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

C205178

CONTRACT AND

CONTRACT BONDS

FOR CONTRACT NO. C205178

WBS DF18314.2075031, DF18314.2075032, DF18314.2075033, DF18314.2075062, DF18314.2075063, DF18314.2075064, DF18314.2075065, DF18314.2075066, DF18314.2075067, DF18314.2075068, DF18314.2075069, DF18314.2075070, DF18314.2075071, DF18314.2075072, DF18314.2075073, DF18314.2075074, DF18314.2075076, DF18314.2075078, DF18314.2075079, DF18314.2075080, DF18314.2075095, DF18314.2075099, DF18314.2075100, DF18314.2075139, DF18314.2075140 HELENE

COUNTY OF POLK
THIS IS THE ROADWAY & STRUCTURE CONTRACT
ROUTE NUMBER SR-1151 LENGTH 4.421 MILES
LOCATION SITES 338, 414-416, 421-441, BW1: SR-1151 FROM 0.23 M N OF SR-1142 (HOBERT COVE RD) TO 8 M N OF SR-1142. W03291

CONTRACTOR SITE DEVELOPMENT CORPORATION
ADDRESS P.O. BOX 397
CLIFFSIDE, NC 28024

BIDS OPENED APRIL 21, 2026

CONTRACT EXECUTION 06/04/2026

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

PROPOSAL

DATE AND TIME OF BID OPENING: **Apr 21, 2026 AT 02:00 PM**

CONTRACT ID	C205178
WBS	DF18314.2075031, DF18314.2075032, DF18314.2075033, DF18314.2075062, DF18314.2075063, DF18314.2075064, DF18314.2075065, DF18314.2075066, DF18314.2075067, DF18314.2075068, DF18314.2075069, DF18314.2075070, DF18314.2075071, DF18314.2075072, DF18314.2075073, DF18314.2075074, DF18314.2075076, DF18314.2075078, DF18314.2075079, DF18314.2075080, DF18314.2075095, DF18314.2075099, DF18314.2075100, DF18314.2075139, DF18314.2075140
FEDERAL-AID NO.	HELENE
COUNTY	POLK
T.I.P NO.	
MILES	4.421
ROUTE NO.	SR-1151
LOCATION	SITES 338, 414-416, 421-441, BW1: SR-1151 FROM 0.23 M N OF SR-1142 (HOBERT COVE RD) TO 8 M N OF SR-1142. W03291
TYPE OF WORK	GRADING, DRAINAGE, PAVING, 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

PROPOSAL FOR THE CONSTRUCTION OF

CONTRACT No. C205178 IN POLK COUNTY, NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION,

RALEIGH, NORTH CAROLINA

The Bidder has carefully examined the location of the proposed work to be known as Contract No. **C205178** 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 *2024 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 Contract No. **C205178** in **Polk 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 2024* 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

Signed by:
Ronald Elton Davenport, Jr.
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03/24/2026

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PROJECT SPECIAL PROVISIONS

GENERAL

HAUL ROADS:
(7-16-24) 105 SP1 G04

Revise the *Standard Specifications* as follows:

Page 1-45, Article 105-15 RESTRICTION OF LOAD LIMITS, line 31, add the following after second sentence of the second paragraph:

At least 30 days prior to use, the Contractor shall notify the Engineer of any public road proposed for use as a haul road for the project.

BUILD AMERICA, BUY AMERICA (BABA):
(11-15-22)(Rev. 4-21-26) 106 SP1 G05 B

Revise the *Standard Specifications* as follows:

Page 1-47 and 1-48, Article 106-1 GENERAL REQUIREMENTS, lines 30-47 and 1-49, delete and replace Article 106-1 with the following:

106-1 MATERIALS AND MANUFACTURING

(A) General Requirements

The Contractor shall furnish materials that conform to all contract requirements, are suitable for their intended use, and are free from defects. All materials used in the work shall meet the requirements of the contract and shall be subject to inspection, test, or rejection by the Engineer. All materials permanently incorporated into the completed work shall be new, unless otherwise specified in the contract or as approved by the Engineer.

The Contractor is responsible for selecting, procuring, and delivering materials of the types and quantities necessary to perform the work and meet contract requirements. Delays in material delivery or quality control do not relieve the Contractor of obligations for schedule or quality.

All materials incorporated into the work shall be approved before use. Approval is based on testing, certification, or both, as required by the contract. Department review or acceptance does not relieve the Contractor of responsibility for material compliance. The Department may inspect, sample, and test materials at any time before, during, or after installation.

Materials shall be handled, stored, and protected to prevent damage, contamination, or deterioration. Materials determined to be defective, damaged, contaminated, or otherwise not in compliance shall be rejected and promptly removed from the project.

To facilitate inspection and testing, the Contractor shall furnish a complete statement of origin for all materials, including certifications or samples when requested. This information

shall be submitted to the Materials and Tests Unit when required by the contract or as directed by the Engineer, in advance of fabrication, shipment, or use to allow for appropriate inspection.

The Contractor shall furnish Safety Data Sheets (SDS) for all paints and hazardous chemicals proposed for use on the project, in accordance with the North Carolina Hazard Communication Standard, 29 CFR 1910.1200 and NCGS § 95-174.

The Contractor shall provide access, equipment, means and assistance for the verification and calibration of any devices used in testing, measurement, or documentation of materials.

If the Contractor proposes to use materials from local deposits not identified in the contract, the Contractor shall be responsible for preliminary sampling, source approval, and production of acceptable material. Preliminary samples shall be furnished at no cost to the Department. If requested in writing, the Department may perform sampling, with costs to be charged to the Contractor as determined by the Engineer.

Sampling or testing by the Department does not constitute pre-approval or acceptance of material. The Contractor remains responsible for ensuring quality and uniformity of all materials produced or delivered, including those from local deposits. The Contractor shall indemnify and hold harmless the Department from any claims, costs, or damages related to the development or use of such sources, including, but not limited to, failure to meet quantity or quality requirements.

Materials covered by Subarticles 106-1(B) and 106-1(C) shall comply with applicable domestic content requirements, including those for iron and steel, construction materials, and manufactured products.

(B) Domestic Material Requirements

Domestic material requirements apply to iron and steel products permanently incorporated into any project in accordance with 23 U.S.C. § 313, 23 CFR 635.410, and NCGS § 136-28.7. Construction materials and manufactured products permanently incorporated into the work are subject to domestic-content requirements only on Federal-aid projects, in accordance with 23 U.S.C. § 313, Build America Buy America Act (IIJA § 70914), 2 CFR 184, and as implemented for the Federal-aid highway program through 23 CFR Part 635.410.

All iron or steel products, construction materials, and manufactured products subject to domestic content requirements shall be of domestic origin and meet the applicable requirements of the contract based on the project's funding source.

Before any materials are delivered to the project, the Contractor shall submit a notarized letter acknowledging their understanding of the domestic material requirements for the specific contract. This acknowledgment is a contract-level affirmation that the Contractor is responsible for ensuring that no iron or steel product, construction material, or manufactured product subject to domestic content requirements is permanently incorporated into the work without the required certification. This acknowledgment does not substitute for product-level certifications from the manufacturer or supplier. The Department reserves the right to deny or recover payment for any material incorporated into the work without valid documentation.

For iron and steel, all manufacturing processes must occur in the United States.

