of accommodating a total movement measured parallel to the centerline of the roadway as shown on plans. The components of the expansion joint include steel retainer rails and a neoprene seal gland.

The steel retainer rails shall consist of a "P" shape profile configuration with anchor studs welded to the concrete face. The rails shall have a minimum height of 8 inches, a minimum thickness of ½ inch and a maximum top surface (at the riding surface) width of 2 inches. Use AASHTO M270 Grade 36 or Grade 50 steel for the steel retainer rails.

The neoprene gland shall be extruded synthetic rubber with virgin polychloroprene as the only polymer. The gland manufacturer shall provide a Type 4 certification, in accordance with the Standard Specifications, attesting the gland has been tested and meets the following minimum properties:

PHYSICAL PROPERTY	TEST METHOD	REQUIREMENTS
Tensile Strength, psi (min.)	ASTM D412	2000
Elongation at break, % (min.)	ASTM D412	250
Hardness, Type A durometer, points	ASTM D2240 Modified	60 ± 10
Oven aging, 70h @ 212°F Tensile strength, % change (max.) Elongation, % change (max.) Hardness, points change (max.)	ASTM D573	-20 -20 0 to +10
Oil Swell, ASTM Oil No. 3, 70h @ 212°F Weight change, % (max.)	ASTM D471	45
Ozone resistance 20% strain, 300 pphm in air 70h @ 104°F	ASTM D1149 Modified	No cracks
Low temperature stiffening, 7 days @ 14°F Hardness, Type A durometer, points change	ASTM D2240	0 to +15

Compression Set, 70h @ 212°F (max.)	ASTM D395 Method B (modified)	40%
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### 3.0 SHOP DRAWINGS

Submit a set of complete shop drawings to the Engineer via email for review, comments and acceptance and carbon copy (cc) the Structures Management Unit Working Drawing Review Group ([SMU-wdr@ncdot.gov](mailto:SMU-wdr@ncdot.gov)). Send the drawings well in advance of the scheduled installation time for the strip seal expansion joint rail. Prior to submitting the shop drawings, have someone, other than the draftsman who prepares the drawings, check all detailed drawings and include the signatures of both the draftsman and checker on each sheet of the drawings. The Engineer returns unchecked drawings to the Contractor.

Steel retainer rails shall consist of one-piece construction including upturns. Welding two or more components to obtain the required cross-sectional shape is not permitted. Show all dimensions, anchor stud locations, welded splice details, splice locations and any other details or data necessary to fabricate the joint on the shop drawings. Include the joint model number and joint movement range. Draw all details to scale. Identify, in detail, welding procedures to be performed in fabricating the joint. As a minimum, also show the following on the drawings:

- All field splice locations. Steel retainer rail field splices are only permitted at crown points, locations with abrupt changes in the deck slab cross slope, and at travel lane lines. Splices within travel lanes are not permitted and splicing on edge lines is not required. For the location of travel lane markings at the strip seal expansion joint, see the structure plans. At the field splice locations, locate the horizontal stud anchors 3 inches from the centerline of the splice.
- Details of the shipping device for the steel retainer rail assemblies. Ensure the device is capable of resisting shipping and handling forces without causing damage to the steel retainer rail assemblies or metallized coating.
- The method of supporting steel retainer rails horizontally and vertically during joint installation and placement of concrete to ensure stability and proper alignment. Ensure the method is capable of resisting construction forces without causing damage to the steel retainer rail assemblies or metallized coating and are adjustable to account for variable temperature settings. Place supports near field splices of steel retainer rails to ensure that splices are straight and even.
- The proposed procedure to correct for the effects of beam movement and rotation when setting width of joint opening.
- The proposed installation procedure including the sequence and suggested direction of the concrete pour(s).
- The proposed mechanism to allow joint translation after the deck pour.



- A section through the joint detail showing horizontal offset dimensions of the steel retainer rails from the centerline of the joint. This detail is required when the vertical face of the joint opening is not perpendicular to the roadway surface (e.g. when the roadway grade is significant).

#### **4.0 FABRICATION**

Fabricate the strip seal joint components in accordance with the approved shop drawings and the plans.

Splice sections of steel retainer rail in the shop to obtain required lengths. Do not use short pieces of steel retainer rail less than 6 feet 0 inches long unless required at curbs, sidewalks or staged construction locations. Splices in an individual steel retainer rail are only permitted where a construction joint is specifically required by the plans, joint segment length exceeds 50 feet, or approved by the Engineer in writing.

At splice locations where changes in deck slab cross slope occur, cut the ends of steel retainer rails parallel to the bridge centerline for skews less than 80° and greater than 100°.

Provide a neoprene gland that is compatible with the steel retainer rail. Produce a single continuous neoprene gland for the entire length of the joint. When necessary, only vulcanized splicing of the gland in the shop is permitted. Ensure the convolution(s) of the gland does not project above the top of the steel retainer rails when the ambient temperature results in the minimum joint opening.

#### **5.0 SHIPMENT**

Bolt the steel retainer rails together in the shop to form matching pairs. Clearly mark each pair to identify where they are to be placed. Ship the neoprene gland(s) together with the steel retainer rail(s) and clearly mark them to identify where they are to be placed.

#### **6.0 INSTALLATION**

Install the strip seal expansion joint in accordance with the plan details, this Special Provision, the Standard Specifications, and the manufacturer's recommended installation procedures. Have a manufacturer's representative present during installation of the joint.

Install the steel retainer rail assemblies at proper grade and alignment. See contract drawings for width of joint opening.

Bolt, weld or clamp steel retainer rail assemblies in position using temporary or sacrificial brackets as required. Do not use temporary or sacrificial support brackets, bolts, clamps, etc. between the faces of the steel retainer rails. Do not weld within 2 inches of steel retainer rail surfaces exposed in the completed structure. Do not weld strip seal expansion joint components to reinforcing steel or structural steel.

For staged construction, install steel retainer rail assemblies in a given subsequent stage to align with those installed in an adjacent prior stage after deflection and rotation due to deck casting of adjoining spans has occurred.

Protect metalized steel retainer rail assemblies during screeding operations per the manufacturer's recommendations. Provide temporary blocking material in the steel retainer rail seal cavities to prevent concrete intrusion during deck pour and finishing.

Loosen any temporary or sacrificial support brackets, bolts, clamps, etc. that span across the joint after initial set of concrete, but not more than two hours after conclusion of concrete placement.

Install the neoprene gland after completion of deck casting. Use a single continuous neoprene gland for the entire length of the joint. Field splicing of the neoprene gland is not permitted. Remove all joint form material and blocking material prior to installing the gland. Field install the gland in accordance with manufacturer's recommendations. Thoroughly coat all contact surfaces between the gland and the steel retainer rail seal cavities with an adhesive lubricant before setting the gland in place. Use lubricant adhesive that conforms to ASTM D4070 and is compatible with manufacture's strip seal expansion joint to attach neoprene gland to the steel retainer rails.

## 7.0 INSPECTION

The Engineer inspects the joint system for proper alignment and proper stud placement and attachment. If any aspect of the strip seal expansion joint is deemed unacceptable, make the necessary corrections.

When concrete is cast, use a non-aluminum, 10 foot, true-to-line straight-edge to check and grade the top of the slab on each side of the joint to ensure smooth transition between spans.

### Watertight Integrity Test

- Upon completion of each strip seal expansion joint, perform a watertight integrity test on the top surface to detect any leakage. Cover the roadway section of the joint from curb to curb, or barrier rail to barrier rail, with water, either ponded or flowing, not less than 1 inch above the roadway surface at all points. Block sidewalk sections and secure an unnozzled water hose delivering approximately 1 gallon of water per minute to the inside face of the bridge railing, trained in a downward position about 6 inches above the sidewalk, such that there is continuous flow of water across the sidewalk and down the curb face of the joint.
- Maintain the ponding or flowing of water on the roadway and continuous flow across sidewalks and curbs for a period of 5 hours. At the conclusion of the test, the underside of the joint is closely examined for leakage. The strip seal expansion joint is considered watertight if no obvious wetness is visible on the Engineer's finger after touching a number of underdeck areas. Damp concrete that does not impart wetness to the finger is not considered a sign of leakage.

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- If the joint system leaks, locate the place(s) of leakage and take any repair measures necessary to stop the leakage at no additional cost to the Department. Use repair measures recommended by the manufacturer and approved by the Engineer prior to beginning corrective work.
- If measures to eliminate leakage are taken, perform a subsequent watertight integrity test subject to the same conditions as the original test. Subsequent tests carry the same responsibility as the original test and are performed at no additional cost to the Department.

## **8.0 BASIS OF PAYMENT**

Basis of payment for all strip seal expansion joints will be at the lump sum contract price for "Strip Seal Expansion Joints." Payment will be full compensation for furnishing all material, including any steel accessory plates for sidewalks, medians and rails, labor, tools, and incidentals necessary for installing the strip seal expansion joint in place and including all materials, labor, tools and incidentals for performing the original watertight integrity test.

**FALSEWORK AND FORMWORK****(2-14-22)****1.0 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.

**2.0 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.

**3.0 DESIGN REQUIREMENTS****A. Working Drawings**

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

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

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

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

If requested by the Engineer, submit with the working drawings manufacturer's catalog data listing the weight of all construction equipment that will be supported on the temporary work. Show anticipated total settlements and/or deflections of falsework and forms on the working drawings. Include falsework footing settlements, joint take-up, and deflection of beams or girders.

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

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

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

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

For 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.

#### 1. Wind Loads

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

**Table 2.2 - Wind Pressure Values**

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

#### 2. Time of Removal

The following requirements replace those of Article 3.4.8.2.

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

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

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

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



## B. Review and Approval

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

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

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

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

## 4.0 CONSTRUCTION REQUIREMENTS

All requirements of Section 420 of the Standard Specifications apply.

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

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

### A. Maintenance and Inspection

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

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

**B. Foundations**

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

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

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

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

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

**5.0 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.

**6.0 METHOD OF MEASUREMENT**

Unless otherwise specified, temporary works will not be directly measured.

**7.0 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.

**SUBMITTAL OF WORKING DRAWINGS****(2-14-22)****1.0 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.

**2.0 ADDRESSES AND CONTACTS**

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

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

Via US mail:

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

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

Via other delivery service:

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.

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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Via Email: [EastGeotechnicalSubmittal@ncdot.gov](mailto:EastGeotechnicalSubmittal@ncdot.gov)

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: [WestGeotechnicalSubmittal@ncdot.gov](mailto:WestGeotechnicalSubmittal@ncdot.gov)

Via US mail or other delivery service:

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

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

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

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

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

Secondary Structures Contacts: Emmanuel Omile (919) 707 – 6451  
[eomile@ncdot.gov](mailto:eomile@ncdot.gov)

Madonna Rorie (919) 707 – 6508  
[mrorie@ncdot.gov](mailto:mrorie@ncdot.gov)

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Eastern Regional Geotechnical Contact (Divisions 1-7):

David Hering (919) 662 – 4710  
[dthering@ncdot.gov](mailto:dthering@ncdot.gov)

Western Regional Geotechnical Contact (Divisions 8-14):

Eric Williams (704) 455 – 8902  
[ewilliams3@ncdot.gov](mailto:ewilliams3@ncdot.gov)**3.0 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**

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

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Expansion Joint Seals (modular)	Y	N	“Modular Expansion Joint Seals”
Expansion Joint Seals (strip seals)	Y	N	“Strip Seal Expansion Joints”
Falsework & Forms <sup>2</sup> (substructure)	Y	N	Article 420-3 & “Falsework and Formwork”
Falsework & Forms (superstructure)	Y	N	Article 420-3 & “Falsework and Formwork”
Girder Erection over Railroad	Y	N	Railroad Provisions
Maintenance and Protection of Traffic Beneath Proposed Structure	Y	N	“Maintenance and Protection of Traffic Beneath Proposed Structure at Station ____”
Metal Bridge Railing	Y	N	Plan Note
Metal Stay-in-Place Forms	Y	N	Article 420-3
Metalwork for Elastomeric Bearings <sup>4,5</sup>	Y	N	Article 1072-8
Miscellaneous Metalwork <sup>4,5</sup>	Y	N	Article 1072-8
Disc Bearings <sup>4</sup>	Y	N	“Disc Bearings”
Overhead and Digital Message Signs (DMS) (metalwork and foundations)	Y	N	Applicable Provisions
Placement of Equipment on Structures (cranes, etc.)	Y	N	Article 420-20
Prestressed Concrete Box Beam (detensioning sequences) <sup>3</sup>	Y	N	Article 1078-11
Precast Concrete Box Culverts	Y	N	“Optional Precast Reinforced Concrete Box Culvert at Station ____”
Prestressed Concrete Cored Slab (detensioning sequences) <sup>3</sup>	Y	N	Article 1078-11
Prestressed Concrete Deck Panels	Y	N	Article 420-3
Prestressed Concrete Girder (strand elongation and detensioning sequences)	Y	N	Articles 1078-8 and 1078-11

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Removal of Existing Structure over Railroad	Y	N	Railroad Provisions
Revised Bridge Deck Plans (adaptation to prestressed deck panels)	Y	N	Article 420-3
Revised Bridge Deck Plans (adaptation to modular expansion joint seals)	Y	N	“Modular Expansion Joint Seals”
Sound Barrier Wall (precast items)	Y	N	Article 1077-2 & “Sound Barrier Wall”
Sound Barrier Wall Steel Fabrication Plans <sup>5</sup>	Y	N	Article 1072-8 & “Sound Barrier Wall”
Structural Steel <sup>4</sup>	Y	N	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	N	Article 1072-8

#### FOOTNOTES

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

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**GEOTECHNICAL SUBMITTALS**

<b>Submittal</b>	<b>Submittals Required by Geotechnical Engineering Unit</b>	<b>Submittals Required by Structures Management Unit</b>	<b>Contract Reference Requiring Submittal <sup>1</sup></b>
Drilled Pier Construction Plans <sup>2</sup>	Y	N	Subarticle 411-3(A)
Crosshole Sonic Logging (CSL) Reports <sup>2</sup>	Y	N	Subarticle 411-5(A)(2)
Pile Driving Equipment Data Forms <sup>2,3</sup>	Y	N	Subarticle 450-3(D)(2)
Pile Driving Analyzer (PDA) Reports <sup>2</sup>	Y	N	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”

**FOOTNOTES**

- References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Subarticles refer to the *Standard Specifications*.
- Submit one hard copy of submittal to the Engineer. Submit a second copy of submittal electronically (PDF via email), US mail or other delivery service to the appropriate Geotechnical Engineering Unit regional office. Electronic submission is preferred.
- The Pile Driving Equipment Data Form is available from:  
[https://connect.ncdot.gov/resources/Geological/Pages/Geotech\\_Forms\\_Details.aspx](https://connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx)  
See second page of form for submittal instructions.
- Electronic copy of submittal is required. See referenced provision.



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

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**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.

**ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES****(12-30-15)****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 HHCU. Reference the North Carolina Administrative Code, Chapter 10A, Subchapter 41C, Article .0605 for directives on revision submissions.

Contact Information

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

**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

Forsyth County

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

Mecklenburg County

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

**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>

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**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.

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**36" PRESTRESSED CONCRETE FLORIDA I-BEAMS**

**(SPECIAL)**

The Contractor shall provide girders in accordance with the plans and standard specifications. Measurement and Payment will be for the actual number of linear feet of prestressed concrete girders.