For construction materials, all manufacturing processes must occur in the United States.

For manufactured products, final assembly must occur in the United States.

Before any iron or steel product, construction material, or manufactured product subject to domestic content requirements is eligible for payment, the Contractor shall submit a certification from the manufacturer or supplier confirming compliance with the applicable regulations. A separate certification is required for each shipment or delivery and must clearly identify the items covered, linked to the associated bill of lading, invoice, or packing list.

The Contractor shall ensure that all required certifications from the manufacturer or supplier are obtained and submitted to the Engineer prior to payment for any iron or steel product, construction material, or manufactured product subject to domestic content requirements. The Engineer will retain documentation in accordance with Department procedures. Compliance with domestic material requirements is the responsibility of the Contractor, based on certifications and documentation provided by the manufacturer or supplier.

(C) Material Category Requirements

(1) Iron and Steel Products

Items are considered iron or steel products if they consist wholly or predominantly of iron or steel. Predominantly means the cost of iron or steel components exceeds 50% of the total cost of all product components.

All steel and iron products that are permanently incorporated into the work shall be produced in the United States. This includes any such item that is melted, cast, rolled, formed, shaped, drawn, extruded, forged, fabricated, finished or otherwise processed in the manufacture of the product. Coatings applied to iron and steel products shall also be applied in the United States.

A minimal amount of foreign iron or steel products may be permitted provided the total value of such foreign material, as delivered to the project, does not exceed 0.1% of the total contract cost or $2,500, whichever is greater. Documentation establishing the value of the foreign material shall be submitted when requested. This allowance is intended only for incidental quantities that may arise despite good-faith compliance efforts and may not be used to intentionally procure foreign iron or steel.

Domestically produced high-strength fasteners are required, and foreign-produced high-strength fasteners are not permitted under any circumstance.

Raw materials such as pig iron, processed pelletized iron ore, and reduced iron ore may be sourced internationally; however, all manufacturing processes to produce the final product, including coatings, must occur within the United States.

(2) Construction Materials

Construction materials shall consist of a single, listed material type permanently incorporated into the work as defined in 2 CFR 184.3. The following are classified as construction materials:

(a) Non-ferrous metals (such as aluminum, copper, and zinc);
(b) Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
(c) Glass (including optical glass);
(d) Fiber optic cable (including drop cable);
(e) Optical fiber;
(f) Lumber;
(g) Engineered wood;
(h) Drywall

For construction materials, all manufacturing processes must occur in the United States. If a construction material is combined with other materials, components, or features to form a product with new properties or functions, it shall be classified as a manufactured product.

Minor additions such as binding agents, dyes, or adhesives that do not materially alter the item's properties do not affect classification.

(3) Manufactured Products

Manufactured products are articles, materials, or supplies that are made by combining one or more materials to create a product with new or different properties, functions, or uses. This includes items that incorporate multiple components, materials, or assemblies and cannot be classified as a single listed construction material.

Final assembly of all manufactured products must occur in the United States. Certification must address the product as a whole, including all incorporated components.

Items that meet the definition of construction materials or iron and steel products shall not be reclassified as manufactured products.

(4) Materials Not Subject to Domestic Content Requirements

The following materials are not subject to domestic content requirements and do not require certification, as identified below:

(a) Materials Excluded by Federal Statute or Regulation

The following materials are excluded from domestic content requirements under applicable Federal law or regulation:

(i) Cement and cementitious materials
(ii) Aggregates such as stone, sand, or gravel
(iii) Aggregate binding agents or additives

(b) Materials Not Permanently Incorporated into the Work

Materials that are not permanently incorporated into the completed project are not subject to domestic content requirements. Materials are not permanently incorporated when they are used solely to facilitate construction activities and do not perform an ongoing structural, operational, or functional role after construction is complete. Determinations regarding whether a material is permanently incorporated will be made by the Engineer.

(D) Classification and Clarification of Materials

All items subject to domestic content requirements shall be classified as either an iron or steel product, construction material, manufactured product, or a material not subject to domestic content requirements based on their final form as delivered to the project site. Each item may be classified into only one category and shall not be reclassified to avoid more stringent requirements. Classification of a manufactured product does not relieve the Contractor of compliance with iron and steel domestic manufacturing requirements applicable to embedded iron or steel components when required by Federal law or regulation. When an item's classification is uncertain or does not clearly fall within the listed categories, the Contractor shall submit the item for review by the Engineer. Approval must be obtained prior to procurement or incorporation into the project.

CONTRACT TIME AND LIQUIDATED DAMAGES:
(8-15-00) (Rev. 5-16-23) 108 SP1 G08 A

The date of availability for this contract is **June 1, 2026 for Sites 414, 415, 416, 423, 424, 425, 433 and 434, except August 3, 2026 for Sites 421 and 422, except June 1, 2027 for the remainder of the project**, 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 **October 28, 2029**.

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 **June 1, 2026 for Sites 414, 415, 416, 423, 424, 425, 433 and 434, except August 3, 2026 for Sites 421 and 422, except June 1, 2027 for the remainder of the project.**

The completion date for this intermediate contract time is **May 1, 2029**.

The liquidated damages for this intermediate contract time are **Two Thousand Four Hundred Dollars** (**$ 2,400.00**) 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) (Rev. 6-18-13) 108 SP1 G14 F

The Contractor shall complete the work required of **closing Structure #740047 and replacing both approach slabs** as shown on Sheet **TMP-3** and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the **Friday** at **7:00 PM** the Contractor elects to begin the work.

The completion date for this intermediate contract time is the following **Monday** at **7:00 AM** after the time of availability

The liquidated damages are **Two Hundred Fifty Dollars ($ 250.00)** per hour.

INTERMEDIATE CONTRACT TIME NUMBER 3 AND LIQUIDATED DAMAGES:
(2-20-07) (Rev. 6-18-13) 108 SP1 G14 F

The Contractor shall complete the work required of **closing Structure #740105 and replacing approach slab at End Bent #2** as shown on Sheet **TMP-3** and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the **Friday** at **7:00 PM** the Contractor elects to begin the work.

The completion date for this intermediate contract time is the following **Monday** at **7:00 AM** after the time of availability

The liquidated damages are **Two Hundred Fifty Dollars ($ 250.00)** per hour.

ALTERNATE BIDS:
(12-17-24) 103 SP1 G15

Revise the *Standard Specifications* as follows:

Page 1-22, Subarticle 103-2(A)(7) Paper Bids, lines 39-41, replace the last sentence of this subarticle with the following:

Where the bidder submits a unit price other than zero for more than one item of an authorized alternate, the Department will determine the lowest total price based on the alternate bid and if there are multiple alternates at the lowest total price the alternate will be determined by the Department.

Page 1-23, Subarticle 103-2(B)(5) Electronic Bids, lines 7-9, replace the last sentence of this subarticle with the following:

Where the bidder submits a unit price other than zero for more than one item of an authorized alternate, the Department will determine the lowest total price based on the alternate bid and if there are multiple alternates at the lowest total price the alternate will be determined by the Department.

PERMANENT VEGETATION ESTABLISHMENT:
(2-16-12)(Rev. 1-16-24) 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 *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

Standard Specifications. No additional compensation will be made for maintenance and removal of temporary erosion control items.

DELAY IN RIGHT OF ENTRY:
(7-1-95) (Rev. 7-15-14) 108 SP1 G22

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

Parcel No.	Property Owner	Date
002	David N. Boyer & Jean H. Boyer	8/01/2026
003	Matthew P. Getter & Cara S. Getter	8/01/2026
004	Orrie M. Gurney	8/01/2026
005	TGR Holdings, LLC.	8/01/2026
006	Under The Georgia Sun, LLC	8/01/2026
007	Merrell T. Swaim	8/01/2026
008	Carol S. Slater	8/01/2026
009	Mark Wahl	8/01/2026
010	Finn B. Cullom	8/01/2026
011	Harld F. Whatley & Andrea E. Whatley	8/01/2026
012	David M. Atchley	8/01/2026
013	Sierra M. Allen & Daniel B. Chapman	8/01/2026
014	State of North Carolina	8/01/2026
015	Natalie D. Livingston	8/01/2026

MAJOR CONTRACT ITEMS:
(2-19-02)(Rev. 1-16-24) 104 SP1 G28

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

Line #	Description
9	Rock Embankments
56	Asphalt Conc Base Course, Type B25.0C
137	Shored MSE Retaining Wall
or	
9	Rock Embankments
56	Asphalt Conc Base Course, Type B25.0C
139	Anchored Sheet Pile Retaining Walls
140	Shored MSE Retaining Wall

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

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

Line #	**Description**
76-83	Guardrail
88-90	Signing
98	Long-Life Pavement Markings
99-124, 126-132	Erosion Control
125, 151	Reforestation

FUEL PRICE ADJUSTMENT:
(11-15-05)(Rev. 1-16-24) 109-8 SP1 G43

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

The base index price for DIESEL #2 FUEL is **$ 2.6007** per gallon. Where any of the following are included as pay items in the contract, they will be eligible for fuel price adjustment.

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

Description	**Units**	**Fuel Usage Factor Diesel**
Unclassified Excavation	Gal/CY	0.29
Borrow Excavation	Gal/CY	0.29
Class IV Subgrade Stabilization	Gal/Ton	0.55
Aggregate Base Course	Gal/Ton	0.55
Sub-Ballast	Gal/Ton	0.55
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-%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. 12-20-22) 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 **$ 48.00** per hundredweight.
The bidding index for Category 2 Steel items is **$ 55.81** per hundredweight.
The bidding index for Category 3 Steel items is **$ 75.00** per hundredweight.
The bidding index for Category 4 Steel items is **$ 50.26** per hundredweight.
The bidding index for Category 5 Steel items is **$ 57.44** per hundredweight.
The bidding index for Category 6 Steel items is **$ 66.87** per hundredweight.
The bidding index for Category 7 Steel items is **$ 50.10** per hundredweight.

The bidding index represents a selling price of steel based on Fastmarkets data for the month of **February 2026**.

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

BI = Bidding Index. - in Dollars ($) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.

Product Relationship Table

Steel Product (Title)	BI, MI*	Adjustment Date for MI	Category
Reinforcing Steel, Bridge 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

* BI and MI are in converted units of Dollars per Hundredweight ($/CWT)

** Material Received Date is defined as the date the materials are received on the project site. If a material prepayment is made for a Category 4-6 item, the Adjustment Date to be used will be the date of the prepayment request instead of the Materials Received Date.

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

Submittal Requirements

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

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

https://connect.ncdot.gov/projects/construction/Construction%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 Engineers decision:
      1. Department established weights of steel/iron by contract pay item per pay unit;
      2. Approved Shop Drawings;
      3. Verified Shipping Documents;
      4. Contract Plans;
      5. Standard Drawing Sheets;
      6. Industry Standards (i.e., AISC Manual of Steel Construction, AWWA Standards, etc.); and
      7. Manufacture's data.
   ii. Any item requiring approved shop drawings shall have the weights of steel calculated and shown on the shop drawings or submitted and certified separately by the fabricator.
c. The date the steel product, subject to adjustment, was shipped from the producing mill (Categories 1-3), received on the project (Categories 4-6), or casting date (Category 7).

Step 2 (Monthly Calculator Spreadsheet)

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

1) Completed NCDOT Steel Price Adjustment Calculator Spreadsheet, summarizing all the steel submittal packages (Form SPA-2) actually incorporated into the completed work in the given month.
   a. Contract Number
   b. Bidding Index Reference Month
   c. Contract Completion Date or Revised Completion Date
   d. County, Route, and Project TIP information

e. Item Number
f. Line-Item Description
g. Submittal Number from Form SPA-2
h. Adjustment date
i. Pounds of Steel

2) An affidavit signed by the Contractor stating the documentation provided in the NCDOT Steel Price Adjustment Calculator Spreadsheet is true and accurate.

Price Adjustment Conditions

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

https://connect.ncdot.gov/projects/construction/Construction%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:

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

Where;

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

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

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

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

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

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

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

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

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

Extra Work/Force Account:

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

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

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)	-DFEB – STA 36+00	12000	December 11, 2021
PDQ Mill	4" Tubular steel (Horizontal legs)	-DFEB – STA 36+00	5900	December 11, 2021
ABC distributing	Various channel & angle shapes (see quote)	-DFEB – STA 36+00	1300	December 11, 2021
	Catwalk assembly	-DFEB – STA 36+00	2000	December 11, 2021
Nucor	Flat plate	-DFEB – STA 36+00	650	December 11, 2021
		Total Pounds of Steel	21,850	

Note: Attach the following supporting documentation to this form.

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

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

Printed Name _____ Signature _____

Price Adjustment Sample Calculation (increase)

Project bid on September 17, 2019

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

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

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

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

The Steel Price Adjustment formula is as follows:

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

Where;

SPA = Steel price adjustment in dollars

BI = Bidding Index – in dollars ($) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.

MI = Mill Shipping Index – in dollars ($) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.

Q = Quantity of steel product, in pounds (lbs.) actually incorporated into the work as documented by the Contractor, or Design Build Team and verified by the Engineer.

BI = $36.12/ CWT

MI = $64.89 / CWT

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

Q = 450,000 lbs.

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

SPA = 0.79651162791* $36.12 *4,500

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

Price Adjustment Sample Calculation (decrease)

Project bid on December 18, 2018

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

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

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

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

The Steel Price Adjustment formula is as follows:

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

Where; SPA = Steel price adjustment in dollars

BI = Bidding Index – in dollars ($) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.

MI = Mill Shipping Index – in dollars ($) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.

Q = Quantity of steel product, in pounds (lbs.) actually incorporated into the work as documented by the Contractor, or Design Build Team and verified by the Engineer.

BI = $46.72/ CWT

MI = $27.03 / CWT

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

Q = 600,000 lbs.

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

SPA = -0.421446917808 * $46.72 *6,000

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

Price Adjustment Sample Calculation (increase)

Project bid on July 16, 2020

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

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

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

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

The Steel Price Adjustment formula is as follows:

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

Where; SPA = Steel price adjustment in dollars

BI = Bidding Index – in dollars ($) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.

MI = Mill Shipping Index – in dollars ($) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.

Q = Quantity of steel product, in pounds (lbs.) actually incorporated into the work as documented by the Contractor, or Design Build Team and verified by the Engineer.

BI = $29.21/ CWT

MI = $43.13 / CWT

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

Q = 103932 lbs.