Payment will be made under:

36" Prestressed Concrete Florida I-Beams..... Linear Feet

**PROJECT SPECIAL PROVISION**

(10-18-95) (Rev. 3-21-17)

Z-1a

**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.

<b><u>PERMIT</u></b>	<b><u>AUTHORITY GRANTING THE PERMIT</u></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

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.**



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

October 25, 2022

MEMORANDUM TO: Mr. Brett D. Canipe, P.E.  
Division 10 Division Engineer

FROM: Michael Turchy, ECAP Group Leader  
Environmental Analysis Unit

SUBJECT: Environmental Permits for the Replacement of Bridges 57 and 59 on  
US 29/601 over Irish Buffalo Creek in Cabarrus County, Division 10,  
WBS No. 45762.1.1,  
**TIP: B-5808**

Please find enclosed the following permits for this project:

Agency	Permit Type	Permit Expiration
US Army Corps of Engineers Section 404 Clean Water Act Permit	Regional General Permit 50	May 25, 2025
NC Division of Water Resources Section 401 Water Quality Certification	General Certification No. 4135 [RGP50]	May 25, 2025

Please feel free to contact our Unit for any questions.

ec:  
NCDOT Permit Website (<https://xfer.services.ncdot.gov/pdea/PermIssued/>)



U.S. ARMY CORPS OF ENGINEERS  
WILMINGTON DISTRICT

Action Id. SAW-2022-00366

County: Cabarrus U.S.G.S. Quad: Concord

**GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION**

Permittee: Philip Harris, III, P.E.  
Project Development and Environmental Analysis Branch  
North Carolina Department of Transportation  
1598 Mail Service Center  
Raleigh, NC, 27699-1598  
Telephone: 919.707.6108

Size (acres) N/A Nearest Town Concord  
Nearest Waterway Irish Buffalo Creek River Basin Upper Pee Dee  
USGS HUC 03040105 Coordinates Latitude: 34.\*\*; Longitude: -78.\*\*  
Location description: Bridge Nos. 57 and 59 over Irish Buffalo Creek, on US 29, Concord Parkway, in Concord, NC

Description of projects area and activity: TIP B-5808; bridge replacement; tributary impacts: 265 linear feet of bank stabilization; 10 additional lf of dewatering.

Applicable Law:  Section 404 (Clean Water Act, 33 USC 1344);  Section 10 (Rivers and Harbors Act, 33 USC 403)

Authorization: Regional General Permit Number: 50 (NCDOT -Bridge, Road Widening and Interchanges)  
**SEE ATTACHED RGP GENERAL AND 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 February 15, 2022. 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.

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 Eric Alsmeyer at (919) 554-4884 X 23 or Eric.C.Alsmeier@usace.army.mil.

Corps Regulatory Official: Monte Matthews Date: 2022.02.23  
14:24:26 -05'00' Date: February 23, 2022  
Expiration Date of Verification: May 25, 2025

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 [http://corpsmapu.usace.army.mil/cm\\_apex/f?p=136:4:0](http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0).

SAW-2019-00705

Action ID Number: SAW-2022-00366

County: Cabarrus County

Permittee: NCDOT

Project Name: NCDOT B-5808 US29 ConcordParkway BRs57&59 Cabarrus Div10

Date Verification Issued: February 23, 2022

Project Manager: Eric Alsmeyer

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: Eric Alsmeyer  
Raleigh Regulatory Field Office  
3331 Heritage Trade Drive, Suite 105  
Wake Forest, NC 27587  
919.554.4884, Ext. 23

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

# P-5

DEPARTMENT OF THE ARMY  
Wilmington District, Corps of Engineers  
69 Darlington Avenue  
Wilmington, North Carolina 28403-1343

Regional General Permit No. SAW-2019-02350 (RGP 50)  
Name of Permittee: North Carolina Department of Transportation  
Effective Date: May 26, 2020  
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 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 MAINTENANCE, REPAIR, AND CONSTRUCTION PROJECTS CONDUCTED BY THE VARIOUS DIVISIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT), INCLUDING THE NCDOT DIVISION OF HIGHWAYS, RAIL, BICYCLE/PEDESTRIAN, ETC.**

### Activities authorized by this RGP:

- a. (1) Road widening, and/or (2) construction, maintenance, and/or repair of bridges. For bridge projects, work can include the approaches.
- b. (1) Improvement of interchanges or intersections, or (2) construction of interchanges or intersections over, or on, existing roads.

**Full descriptions/terms of “a” and “b”:**

**a. (1) Road widening, and/or (2) construction, maintenance, and/or repair of bridges. For bridge projects, work can include the approaches.**

Permanent impacts that result in a loss of waters of the U.S., excluding stream relocation(s), must be less than or equal to 500 linear feet (lf) of stream and/or one (1) acre of wetland/open water for each single and complete linear project.

Single and complete linear project. As noted in 33 CFR 330.2(i), for linear projects, the “single and complete project” (i.e., single and complete crossing) will apply to each crossing of a separate water of the U.S. (i.e., single waterbody) at that location; except that for linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. 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 crossing of such features cannot be considered separately.

Also authorized under “a”: (1) stream relocation(s) and (2) temporary impacts, such as those from temporary structures, fills, dewatering, and other work necessary to conduct the activities listed under “a”. Stream relocation(s) and temporary impacts will be evaluated independently and are not limited to the permanent loss limits of 500 lf of stream and/or 1 acre of wetland/open water (i.e., stream relocations and/or temporary impacts do not factor into these limits) for each single and complete linear project; however, if the Corps determines that the proposed stream relocation(s) and/or temporary impacts are of such magnitude that they cannot be authorized under this section (“a”) of RGP 50, even if the permanent losses from road widening, and/or construction, maintenance, and repair of bridges do not exceed the impact limits for this section (“a”) of RGP 50, an Individual Permit will be required.

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.

**b. (1) Improvement of interchanges or intersections, or (2) construction of interchanges or intersections, over or, on existing roads.**

For activities authorized under “b”, the limits for permanent impacts that result in a loss of waters of the U.S. depend on the location of the impacts, as described below:

- In the coastal plain of North Carolina (both inner coastal plain and outer coastal plain) - permanent impacts that result in a loss of waters of the U.S., excluding stream relocation(s), must be less than or equal to 1,000 lf of stream and/or 3 acres of wetland/open water for the entire interchange or intersection project.

- All other areas of North Carolina - permanent impacts that result in a loss of waters of the U.S., excluding stream relocation(s), must be less than or equal to 1,000 lf of stream and/or 2 acres of wetland/open water for the entire interchange or intersection project.

Coastal plain – See [http://saw-reg.usace.army.mil/JD/LRRs\\_PandT.pdf](http://saw-reg.usace.army.mil/JD/LRRs_PandT.pdf) for Land Resource Areas LRRP (inner coastal plain) and LRRT (outer coastal plain).

When proposed impacts to waters of the U.S. are located both inside AND outside of the coastal plain, the Corps will determine, based on the location(s) of proposed impacts to waters of the U.S., if a project is a “coastal plain project”.

Single and complete project. For permitting purposes, each interchange or intersection is considered to be one single and complete project. For example, an interchange project cannot result in a permanent loss (excluding stream relocation), of (1) greater than 1,000 lf of stream and/or 3 acres of wetland/open water in the coastal plain OR (2) greater than 1,000 lf of stream and/or 2 acres of wetland/open water in all other areas of North Carolina.

Approach fills may be considered to be part of an interchange or intersection project if the Corps determines that inclusion of these areas meet the terms of this section (“b”) of RGP 50. Early coordination with the Corps is encouraged.

Intersections, regardless of the mode of transportation (e.g., railroad, other roadways, etc.), may be at grade or grade separated if the Corps determines that the project would meet the terms of this section (“b”) of RGP 50. Early coordination with the Corps is encouraged.

Also authorized under “b”: (1) stream relocation(s) and (2) temporary impacts, such as those from temporary structures, fills, dewatering, and other work necessary to conduct the activities listed under “b”. Stream relocation(s) and temporary impacts will be evaluated independently and are not limited to the permanent loss limits of (1) 1,000 lf of stream and/or 3 acres of wetland/open water in the coastal plain OR (2) 1,000 lf of stream and/or 2 acres of wetland/open water in all other areas of North Carolina (i.e., stream relocations and/or temporary impacts do not factor into these limits) for each interchange or intersection project; however, if the Corps determines that the proposed stream relocation(s) and/or temporary impacts are of such magnitude that they cannot be authorized under this section (“b”) of RGP 50, even if the permanent losses from improvement of interchanges or intersections, or construction of interchanges or intersections over, or on, existing roads do not exceed the impact limits for this section (“b”) of RGP 50, an Individual Permit will be required.

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 will not impact 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 will impact 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.

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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.

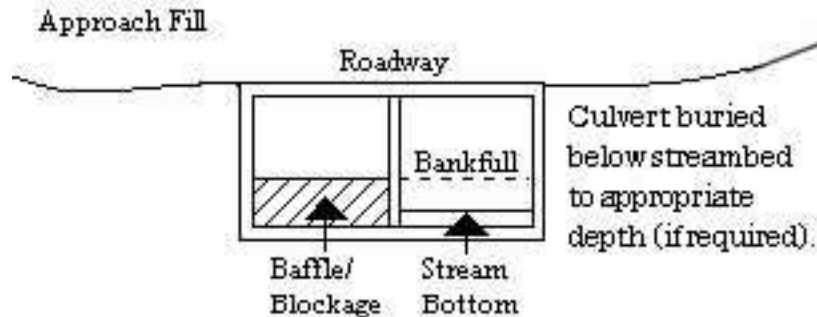
(4) Appropriate actions to prevent destabilization of the channel and head cutting upstream shall be incorporated in the design and placement of culverts/pipes.

(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

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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. Discharges into waters of the U.S. designated 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:

<b>NC Division of Marine Fisheries</b>	<b>North Carolina Wildlife Resources Commission</b>
<b>3441 Arendell Street</b>	<b>Habitat Conservation Division</b>
<b>Morehead City, NC 28557</b>	<b>1721 Mail Service Center</b>
<b>Telephone 252-726-7021</b>	<b>Raleigh, NC 27699-1721</b>
<b>or 800-682-2632</b>	<b>Telephone (919) 707-0220</b>

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.

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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 on-site 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.

l. 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 50 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 not 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 descriptions/terms of “a” and “b” on pages 2 and 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

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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 50 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.

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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.

l. 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 federally-listed 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 50 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 50. 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 50. 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 50 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 in 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 50, 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](mailto: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**

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901303  
Date: 2020.05.26 14:50:28  
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Robert J. Clark  
Colonel, U. S. Army  
District Commander

ROY COOPER  
*Governor*  
 ELIZABETH S. BISER  
*Secretary*  
 RICHARD E. ROGERS, JR.  
*Director*



April 6, 2022

DWR # 20210446  
 Cabarrus County

Mr. Philip S. Harris, III, P.E., CPM  
 Environmental Analysis Unit Head  
 1598 Mail Service Center  
 Raleigh, NC 27699-1598

**Subject: APPROVAL OF 401 WATER QUALITY CERTIFICATION WITH ADDITIONAL CONDITIONS**

NCDOT B-5808, Cabarrus County  
 Irish Buffalo Creek [Yadkin-PeeDee, 13-17-9-(2), Rocky River, Class C, Impaired]

Dear Mr. Harris:

You have our approval for the impacts listed below for the purpose described in your application dated February 16, 2022, received by the Division of Water Resources (Division) February 16, 2022 and payment received on the same day. These impacts are covered by the attached Water Quality General Certification Number 4135 and the conditions listed below. This certification is associated with the use of Regional General Permit Number 201902350 once it is issued to you by the U.S. Army Corps of Engineers. Please note that you are required by (but not limited to) Sediment and Erosion Control, Non-Discharge, and Water Supply Watershed regulations. The Division has determined that the proposed project will comply with water quality requirements provided that you adhere to the conditions listed in the enclosed certification and the additional conditions itemized below. The following proposed impacts are hereby approved. No other impacts are approved, including incidental impacts. [15A NCAC 02H .0506(b)]

**Stream Impacts in the Yadkin-PeeDee River Basin**

Site	Bank Stabilization on a Perennial Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
1	265				265	0
1 (dewatering)				10	10	0
<b>Total</b>					<b>275</b>	<b>0</b>

**Total Stream Impact for Project: 275 linear feet.**



This approval is for the purpose and design described in your application. The plans and specifications for this project are incorporated by reference as part of this Certification. If you change your project, you must notify the Division and you may be required to submit a new application package with the appropriate fee. If the property is sold, the new owner must be given a copy of this Certification and is responsible for complying with all conditions. [15A NCAC 02H .0507(d)(2)].

If you are unable to comply with any of the conditions of the attached Water Quality General Certification or with the additional conditions itemized below, you must notify the DWR Transportation Permitting Branch within 24 hours (or the next business day if a weekend or holiday) from the time the permittee becomes aware of the circumstances.

The permittee shall report to the Mooresville Regional Office any noncompliance with, and/or any violation of, stream or wetland standards [15A NCAC 02B .0200] including but not limited to sediment impacts to streams or wetlands. Information shall be provided orally within 24 hours (or the next business day if a weekend or holiday) from the time the permittee became aware of the non-compliance circumstances.

#### **Additional Conditions:**

1. The NCDOT Division Environmental Officer or Environmental Assistant will conduct a pre-construction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand the potential issues with stream and pipe alignment at the permitted site. NCDWR staff shall be invited to the pre-construction meeting. [15A NCAC 02H.0506(b)(2) and (b)(3)]
2. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species. [15A NCAC 02H .0506(b)(2)]
3. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. To meet the requirements of NCDOT's NPDES permit NCS000250, please refer to the most recent version of the *North Carolina Department of Transportation Stormwater Best Management Practices Toolbox* manual for approved measures. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
4. 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)]
5. No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. This water shall be captured, treated, and disposed of properly. [15A NCAC 02H .0506(b)(3)]
6. 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)]
7. 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)]
8. All portions of the proposed project draining to 303(d) listed watersheds that are impaired due to turbidity shall be designed, constructed, and operated with sediment and erosion control measures that meet Design Standards in Sensitive Watersheds (15A NCAC 4B .0124). However, due to the size of the project, NC DOT shall not be required to meet 15A NCAC 4B .0124(a) regarding the maximum amount of uncovered acres.
9. All portions of the proposed project draining to 303(d) listed watersheds that are impaired due to biological criteria exceedances shall not discharge stormwater directly to surface waters. Stormwater shall be treated





using appropriate best management practices (e.g., vegetated conveyances, constructed wetlands, detention ponds, etc.) prior to discharging to surface waters.

## General Conditions:

1. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]
2. 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]  
*Justification: Surface water quality standards require that conditions of waters be suitable for all best uses (including aquatic life propagation, survival, and maintenance of biological integrity) provided for in state rule and that activities must not cause water pollution that precludes any best use on a short-term or long-term basis.*
3. 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)]
4. 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)]
5. 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)]
- \* 6. 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)]
7. 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)]
8. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream. [15A NCAC 02H.0506(b)(3)]
9. 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)]
10. 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)]



11. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]
12. 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]
13. 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*.
14. 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.
15. 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.
16. 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 Watershed*. [15A NCAC 02H.0506(b)(3) and (c)(3); GC 4135]
17. 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]
18. 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)]
19. 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)]
20. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization, including all non-commercial borrow and waste sites associated with the project, shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]
21. 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.
22. 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)]



- \* 23. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0502(f)]
- 24. Native riparian vegetation (**ex. Salix nigra, Juncus (spp), Carex (spp), et al.**) 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.0231(b)(6)]
- 25. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities. [15A NCAC 02H.0506(b)(3) and (c)(3)]
- 26. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards [15A NCAC 02H.0506(b)(3) and (c)(3):
  - a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
  - b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
  - c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
  - d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
- 27. 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)]

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

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

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

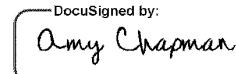
William F. Lane, General Counsel  
Department of Environmental Quality  
1601 Mail Service Center  
Raleigh, NC 27699-1601



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

This letter completes the review of the Division under section 401 of the Clean Water Act and 15A NCAC 02H .0500. Please contact Donna Hood at 704-682-2839 or [donna.hood@ncdenr.gov](mailto:donna.hood@ncdenr.gov) if you have any questions or concerns.