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

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

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

SCHEDULE OF ESTIMATED COMPLETION PROGRESS:

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

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

	Fiscal Year	Progress (% of Dollar Value)
2026	(7/01/25 - 6/30/26)	**5**% of Total Amount Bid
2027	(7/01/26 - 6/30/27)	**42**% of Total Amount Bid
2028	(7/01/27 - 6/30/28)	**35**% of Total Amount Bid
2029	(7/01/28 - 6/30/29)	**18**% of Total Amount Bid

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

DISADVANTAGED BUSINESS ENTERPRISE:

(10-16-07)(Rev. 10-21-25) 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 owns (or leases) and operates or maintains a factory or establishment that produces on the premises, the materials or supplies obtained by the Contractor. A firm that makes minor modifications to the materials, supplies, articles, or equipment is not a manufacturer.

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

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

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

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

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

Forms and Websites Referenced in this Provision

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

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

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

SAF *Subcontract Approval Form* - Form required for approval to sublet the contract.
https://connect.ncdot.gov/projects/construction/Construction%20Forms/SAF%20Form%20-%20Subcontract%20Approval%20Form%20Revised%2004-19.xlsm

JC-1 *Joint Check Notification Form* - Form and procedures for joint check notification. The form acts as a written joint check agreement among the parties providing full and prompt disclosure of the expected use of joint checks.
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

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

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

DBE Goal

There is NO goal for participation by Disadvantaged Business Enterprises for this contract.

Directory of Transportation Firms (Directory)

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

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

Listing of DBE Subcontractors

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

(A) Electronic Bids

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

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

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

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

(B) Paper Bids

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

(a) Bidders, at the time the bid proposal is submitted, shall submit a listing of *DBE* participation, including the names and addresses on *Listing of DBE Subcontractors* contained elsewhere in the contract documents in order for the bid to be considered responsive. Bidders shall indicate the total dollar value of the DBE participation for the contract.

(b) If bidders have no DBE participation, they shall indicate this on the *Listing of DBE Subcontractors* by entering the word "None" or the number "0." This form shall be completed in its entirety. **Blank forms will not be deemed to represent zero participation**. Bids submitted that do not have DBE participation indicated on the appropriate form will not

be read publicly during the opening of bids. The Department will not consider these bids for award and the proposal will be rejected.

(c) The bidder shall be responsible for ensuring that the DBE is certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the bid-letting, that DBE's participation will not count towards achieving the 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 (2nd and 3rd tier subcontractors).

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

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

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

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

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

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

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

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

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

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

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

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

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

Non-Good Faith Appeal

The 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. The appeal shall be made within 2 business days of notification of the determination of non-good faith.

Counting DBE Participation Toward Meeting DBE Goal

(A) Participation

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

(B) Joint Checks

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

(C) Subcontracts (Non-Trucking)

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

(D) Joint Venture

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

(E) Manufacturer, Regular Dealer, Distributor

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

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

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

(2) With respect to materials or supplies purchased from a DBE, which is neither a manufacturer, regular dealer, nor a distributor count the entire amount of fees or commissions charged that the Department deems to be reasonable, including

transportation charges for the delivery of materials or supplies. Do not count any portion of the cost of the materials and supplies themselves.

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

Commercially Useful Function

(A) DBE Utilization

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

(B) DBE Utilization in Trucking

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

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

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

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

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

(5) The DBE may also subcontract the work to a non-DBE firm, including from an owner-operator. The DBE who subcontracts the work to a non-DBE is entitled to credit for the total value of transportation services provided by the non-DBE subcontractor not to exceed the value of transportation services provided by DBE-owned trucks on the contract. Additional participation by non-DBE subcontractors receives credit only for the fee or commission it receives as a result of the subcontract arrangement. The value of services performed under subcontract agreements between the DBE and the Contractor will not count towards the DBE contract requirement.

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

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

DBE Replacement

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

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

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

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

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

(A) Performance Related Replacement

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

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

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

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

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

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

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

(B) Decertification Replacement

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

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

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

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

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

Changes in the Work

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

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

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

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

Reports and Documentation

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

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

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

Reporting Disadvantaged Business Enterprise Participation

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

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

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

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

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

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

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)(Rev. 3-17-26) 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, NC GS 15A-300*,* American Security Drone Act of 2023 (ASDA), Office of Management and Budget (OMB) Memorandum M-26-02, all FAA rules, regulations and policies and all NCDOT UAS Policies. The required operator certifications include possessing a current Federal Aviation Administration (FAA) Remote Pilot Certificate, as well as operating a UAS registered with the FAA.

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 A

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

MAINTENANCE OF THE PROJECT:
(11-20-07)(Rev. 1-16-24) 104-10 SP1 G125

Revise the *Standard Specifications* as follows:

Page 1-35, Article 104-10 Maintenance of the Project, line 3, 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 1-35, Article 104-10 MAINTENANCE OF THE PROJECT, line 8, 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 1-35, Article 104-10 MAINTENANCE OF THE PROJECT, lines 20-22, 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.

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. 10-15-24) 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 C*ease 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

All work described within this provision and the role of 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. 1-16-24) 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 *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.

NOTES TO CONTRACTOR:

The contractor's attention is directed to the Project Specific Special Condition in the permit. The U.S. Fish and Wildlife Service's (USFWS's) Programmatic Biological (PBO) and Conference Opinion (PCO) and Programmatic Conference Report titled "Five Imperiled Bat Species in Western North Carolina" dated April 1, 2025 document can be found and referenced at this link WNC Bats PBO Div 9-14 (2025).pdf. Within the document there are mandatory terms and conditions to implement reasonable and prudent conservation measures. As an example, on page 9 General Measure 1 notes "Ensure all NCDOT Operators, employees and contractors working in areas of known or presumed bat habitat are aware of all NCDOT environmental commitments, including all applicable conservation measures". While much of the document is not specifically related to the contractor and their construction activities, there are conservation measures the contractor shall be aware of.

*The contractor shall remove trees limited to that specified in the project plans. The contractor shall adhere to the clearing limits and the limits shall be marked in accordance with the NCDOT Best Management Practice for staking clearing limits on a project.

*The contractor shall monitor and modify, as directed by the Engineer, phases or aspects of the construction work to avoid tree removal in excess of what is required to implement the project safely.

(- Per Green Sheet Commitments)*

PROJECT SPECIAL PROVISIONS

ROADWAY

CLEARING AND GRUBBING - METHOD II:

(9-17-02)(Rev. 3-19-24) 200 SP2 R02A

Perform clearing on this project to the limits established by Method - II shown on Standard Drawing No. 200.02 of the *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.

SHOULDER AND FILL SLOPE MATERIAL:

(5-21-02)(Rev. 1-16-24) 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 *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 *Standard Specifications* for *Borrow Excavation*.

SHOULDER RECONSTRUCTION PER SHOULDER MILE:

(1-18-00) (Rev. 12-23-25) 560, 1019 SP1 R07R

Description

Clip high shoulders and reconstruct the earth shoulder in accordance with Standard Drawing No. 560.01 and 560.02 of the *Roadway Standard Drawings,* except that the shoulder width will be established by the typical sections or to the existing shoulder point, whichever is nearer, so that the desired typical is achieved.

Perform shoulder reconstruction immediately following resurfacing operations. When borrow excavation material is used for shoulder reconstruction, perform seeding and mulching upon its completion.