Sincerely,

DocuSigned by:  


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

cc: Eric Alsmeyer, Raleigh Regulatory Field Office (via email)  
Joel Howard, Division 10 Environmental Officer  
Holland Youngman, US Fish and Wildlife Service  
Dave McHenry, NC Wildlife Resources Commission  
Donna Hood, NC Division of Water Resources Mooresville 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 IMPROVEMENTS)**

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

A handwritten signature in black ink, appearing to read 'Linda Culpepper', is written over a solid horizontal line.

*for* Linda Culpepper  
Interim Director

GC4135

**Activities meeting any one (1) of the following thresholds or circumstances require written approval 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 locally-implemented stormwater programs and projects that satisfy state or locally-implemented 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

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<sup>1</sup> e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES

<sup>2</sup> e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program

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- \* 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.



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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]

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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)]
10. 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)]

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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)]

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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 <https://edocs.deq.nc.gov/Forms/Certificate-of-Completion>). [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.

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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.

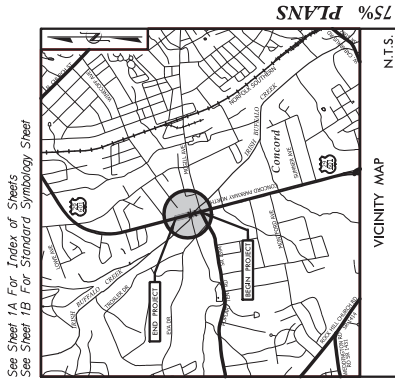
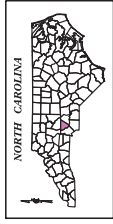
*History Note: Water Quality Certification (WQC) Number 4135 issued December 1, 2017 replaces WQC Number 4088 issued March 3, 2017; WQC 3886 issued March 12, 2012; WQC Number 3820 issued April 6, 2010; WQC Number 3627 issued March 2007; WQC Number 3404 issued March 2003; WQC Number 3375 issued March 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.*

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**CABARRUS COUNTY**

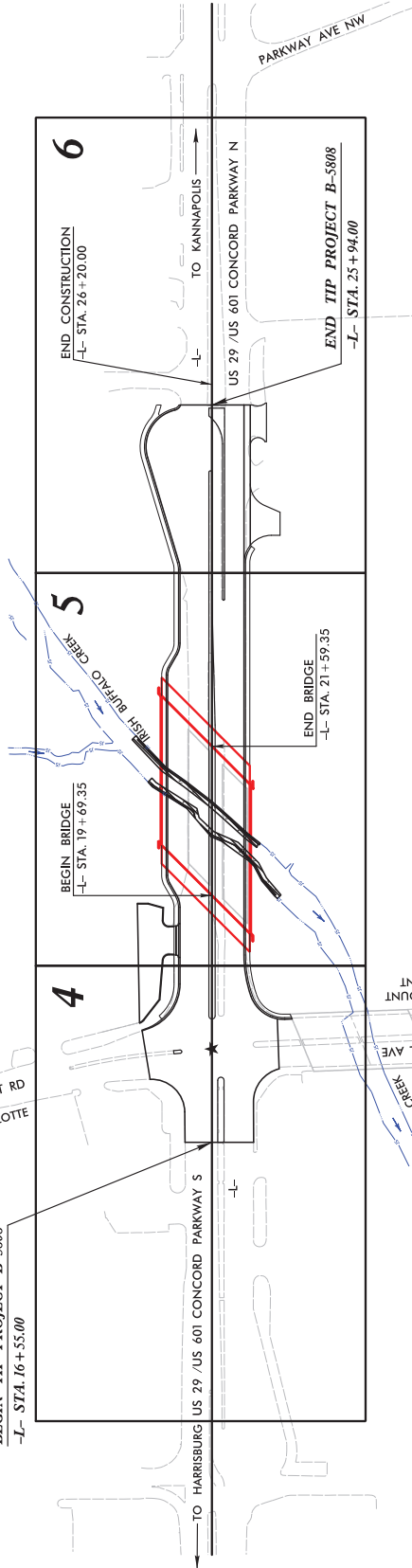
LOCATION: BRIDGES #057 & #059 OVER IRISH BUFFALO CREEK  
ON US 29 /US 601  
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE & SIGNALS

**WETLAND AND SURFACE WATER IMPACTS PERMIT**

STATE	N.C.	STATE PROJECT NUMBER	B-5808	DATE	1
PROJECT NUMBER	45762.1.1	PROJECT NAME	NHP-0029(042)	DESCRIPTION	P.E.
	45762.2.1		NHP-0029(042)		RAW & UTIL.



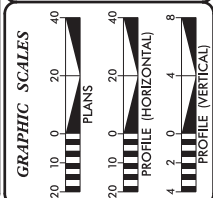
BEGIN TIP PROJECT B-5808  
-L- STA. 16 + 55.00



THIS PROJECT IS WITHIN CONCORD MUNICIPAL BOUNDARIES.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED  
TO THE LIMITS ESTABLISHED BY METHOD II.

PERMIT DRAWING  
SHEET 1 OF 5

INCOMPLETE PLANS  
DO NOT BE USED FOR P.A. ACQUISITION  
OR FOR CONSTRUCTION  
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2022	= 36,820
ADT 2042	= 53,020
K	= 10%
D	= 55%
T	= 4%*
V	= 50 MPH

FUNC. CLASSIFICATION:  
URBAN ARTERIAL  
\* (TTST 1% + DUALS 3%)  
REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-5808	= 0.142 MILES
LENGTH OF STRUCTURE TIP PROJECT B-5808	= 0.016 MILES
TOTAL LENGTH OF TIP PROJECT B-5808	= 0.178 MILES

NCDOT CONTACT: KETH PASCHAL, PE  
Structure Management Unit

PLANS PREPARED FOR THE NCDOT BY:

STV 100 STV Engineers, Inc. 10000 N. W. 10th St., Suite 200 Miami, FL 33176-2000 Tel: 305-447-7200
--