Materials

Use aggregate shoulder borrow (ASB) for all shoulder reconstruction unless the area is designated as a residential lawn, in which case borrow excavation material shall be used. The requirement to use borrow excavation material in residential lawn areas may be specified in the contract or directed by the Engineer.

ASB shall meet the following gradation:

Sieve	Percent Passing
1 1/2"	100
1/2"	55 - 95
#4	35 - 74

Furnish all borrow excavation material necessary for shoulder reconstruction in accordance with Section 1019 of the *Standard Specifications*. All borrow excavation material furnished is subject to testing and may be accepted or rejected by the Engineer.

Construction Methods

Obtain all material from within the project limits or an approved source. Prior to placing aggregate shoulder borrow, scarify the existing shoulder to provide a proper bond and compact the shoulder as directed by the Engineer.

Dispose of excess material generated by shoulder reconstruction in an approved disposal site.

Measurement and Payment

Shoulder Reconstruction will be measured and paid in shoulder miles based on the full length of the map as designated in the contract. If only one side of a map requires reconstruction, the quantity will be equal to the map length. If both sides of a map require reconstruction, the quantity will be equal to twice the map length. If reconstruction is performed on only a portion of a map side, the full map length for that side will still be paid.

The quantity will be determined from the map length shown in the contract and will not be adjusted based on field verification of the actual length of shoulder reconstructed. Shoulder Reconstruction will only be paid for maps, or sides of maps, where the work is performed.

Payment will be made at the contract unit price per shoulder mile and will constitute full compensation for disposal of excess material in an approved disposal site and for all labor, tools, equipment, and incidentals necessary to complete the work in accordance with the contract.

Aggregate Shoulder Borrow will be measured and paid at the contract unit price per ton incorporated into the completed work and accepted by the Engineer. The number of tons is determined by weighing the material in trucks in accordance with Article 106-7. No deductions will be made for any moisture contained in the aggregate at the time of weighing.

Borrow Excavation will be measured and paid in accordance with Section 230 of the *Standard Specifications* for earth material furnished by the Contractor. The requirements of Article 104-5 of the *Standard Specifications* pertaining to revised contract prices for overrunning minor items will not apply to the item of *Borrow Excavation*.

Incidental Stone Base will be measured and paid as provided in Article 545-6 of the *Standard Specifications*. Where *Aggregate Shoulder Borrow* is used, *Incidental Stone Base* will not be required.

Seeding and Mulching will be measured and paid as provided in Article 1660-8 of the *Standard Specifications*.

Where *Aggregate Shoulder Borrow* is used, seeding and mulching will not be required.

Payment will be made under:

Pay Item	**Pay Unit**
Shoulder Reconstruction	Shoulder Mile
Aggregate Shoulder Borrow	Ton

MANUFACTURED QUARRY FINES IN EMBANKMENTS:

(01-17-17)(Rev. 4-16-24) 235 SP02 R72

Description

This specification addresses the use of manufactured quarry fines that are not classified as select materials. The specification allows the Contractor an option, with the approval of the Engineer, to use manufactured quarry fines (MQFs) in embankments as a substitute for conventional borrow material. Furnish and place geotextile for subgrade stabilization in accordance with the contract. Geotextile for subgrade 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.*

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.

In embankments where MQFs are incorporated, geotextile for subgrade stabilization shall be used. Refer to Article 505-2 of the *Standard Specifications* for geotextile type and Article 505-3 of the *Standard Specifications* for the geotextile construction methods.

Measurement and Payment

Borrow Excavation will be measured by truck volume and paid in cubic yards in accordance with Article 230-5 of the *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*.

Geotextile for Subgrade Stabilization will be measured and paid in accordance with Article 505-4 of the *Standard Specifications*. When the pay item for *Geotextile for Subgrade 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.

FLOWABLE FILL:
(9-17-02) (Rev. 1-16-24) 300, 340, 1000, 1530, 1540, 1550 SP3 R30

Description

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

Materials

Refer to Division 10 of the *Standard Specifications*.

Item	Section
Flowable Fill	1000-7

Construction Methods

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

Measurement and Payment

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

Payment will be made under:

Pay Item	Pay Unit
Flowable Fill	Cubic Yard

CORRUGATED ALUMINUM ALLOY CULVERT PIPE:
(9-21-21)(Rev. 1-16-24) 305, 310 SP3 R34

Revise the *Standard Specifications* as follows:

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

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

Page 3-5, Article 305-3, CONSTRUCTION METHODS, add the following after line 26:

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

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

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

Page 3-7, Article 310-6, MEASUREMENT AND PAYMENT, lines 10-11, delete the fourth sentence and replace with the following:

Select bedding and backfill material and coating will be included in the cost of the installed pipe.

BRIDGE APPROACH FILLS:

(10-19-10)(Rev. 1-16-24) 422 SP4 R02

Description

Bridge approach fills consist of backfilling behind bridge end bents with select material or aggregate to support all or part of bridge approach slabs. Install outlets and grade bridge approach fills to drain water through and away from approach fills. Install geotextiles to allow for possible future slab jacking and separate approach fills from embankment fills, natural ground and pavement sections 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 as required. Construct bridge approach fills in accordance with the contract, accepted submittals and bridge approach fill *Roadway Standard Drawings*.

Define bridge approach fill types as follows:

Type 1 Approach Fill – Approach fill for bridge abutment in accordance with *Roadway Standard Drawing* No. 423.01;

Type 1A Approach Fill – Alternate approach fill for integral bridge abutment in accordance with *Roadway Standard Drawing* No. 423.02;

Type 2 Approach Fill – Approach fill for bridge abutment with MSE wall in accordance with *Roadway Standard Drawing* No. 423.03 and

Type 2A Approach Fill – Alternate approach fill for integral bridge abutment with MSE wall in accordance with *Roadway Standard Drawing* No. 423.04.

At the Contractors option, use Type 1A or 2A approach fills instead of Type 1 or 2 approach fills, respectively, for integral bridge abutments. Type 1A and 2A approach fills consists of constructing an approach fill with a temporary geotextile wall before placing all or a portion of

the concrete for the backwall and wing walls of the integral end bent cap. The temporary geotextile wall is designed for a construction surcharge, remains in place and is aligned so the wall face functions as a form for the integral end bent cap backwall and wing walls.

Materials

Refer to Division 10 of the *Standard Specifications*.

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

Provide Type 1 geotextile for separation geotextiles, Type 4a geotextile for under bridge approach slabs and Class B concrete for outlet pads. Use Class V or Class VI select material for Type 1 and 1A approach fills and the same aggregate type approved for the reinforced zone in the accepted MSE wall submittal for Type 2 and 2A approach fills. For MSE wall aggregate, reinforcement and connector materials, see the *Mechanically Stabilized Earth Retaining Walls* provision. Provide outlet pipes and fittings for subsurface drainage materials. Provide 1/4" hardware cloth with 1/4 inch openings constructed from 24 gauge wire.

For temporary geotextile walls, use welded wire reinforcement for welded wire facing and Type 5a geotextile for reinforcement geotextiles. Use Type 5a geotextile with lengths as shown in *Roadway Standard Drawing* No. 423.02 or 423.04.