THIS STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
JULY 13, 2021

LETTING DATE:  
MAY 17, 2022

PROJECT ENGINEER  
NIKKI T. HONEYCUTT, PE

PROJECT DESIGNER  
MAAMOOON K. ABDELAZIZ

HYDRAULICS ENGINEER

DESIGNER

PROJECT ENGINEER

PROJECT DESIGNER

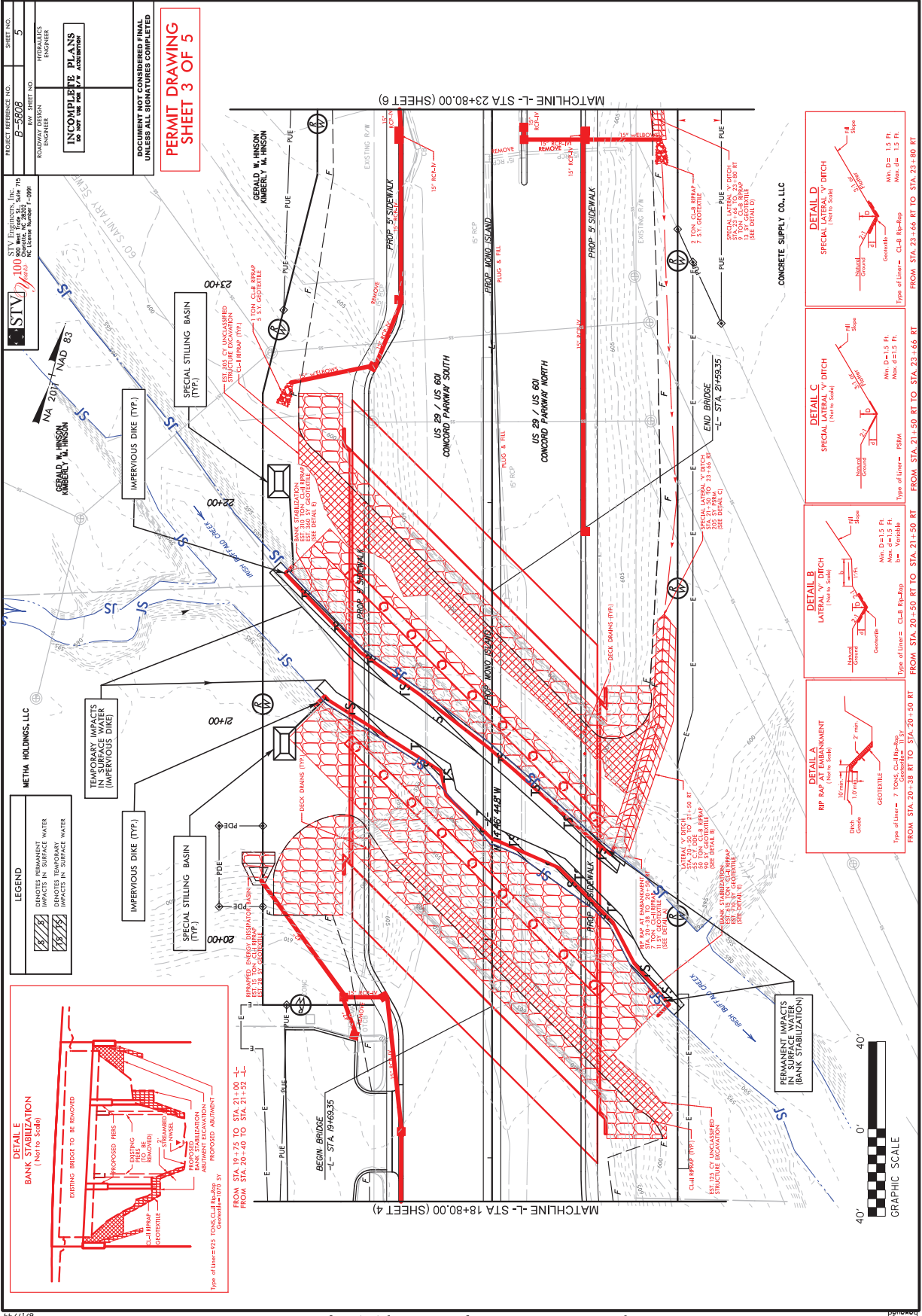


TIP PROJECT: B-5808

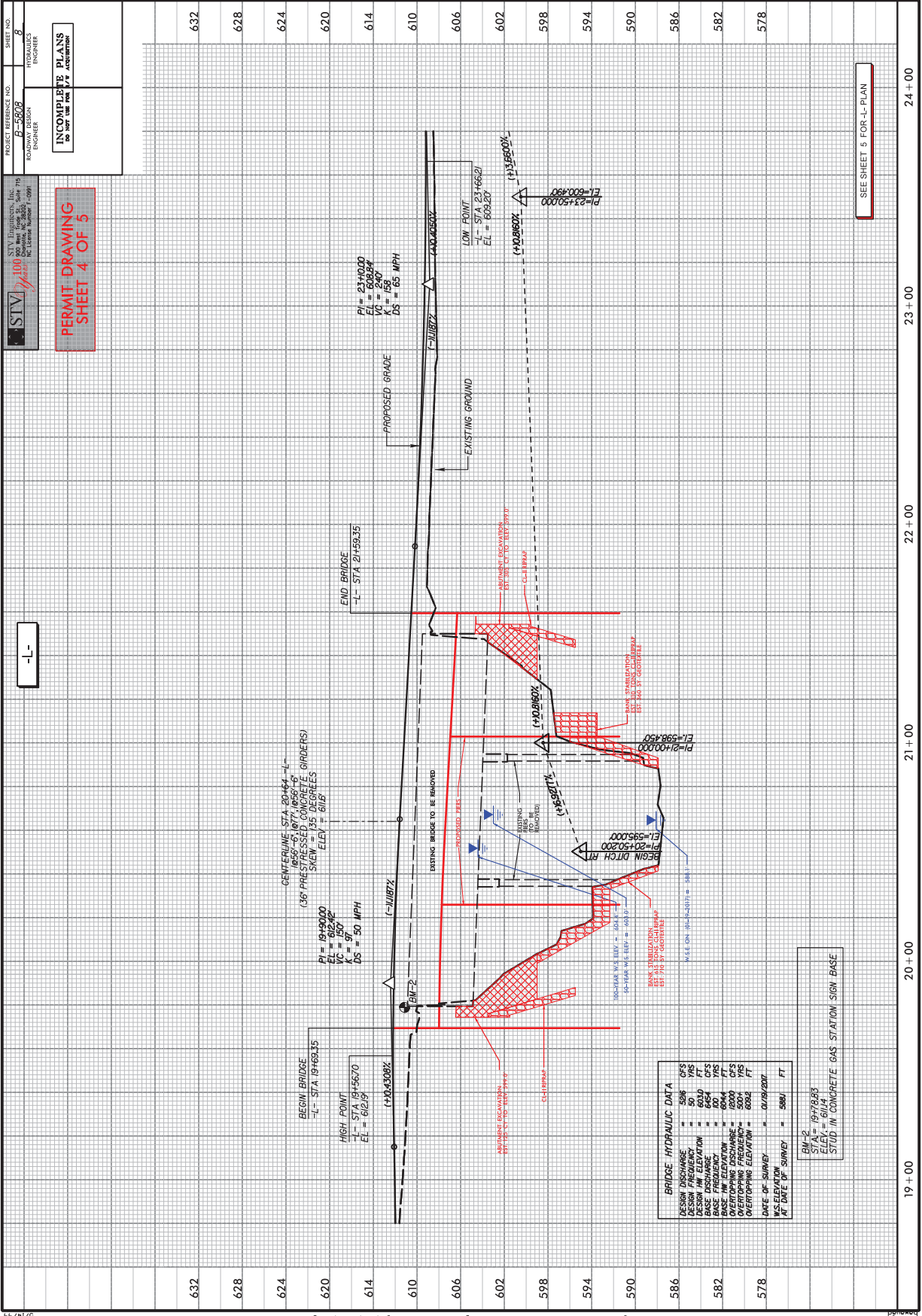
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PROJECT REFERENCE NO. B-5808  
 ROADWAY DESIGNER  
 ENGINEER

STV 100 STV Engineers, Inc.  
 2000 W. 10th St., Suite 715  
 Lincoln, NE 68502  
 INC License Number 1-5991

**PERMIT DRAWING**  
**SHEET 4 OF 5**

L-

INCOMPLETE PLANS  
 DO NOT USE FOR CONSTRUCTION

**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE	= 206 CFS
DESIGN FLOW	= 500 CFS
DESIGN IN ELEVATION	= 50.0 FT
DESIGN OUT ELEVATION	= 50.0 FT
BASE DISCHARGE	= 654 CFS
BASE FLOW	= 604 CFS
OVERTOPPING DISCHARGE	= 1000 CFS
OVERTOPPING FLOW	= 604 CFS
WEIR ELEVATION	= 58.0 FT
DATE OF SURVEY	= 07/19/2017
WS ELEVATION	= 58.0 FT

BM-2  
 STA = 19+783.3  
 ELEV = 61.1  
 STUD. IN CONCRETE GAS STATION SIGN BASE

SEE SHEET 5 FOR L-PLAN

19+00 20+00 21+00 22+00 23+00 24+00

632

628

624

620

614

610

606

602

598

594

590

586

582

578

WETLAND PERMIT IMPACT SUMMARY																	
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS										
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)					
1	19+68.87 / 21+69.05	Bank Stabilization						0.02			0.05	265					
1	19+65.41 / 21+72.68	Impervious Dikes															
<b>TOTALS:</b>								0.02			0.05	265				10	

Notes: Temporary impacts total 275 feet, 265 feet are accounted for within the length of permanent impacts.