Construction Methods

Excavate as necessary for approach fills and, if applicable, temporary geotextile walls in accordance with the contract. Ensure limits of approach fills are graded to drain as shown in the bridge approach fill *Roadway Standard Drawings*. For Type 1 and 1A approach fills in embankment fills, place and compact a temporary 1.5:1 (H:V) fill slope in accordance with *Roadway Standard Drawing* No. 423.01 or 423.02 and in accordance with Subarticle 235-3(B) and 235-3(C) of the *Standard Specifications*. Density testing is required within the temporary fill slope and additional more frequent density testing is also required for bridge approach embankments. Wait 3 days before cutting the slope back to complete the approach fill excavation. Use excavated material elsewhere on the project to form embankments, subgrades, or shoulders. If a slope for an approach fill is excavated to flatter than what is required for access or any other reason, that same slope is required for the entire approach fill excavation. Do not backfill overexcavations that extend outside the approach fill limits shown on the *Roadway Standard Drawings* with embankment soils. Instead, expand approach fill limits to include overexcavations.

Notify the Engineer when embankment fill placement and approach fill excavation is complete. Do not place separation geotextiles or aggregate until approach fill dimensions and embankment materials below and outside approach fills are approved.

For Type 2 approach fills, cast MSE wall reinforcement or connectors into end bent cap backwalls within 3 inches 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 Type 2 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 over any MSE wall geosynthetic reinforcement, pull reinforcement taut so that it is in tension and free of kinks, folds, wrinkles or creases.

For Type 1 and 1A approach fills, place pipe sleeves in wing walls so water drains towards outlets. Use sleeves that can withstand wing wall loads. Insert outlet pipes into pipe sleeves to direct water towards outlets. Attach hardware cloth in front of the outlet pipe at the wing. Connect outlet pipes and fittings with solvent cement in accordance with Article 815-3 of the *Standard Specifications* and place outlet pads in accordance with Roadway Standard Drawing No. 815.03.

Attach separation geotextiles to end bent cap backwalls and wing walls with adhesives, tapes or other approved methods. Overlap adjacent geotextiles of the same type at least 18 inches. Cover select material or aggregate with Type 4a geotextile at an elevation 6 inches below the bridge approach slab. Hold geotextiles in place with wire staples or anchor pins as needed. Contact the Engineer when existing or future obstructions such as foundations, pavements, pipes, inlets or utilities will interfere with geotextiles or MSE wall reinforcement.

For Type 1A and 2A approach fills, install temporary geotextile walls as shown in *Roadway Standard Drawing* No. 423.02 or 423.04. At the Contractor's option, construct the bottom portion of integral end bents before temporary geotextile walls as shown in the plans. Erect and set welded wire facing for temporary geotextile walls so facing functions as a form for the integral end bent cap backwall. Place welded wire facing adjacent to each other in the horizontal and vertical directions to completely cover the temporary geotextile wall face. Stagger welded wire facing to create a running bond by centering facing over joints in the row below. Wrap reinforcement geotextiles at the wall face in accordance with *Roadway Standard Drawing* No. 423.02 or 423.04 and cover geotextiles with at least 3 inches of select material or aggregate. Place layers of reinforcement geotextiles within 3 inches of locations shown in *Roadway Standard Drawing* No. 423.02 or 423.04. Install reinforcement geotextiles with the direction shown in *Roadway Standard Drawing* No. 423.02 or 423.04. Orient overlapping seams in reinforcement geotextiles perpendicular to the integral end bent cap backwall. Do not overlap reinforcement geotextiles so seams are parallel to the wall face. Before placing select material or aggregate over reinforcement geotextiles, pull geotextiles taut so they are in tension and free of kinks, folds, wrinkles or creases. Temporary geotextile walls are designed for a surcharge pressure in accordance with *Roadway Standard Drawing* No. 423.02 or 423.04. If loads from construction equipment will be more than what the wall is designed for, contact the Engineer before positioning equipment on top of temporary geotextile walls.

Place select material or aggregate in 6 inch to 8 inch thick lifts. Compact fine aggregate for Type 2 and 2A approach fills in accordance with Subarticle 235-3(C) of the *Standard Specifications* except compact fine aggregate to a density of at least 98%. Compact select material for Type 1 and 1A approach fills and coarse aggregate for Type 2 and 2A approach fills

with at least 4 passes of a trench roller in a direction parallel to the end bent cap backwall. Do not displace or damage geosynthetics or MSE wall reinforcement when placing and compacting select material or aggregate. End dumping directly on geosynthetics is not permitted. Do not operate heavy equipment on geosynthetics until they are covered with at least 8 inches of select material or aggregate. Replace any damaged geosynthetics to the satisfaction of the Engineer. When approach fills extend beyond bridge approach slabs, wrap Type 4a geotextiles over select material or aggregate and back under approach slabs as shown in *Roadway Standard Drawing* No. 423.03 or 423.04.

Measurement and Payment

Type 1 and 1A approach fills will be paid for at the contract lump sum price for *Type 1 Bridge Approach Fill, Station* _____ and Type 2 and 2A approach fills will be paid for at the contract lump sum price for *Type 2 Bridge Approach Fill, Station* _____. 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 wall facing, geotextiles and outlets, compacting backfill and supplying select material, aggregate, geotextiles, pipe sleeves, outlet pipes and pads and any incidentals necessary to construct approach fills behind bridge end bents.

Compensation for the material placed within the temporary 1.5:1 (H:V) fill slopes will be made in accordance with Section 225, 226, or 230 of the *Standard Specifications*. The cost of removal, including excavating, hauling, placement, and compaction of the material elsewhere on or off the project will be included in the contract lump sum price for *Type 1 Bridge Approach Fill, Station* _____.

The contract lump sum price for *Type 2 Bridge 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 Type 2 approach fills behind bridge end bents with MSE abutment walls will be incidental to the contract unit price for *MSE Retaining Wall No.* _____.

Payment will be made under:

Pay Item	**Pay Unit**
Type 1 Bridge Approach Fill, Station _____	Lump Sum
Type 2 Bridge Approach Fill, Station _____	Lump Sum

PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:

(11-21-00)(Rev. 1-16-24) 620 SP6 R25

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

The base price index for asphalt binder for plant mix is **$ 542.50** 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, 2026**.

DELETION OF FINAL SURFACE TESTING REQUIREMENTS:
(1-20-25) 610 SP6 R045A

Revise the *Standard Specifications* as follows:

Pages 6-24 to 6-30, Article 610-13 FINAL SURFACE TESTING AND ACCEPTANCE, delete Article 610-13 in its entirety.

ELECTRONIC TICKETING SYSTEM:
(7-16-24)(Rev. 12-17-24) 1020 SP10 R20

Description

At the contractor's option, the use of an electronic ticketing system for reporting individual and cumulative asphalt material deliveries may be utilized on this project. At the preconstruction conference, the contractor shall notify the Engineer if they intend to utilize an electronic ticketing system for reporting individual and cumulative asphalt material deliveries to the project.