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
BRIDGES #057 & #059 OVER IRISH BUFFALO CREEK  
ON US 29 / US 601  
CABARRUS COUNTY  
B-5808

County: CABARRUS

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
<b>ROADWAY ITEMS</b>						
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.	
0003	0028000000-N	SP	TYPE I STANDARD APPROACH FILL STATION ***** (20+64.00-L-)	Lump Sum	L.S.	
0004	0036000000-E	225	UNDERCUT EXCAVATION	450 CY		
0005	0043000000-N	226	GRADING	Lump Sum	L.S.	
0006	0050000000-E	226	SUPPLEMENTARY CLEARING & GRUBBING	1 ACR		
0007	0134000000-E	240	DRAINAGE DITCH EXCAVATION	70 CY		
0008	0195000000-E	265	SELECT GRANULAR MATERIAL	400 CY		
0009	0196000000-E	270	GEOTEXTILE FOR SOIL STABILIZATION	700 SY		
0010	0199000000-E	SP	TEMPORARY SHORING	1,040 SF		
0011	0255000000-E	SP	GENERIC GRADING ITEM HAULING AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL	50 TON		
0012	0318000000-E	300	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	120 TON		
0013	0320000000-E	300	FOUNDATION CONDITIONING GEOTEXTILE	380 SY		
0014	0396000000-E	310	42" RC PIPE CULVERTS, CLASS III	196 LF		
0015	0448200000-E	310	15" RC PIPE CULVERTS, CLASS IV	864 LF		
0016	0576000000-E	310	*** CS PIPE CULVERTS, ***** THICK (12", 0.064")	18 LF		
0017	0582000000-E	310	15" CS PIPE CULVERTS, 0.064" THICK	48 LF		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0018	0636000000-E	310	*** CS PIPE ELBOWS, ***** THICK (15", 0.064")	2 EA		
0019	0995000000-E	340	PIPE REMOVAL	659 LF		
0020	1099500000-E	505	SHALLOW UNDERCUT	100 CY		
0021	1099700000-E	505	CLASS IV SUBGRADE STABILIZATION	200 TON		
0022	1297000000-E	607	MILLING ASPHALT PAVEMENT, **** DEPTH (1-1/2")	1,660 SY		
0023	1330000000-E	607	INCIDENTAL MILLING	930 SY		
0024	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	690 TON		
0025	1503000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C	780 TON		
0026	1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	1,110 TON		
0027	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	140 TON		
0028	2000000000-N	806	RIGHT-OF-WAY MARKERS	28 EA		
0029	2022000000-E	815	SUBDRAIN EXCAVATION	45 CY		
0030	2026000000-E	815	GEOTEXTILE FOR SUBSURFACE DRAINS	200 SY		
0031	2036000000-E	815	SUBDRAIN COARSE AGGREGATE	34 CY		
0032	2044000000-E	815	6" PERFORATED SUBDRAIN PIPE	200 LF		
0033	2070000000-N	815	SUBDRAIN PIPE OUTLET	1 EA		
0034	2077000000-E	815	6" OUTLET PIPE	6 LF		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0035	2190000000-N	828	TEMPORARY STEEL PLATE COVERS FOR MASONRY DRAINAGE STRUCTURE	2 EA		
0036	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	29 EA		
0037	2308000000-E	840	MASONRY DRAINAGE STRUCTURES	18.4 LF		
0038	2364000000-N	840	FRAME WITH TWO GRATES, STD 840.16	6 EA		
0039	2366000000-N	840	FRAME WITH TWO GRATES, STD 840.24	2 EA		
0040	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	8 EA		
0041	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	3 EA		
0042	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	3 EA		
0043	2396000000-N	840	FRAME WITH COVER, STD 840.54	5 EA		
0044	2407000000-N	840	STEEL FRAME WITH TWO GRATES, STD 840.37	4 EA		
0045	2418000000-E	SP	FRAME WITH GRATES, DRIVEWAY DROP INLET	36 LF		
0046	2451000000-N	852	CONCRETE TRANSITIONAL SECTION FOR DROP INLET	6 EA		
0047	2535000000-E	846	*** X *** CONCRETE CURB (9" X 18")	120 LF		
0048	2542000000-E	846	1'-6" CONCRETE CURB & GUTTER	190 LF		
0049	2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	1,340 LF		
0050	2591000000-E	848	4" CONCRETE SIDEWALK	430 SY		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0051	2605000000-N	848	CONCRETE CURB RAMPS	6 EA		
0052	2612000000-E	848	6" CONCRETE DRIVEWAY	40 SY		
0053	2647000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)	360 SY		
0054	2655000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN)	140 SY		
0055	2815000000-N	858	ADJUSTMENT OF DROP INLETS	2 EA		
0056	2860000000-N	859	CONVERT EXISTING CATCH BASIN TO JUNCTION BOX	1 EA		
0057	2905000000-N	859	CONVERT EXISTING DROP INLET TO JUNCTION BOX	3 EA		
0058	3030000000-E	862	STEEL BEAM GUARDRAIL	200 LF		
0059	3045000000-E	862	STEEL BEAM GUARDRAIL, SHOP CURVED	50 LF		
0060	3210000000-N	862	GUARDRAIL END UNITS, TYPE CAT-1	2 EA		
0061	3215000000-N	SP	GUARDRAIL ANCHOR UNITS, TYPE III	4 EA		
0062	3287000000-N	SP	GUARDRAIL END UNITS, TYPE TL-3	1 EA		
0063	3360000000-E	863	REMOVE EXISTING GUARDRAIL	930 LF		
0064	3380000000-E	862	TEMPORARY STEEL BEAM GUARDRAIL	62.5 LF		
0065	3382000000-E	862	TEMPORARY STEEL BEAM GUARDRAIL (SHOP CURVED)	12.5 LF		
0066	3387000000-N	SP	TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE ***** (III)	2 EA		
0067	3389150000-N	SP	TEMPORARY GUARDRAIL END UNITS, TYPE ***** (TL-3)	1 EA		