Electronic Ticketing Requirements

a. The electronic ticketing system must be fully integrated with the load read-out system at the plant. The system shall be designed so data inputs from scales cannot be altered by either the Contractor or the Department.

b. Material supplier must test to confirm that ticketing data can be shared from the originating system no less than 30 days prior to project start.

c. After each truck is loaded, ticket data must be electronically captured, and ticket information uploaded via Application Programming Interface (API) to the Department.

d. Obtain security token from NCDOT for access to E-Ticketing portal (to send tickets). To request a Security Key, fill out the below E-Ticketing Security Request Form: https://forms.office.com/g/XnT7QeRtgt

e. Obtain API from NCDOT containing the required e-ticketing data fields and format. Download the API from the NCDOT E-ticketing Webpage: https://connect.ncdot.gov/projects/construction/E-Ticketing/Pages/default.aspx

f. Provide all ticket information in real time and daily summaries to the Department's designated web portal. If the project contains locations with limited cellular service, an alternative course of action must be agreed upon.

g. Electronic ticketing submissions must be sent between the Material Supplier and the Department.

h. The electronic ticket shall contain the following information:

Date
Contract Number
Supplier Name
Contractor Name
Material
JMF
Gross Weight
Tare Weight
Net Weight
Load Number
Cumulative Weight
Truck Number
Weighmaster Certification
Weighmaster Expiration
Weighmaster Name
Facility Name
Plant Certification Number
Ticket Number
Hauling Firm (optional)
Voided Ticket Number (if necessary)
Original Ticket Number (if necessary)
Supplier Revision (If necessary)

The Contractor/supplier can use the electronic ticketing system of their choice to meet the requirements of this provision.

Measurement and Payment

No measurement or payment will be made for utilizing an electronic ticketing system as the cost of such shall be included in the contract price bid for the material being provided.

TIMBER AND LUMBER:

(4-21-26) 235, 866, 1046, 1050, 1082, 1084, 1089, 1540 SP10 R82

Page 2-23, Article 235-2 MATERIALS, line 26, add the following as the third sentence of the fourth paragraph.

Use pressure treated wood bases meeting the requirements of Section 1082.

Page 8-45, Article 866-2 MATERIALS, line 26, replace "1076-7" with "1050-8".

Page 10-73, Subarticle 1046-3(C) Treated Timber Posts, line 8, replace "treated southern pine" with "pressure treated southern pine".

Page 10-76, Subarticle 1050-2(A) General, line 3, replace "Use treated southern pine meeting Articles 1082-2 and 1082-3" with "Use pressure treated southern pine meeting Articles 1082-2 and 1082-3".

Page 10-76, Subarticle 1050-2(A) General, lines 15-16, replace "All round posts" with "All round wood posts and braces".

Page 10-76, Subarticle 1050-2(A) General, lines 19-20, delete the last sentence of the third paragraph and replace with the following:

The pieces shall show at least 3 annual rings per inch and shall be at least 30% summerwood. All timber and lumber shall conform to the material characteristics detailed in the Southern Pine Inspection Bureau (SPIB) grading rules for the designated grade and may bear the mark of an American Lumber Standards Committee (ALSC) accredited agency.

Page 10-177, Article 1082-1 GENERAL, lines 32-33, delete the first sentence of the first paragraph and replace with the following:

Use southern pine timber and lumber graded in accordance with the current grading rules of the SPIB and manufactured by a Department pre-approved producer/supplier. All timber and lumber shall conform to the material characteristics detailed in the SPIB grading rules for No. 1 Dense or Select Structural (Sel Str.) and bear the mark of an ALSC-accredited agency.

Page 10-177 and 10-178, Article 1082-1 GENERAL, lines 38-42 and line 1, delete the second through fourth sentence of the second paragraph and replace with the following:

Use approved inspection companies listed on the Department's pre-approved producer/suppliers list. The inspection agency must perform inspections of preservative treated materials in accordance with AWPA Standard M2. Each item shall bear the brand, hammer mark, ink stamp or tag of the inspection agency to indicate it has been inspected. In lieu of commercial inspection, materials in Section 1082 manufactured by a facility that is audited by an ALSC-accredited agency and bearing the quality mark of that agency shall be acceptable for use. In addition, the Supplier must furnish Type 4 – Certified Test Reports and Type 6 – Supplier's Certifications in accordance with Article 106-3. Type 6 – Supplier's Certifications are required

for each producer/supplier to include any chain of custody changes from the mill to the Department.

Page 10-178, Article 1082-2 UNTREATED TIMBER AND LUMBER, line 7, replace "Dense" with "Grade No. 1 Dense MC19".

Page 10-178, Subarticle 1082-3(A) General, line 13, replace "lumber" with "timber and lumber" and replace "will not" with "with".

Page 10-178, Subarticle 1082-3(B) Bridges, Fender Systems and Piles, lines 22 and 24, replace "Grade No. 1 Dense" with "Grade No. 1 Dense or Select Structural (Sel Str.)".

Page 10-178, Subarticle 1082-3(B) Bridges, Fender Systems and Piles, lines 24-27, delete the third and fourth sentence of the first paragraph and replace with the following:

Timbers for bridges or fender systems that are 5 inches and thicker along the least dimension shall conform to Grade No. 1 Dense or Select Structural (Sel Str.).

Page 10-178, Subarticle 1082-3(B) Bridges, Fender Systems and Piles, line 28, delete and replace the second paragraph with the following:

Timber for piles shall be southern pine and meet the requirements of ASTM D25.

Page 10-178, Subarticle 1082-3(C) Guardrail Posts, Blockouts and related components, lines 33-34, replace "Southern Pine, conforming to Grade No. 1. Rough lumber will be acceptable." with "southern pine, conforming to Grade No. 1 Dense.".

Page 10-178, Subarticle 1082-3(D) Fence Posts and Braces, lines 37-39, delete the first paragraph and replace with the following:

Sawn fence posts and braces shall be southern pine, S4S, and conform to Grade No. 1 Dense.

Page 10-178, Subarticle 1082-3(E) Sign Posts and Battens, lines 42-44, delete the first and second sentence of the first paragraph and replace with the following:

Lumber or timbers for sign posts shall conform to Structural Light Framing, Grade No. 1 Dense.

Page 10-178, Subarticle 1082-3(E) Sign Posts and Battens, line 46, delete the first sentence of the second paragraph.

Page 10-179, Subarticle 1082-3(F) Poles, lines 2-3, delete the first sentence of the first paragraph and replace with the following:

Timber for poles shall be either treated southern pine or coastal douglas-fir and meet the requirements of ANSI O5.1.

Page 10-179, Subarticle 1082-4(A) General, line 8, replace "AASHTO M 133 or AWPA Standards" with "AASHTO M 133 and AWPA Standards".

Page 10-179, Subarticle 1082-4(A) General, lines 14-15, delete the third paragraph.

Page 10-179, Subarticle 1082-4(A) General, line 19, replace “”areas include” with “areas including, but not limited to,”.

Page 10-179, Subarticle 1082-4(B) Timber Preservatives, line 24, replace “AASHTO M 133 or AWPA Standards U1” with “AASHTO M 133 and AWPA Standards U1”.

Page 10-179, Subarticle 1082-4(C) Bridges, Fender Systems and Piles, lines 27-28, replace “AASHTO M-133 or AWPA Standard U1” with “AASHTO M 133 and AWPA Standard U1”.

Page 10-179, Subarticle 1082-4(D) Guardrail Posts, Blockouts and Related Components, lines 32-33, replace “AASHTO M-133 or AWPA Standard U1” with “AASHTO M 133 and AWPA Standard U1”.

Page 10-179, Subarticle 1082-4(E) Fence Posts and Braces, lines 36 and 38, replace “AASHTO M-133 or AWPA Standard U1” with “AASHTO M 133 and AWPA Standard U1”.