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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0068	3389500000-N	865	ADDITIONAL GUIDERAIL POSTS	5 EA		
0069	3436000000-N	862	GENERIC GUARDRAIL ITEM TEMPORARY GUARDRAIL END UNITS,TYPE CAT-1	2 EA		
0070	3628000000-E	876	RIP RAP, CLASS I	20 TON		
0071	3635000000-E	876	RIP RAP, CLASS II	940 TON		
0072	3649000000-E	876	RIP RAP, CLASS B	90 TON		
0073	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	1,510 SY		
0074	4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	215 LF		
0075	4102000000-N	904	SIGN ERECTION, TYPE E	1 EA		
0076	4110000000-N	904	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (D)	1 EA		
0077	4110000000-N	904	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (E)	6 EA		
0078	4110000000-N	904	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (F)	3 EA		
0079	4155000000-N	907	DISPOSAL OF SIGN SYSTEM, U- CHANNEL	10 EA		
0080	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	111 SF		
0081	4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	96 SF		
0082	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	44 SF		
0083	4415000000-N	1115	FLASHING ARROW BOARD	1 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0084	4420000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN	2 EA		
0085	4422000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN (SHORT TERM)	2 DAY		
0086	4430000000-N	1130	DRUMS	150 EA		
0087	4445000000-E	1145	BARRICADES (TYPE III)	72 LF		
0088	4447000000-E	SP	PEDESTRIAN CHANNELIZING DEVICES	12 LF		
0089	4465000000-N	1160	TEMPORARY CRASH CUSHIONS	3 EA		
0090	4470000000-N	1160	REMOVE & RESET TEMPORARY CRASH CUSHION	1 EA		
0091	4480000000-N	1165	TMA	1 EA		
0092	4490000000-E	1170	PORTABLE CONCRETE BARRIER (ANCHORED)	1,040 LF		
0093	4510000000-N	1190	LAW ENFORCEMENT	32 HR		
0094	4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	3,143 LF		
0095	4695000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	427 LF		
0096	4709000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS)	439 LF		
0097	4720000000-E	1205	THERMOPLASTIC PAVEMENT MARKING CHARACTER (90 MILS)	8 EA		
0098	4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	15 EA		
0099	4770000000-E	1205	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (I)	912 LF		
0100	4780000000-E	1205	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (8") (I)	141 LF		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0101	4805000000-N	1205	COLD APPLIED PLASTIC PAVEMENT MARKING SYMBOL, TYPE ** (I)	3 EA		
0102	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	4,604 LF		
0103	4820000000-E	1205	PAINT PAVEMENT MARKING LINES (8")	174 LF		
0104	4835000000-E	1205	PAINT PAVEMENT MARKING LINES (24")	36 LF		
0105	5255000000-N	1413	PORTABLE LIGHTING	Lump Sum	L.S.	
0106	5326600000-E	1510	16" WATER LINE	182 LF		
0107	5329000000-E	1510	DUCTILE IRON WATER PIPE FITTINGS	1,910 LB		
0108	5540000000-E	1515	6" VALVE	1 EA		
0109	5666000000-N	1515	FIRE HYDRANT	1 EA		
0110	5673000000-E	1515	FIRE HYDRANT LEG	27 LF		
0111	5691400000-E	1520	10" SANITARY GRAVITY SEWER	167 LF		
0112	5775000000-E	1525	4' DIA UTILITY MANHOLE	2 EA		
0113	5781000000-E	1525	UTILITY MANHOLE WALL 4' DIA	9 LF		
0114	5802000000-E	1530	ABANDON 10" UTILITY PIPE	172 LF		
0115	5810000000-E	1530	ABANDON 16" UTILITY PIPE	196 LF		
0116	5816000000-N	1530	ABANDON UTILITY MANHOLE	1 EA		
0117	5882000000-N	SP	GENERIC UTILITY ITEM 16" INSERT VALVE	1 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0118	5888000000-E	SP	GENERIC UTILITY ITEM 84" TUNNEL LINER PLATE	40 LF		
0119	6000000000-E	1605	TEMPORARY SILT FENCE	3,290 LF		
0120	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	75 TON		
0121	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	140 TON		
0122	6012000000-E	1610	SEDIMENT CONTROL STONE	450 TON		
0123	6015000000-E	1615	TEMPORARY MULCHING	2.5 ACR		
0124	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	200 LB		
0125	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEEDING	1 TON		
0126	6024000000-E	1622	TEMPORARY SLOPE DRAINS	200 LF		
0127	6029000000-E	SP	SAFETY FENCE	320 LF		
0128	6030000000-E	1630	SILT EXCAVATION	200 CY		
0129	6036000000-E	1631	MATTING FOR EROSION CONTROL	7,625 SY		
0130	6037000000-E	SP	COIR FIBER MAT	100 SY		
0131	6038000000-E	SP	PERMANENT SOIL REINFORCEMENT MAT	320 SY		
0132	6042000000-E	1632	1/4" HARDWARE CLOTH	2,050 LF		
0133	6045000000-E	SP	*** TEMPORARY PIPE (15")	55 LF		
0134	6048000000-E	SP	FLOATING TURBIDITY CURTAIN	100 SY		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0135	6071012000-E	SP	COIR FIBER WATTLE	240 LF		
0136	6071020000-E	SP	POLYACRYLAMIDE (PAM)	75 LB		
0137	6084000000-E	1660	SEEDING & MULCHING	3 ACR		
0138	6087000000-E	1660	MOWING	3 ACR		
0139	6090000000-E	1661	SEED FOR REPAIR SEEDING	50 LB		
0140	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	0.25 TON		
0141	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	50 LB		
0142	6108000000-E	1665	FERTILIZER TOPDRESSING	1.5 TON		
0143	6111000000-E	SP	IMPERVIOUS DIKE	440 LF		
0144	6114500000-N	1667	SPECIALIZED HAND MOWING	10 MHR		
0145	6114800000-N	SP	MANUAL LITTER REMOVAL	2 MHR		
0146	6114900000-E	SP	LITTER DISPOSAL	0.1 TON		
0147	6117000000-N	SP	RESPONSE FOR EROSION CONTROL	25 EA		
0148	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	2 EA		
0149	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION DEVICE	15 EA		
0150	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION DEVICE CLEANOUT	45 EA		
0151	7048500000-E	1705	PEDESTRIAN SIGNAL HEAD (16", 1 SECTION W/COUNTDOWN)	2 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0152	7060000000-E	1705	SIGNAL CABLE	1,300 LF		
0153	7120000000-E	1705	VEHICLE SIGNAL HEAD (12", 3 SECTION)	5 EA		
0154	7264000000-E	1710	MESSENGER CABLE (3/8")	260 LF		
0155	7300000000-E	1715	UNPAVED TRENCHING (*****) (1, 2")	30 LF		
0156	7301000000-E	1715	DIRECTIONAL DRILL (*****) (1, 2")	60 LF		
0157	7324000000-N	1716	JUNCTION BOX (STANDARD SIZE)	2 EA		
0158	7372000000-N	1721	GUY ASSEMBLY	2 EA		
0159	7420000000-E	1722	2" RISER WITH WEATHERHEAD	2 EA		
0160	7444000000-E	1725	INDUCTIVE LOOP SAWCUT	270 LF		
0161	7456000000-E	1726	LEAD-IN CABLE (*****) (14-2)	800 LF		
0162	7481000000-N	SP	SITE SURVEY	1 EA		
0163	7481200000-N	SP	LUMINAIRE ARM FOR VIDEO SYSTEM	1 EA		
0164	7481240000-N	SP	CAMERA WITHOUT INTERNAL LOOP EMULATOR PROCESSING UNIT	1 EA		
0165	7481260000-N	SP	EXTERNAL LOOP EMULATOR PROCESSING UNIT	1 EA		
0166	7636000000-N	1745	SIGN FOR SIGNALS	8 EA		
0167	7642100000-N	1743	TYPE I POST WITH FOUNDATION	1 EA		
0168	7642200000-N	1743	TYPE II PEDESTAL WITH FOUNDATION	2 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0191	6070000000-N	1639	SPECIAL STILLING BASINS	4 EA		
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<b>STRUCTURE ITEMS</b>						
0169	8042000000-N	402	REMOVAL OF EXISTING STRUCTURES AT STATION ***** (20+64.00-L-)	Lump Sum	L.S.	
0170	8065000000-N	SP	ASBESTOS ASSESSMENT	Lump Sum	L.S.	
0171	8105560000-E	411	4'-0" DIA DRILLED PIERS IN SOIL	308 LF		
0172	8105660000-E	411	4'-0" DIA DRILLED PIERS NOT IN SOIL	165 LF		
0173	8113000000-N	411	SID INSPECTIONS	1 EA		
0174	8115000000-N	411	CSL TESTING	6 EA		
0175	8121000000-N	412	UNCLASSIFIED STRUCTURE EXCAVATION AT STATION ***** (20+64.00-L-)	Lump Sum	L.S.	
0176	8147000000-E	420	REINFORCED CONCRETE DECK SLAB	21,466.5 SF		
0177	8161000000-E	420	GROOVING BRIDGE FLOORS	24,217 SF		
0178	8182000000-E	420	CLASS A CONCRETE (BRIDGE)	772.1 CY		
0179	8210000000-N	422	BRIDGE APPROACH SLABS, STATION ***** (20+64.00-L-)	Lump Sum	L.S.	
0180	8217000000-E	425	REINFORCING STEEL (BRIDGE)	132,284 LB		
0181	8238000000-E	425	SPIRAL COLUMN REINFORCING STEEL (BRIDGE)	16,600 LB		
0182	8328200000-E	450	PILE DRIVING EQUIPMENT SETUP FOR *** STEEL PILES (HP 12 X 53)	34 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0183	8364000000-E	450	HP 12 X 53 STEEL PILES	750 LF		
0184	8475000000-E	460	TWO BAR METAL RAIL	359.4 LF		
0185	8517000000-E	460	1'-*** X ***** CONCRETE PARAPET (1'-2" X 3'-4 1/4")	391.8 LF		
0186	8608000000-E	876	RIP RAP CLASS II (2'-0" THICK)	665 TON		
0187	8622000000-E	876	GEOTEXTILE FOR DRAINAGE	745 SY		
0188	8657000000-N	430	ELASTOMERIC BEARINGS	Lump Sum	L.S.	
0189	8860000000-N	SP	GENERIC STRUCTURE ITEM STRIP SEAL EXPANSION JOINTS	Lump Sum	L.S.	
0190	8867000000-E	SP	GENERIC STRUCTURE ITEM 36" PRESTRESSED CONCRETE FLORIDA I-BEAM	2,176.3 LF		

1527/Apr03/Q251916.85/D876969202000/E191

Total Amount Of Bid For Entire Project :