Page 10-179, Subarticle 1082-4(E) Fence Posts and Braces, line 39, replace “except require retention of preservative as below” with “Commodity Specification B. Posts, UC4A”.

Page 10-180, Subarticle 1082-4(F) Sign Posts and Battens, line 2, replace “AASHTO M-133 or AWPA Standard U1” with “AASHTO M 133 and AWPA Standard U1”.

Page 10-180, Subarticle 1082-4(G) Poles, line 9, replace “AASHTO M-133 or AWPA Standard U1” with “AASHTO M 133 and AWPA Standard U1”.

Page 10-180, Subarticle 1084-1(A) Treated Timber Pile, line 16-17, delete and replace the first paragraph with the following:

Treated timber piles shall meet the requirements of Section 1082.

Page 10-195, Subarticle 1089-2(A)(1) Work Zone Signs (Stationary), line 44, add the following sentence to the second paragraph:

Pressure treat wood posts in accordance with Section 1082.

Page 15-18, Article 1540-2 MATERIALS, line 8, replace “1082-3” with “1082”.

GLASS BEAD GRADATION FOR PAVEMENT MARKINGS:
(9-17-24) 1087 SP10 R87

Revise the *Standard Specifications* as follows:

Page 10-187, Subarticle 1087-4(C), Gradation & Roundness, after line 6, delete and replace Table 1087-2 with the following:

TABLE 1087-2
GLASS BEAD GRADATION REQUIREMENTS

Sieve Size	Gradation Requirements	
	Minimum	Maximum
Passing #20	100%	--
Retained on #30	5%	15%
Retained on #50	40%	80%
Retained on #80	15%	40%
Passing #80	0%	10%
Retained on #200	0%	5%

WORK ZONE INSTALLER:
(7-20-21)(Rev. 4-21-26) 1101 SP11 R04

Page 11-4, Article 1101-14 WORK ZONE INSTALLER, lines 25-26, delete the first sentence of the first paragraph and replace with the following:

When temporary traffic control consists of more than flagging operations, the Contractor shall 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.

FLAGGERS:
(12-17-24)(Rev. 12-23-25) 1150 SP11 R50

Revise Section 1150 of the *Standard Specification* as follows:

Page 11-13, Article 1150-1, DESCRIPTION, add the following after line 31:

Alternatively, at the discretion of the Contractor, the Contractor may furnish, install, place in operation, repair, maintain, relocate, and remove remotely controlled Automated Flagging Assistance Devices (AFAD) or Temporary Portable Traffic Signal units (PTS units) to assist, supplement, or replace human flaggers for one-lane, two-way traffic maintenance during construction in accordance with this provision and the *Standard Specifications*.

For the purpose of this provision, an "approach" refers to a single lane of traffic moving in one direction toward a point of control or work zone. Flaggers, AFAD and PTS units are only used to control one lane of approaching traffic in a specific direction.

Page 11-13, Article 1150-2, MATERIALS, add the following after line 34:

Provide documentation to the Engineer that the AFAD or PTS units meets or exceeds the requirements of this special provision and is on the NCDOT APL or ITS and Signals QPL.

(A) Automated Flagging Assistance Devices (AFAD)

(1) AFAD General

Cover the automated gate arm with Department approved Type VII, VIII or IX retroreflective sheeting of vertical alternating red and white stripes at 16 inch intervals measured horizontally. When the gate arm is in the down position the minimum vertical aspect of the arm and sheeting shall be 4 inches. The retroreflectorized sheeting shall be on both sides of the gate arm. With the AFAD parked or positioned 2 feet outside or in a location deemed acceptable for the lane being controlled, the gate arm shall reach at least to the center of the lane but shall not exceed the width of the lane being controlled.

Design the system to be fail-safe. Provide a conflict monitor, malfunction monitoring unit, or similar device that monitors for malfunctions and prevents the display of conflicting indications. This system shall be electronic and operated by remote control.

(2) AFAD Type I System: RED/YELLOW

Provide a Red/Yellow AFAD with at least one set of CIRCULAR RED and CIRCULAR YELLOW lenses in a vertical configuration that are 12 inches in diameter. The bottom of the housing (including brackets) shall be at least 7 feet (2.1 meters) above the pavement.

This system is required to have yellow 12 inch aluminum or polycarbonate vehicle signal heads with 10 inch tunnel visors, backplates, and Light Emitting Diode (LED) modules. Provide signal heads, backplates, and LED modules listed on the ITS and Signals QPL available on the Department's website.

Provide an automated gate arm on the AFAD that descends to a down position across the approaching lane of traffic when the **s**teady CIRCULAR RED lens is illuminated and then ascends to an upright position when the flashing CIRCULAR YELLOW lens is illuminated. The automated gate arm is to be designed such that if a motorist pulls underneath the gate arm while lowering, no damage to the vehicle occurs.

A STOP HERE ON RED (R10-6 or R10-6a) sign shall be installed on the right-hand side of the approach at the point at which drivers are expected to stop when the steady CIRCULAR RED lens is illuminated.

To stop traffic, the AFAD shall transition from the flashing CIRCULAR YELLOW lens by initiating a minimum 5 second steadily illuminated CIRCULAR YELLOW lens followed by the CIRCULAR RED lens.

Once the CIRCULAR RED lens is displayed, the system is to have a minimum 2 second delay between the time the steady CIRCULAR RED is displayed and the time the gate arm begins to lower. The maximum delay between CIRCULAR RED and the time the gate arm lowers is 4 seconds. To permit stopped road users to proceed, the AFAD shall display the flashing CIRCULAR YELLOW lens and the gate arm shall be placed in the upright position.

Ensure the system monitors for a lack of yellow or red signal voltage, total loss of indication in any direction, presence of multiple indications on any approach and low power conditions.

Additional sets of CIRCULAR RED and CIRCULAR YELLOW lenses located over the roadway or on the left side of the approach and operated in unison with the primary set, may be used to improve visibility of the AFAD. If the set of lenses is located over any portion of the roadway that can be used by motor vehicles, the bottom of the housing (including brackets) shall be at least 15 feet (4.6 meters) above the pavement.

(3) AFAD Type II System: STOP/SLOW

Provide STOP/SLOW signs that are octagonal in shape, made of rigid material, and at least 36 inch x 36 inch in size. Letters shall be a minimum of 8 inches high. The STOP face shall have a red background with white letters and border.

The SLOW face shall be diamond shaped, orange, or yellow background with black letters and border. Cover both faces in a Department approved Type VII, VIII or IX retroreflective sheeting. The minimum mounting height for the sign faces shall be 7 feet above the pavement to the bottom of the sign.

The AFAD's STOP/SLOW signs shall be supplemented with active conspicuity devices by incorporating a stop beacon (red lens) and a warning beacon (yellow lens). The stop beacon shall be no more than 24 inches above the STOP face. Mount the warning beacon no more than 24 inches above or beside of the SLOW face. Except for the mounting locations, the beacons shall conform to the provisions of Chapter 4L of the MUTCD and have 12 inch signal lenses.

Strobe/flashing lights are an acceptable alternative to flashing beacons. If utilized, they shall be either white or red flashing lights located within the STOP face and white or yellow flashing lights within the SLOW face and conform to the provisions of Chapter 6D of the MUTCD. If used, the lens diameter shall be a minimum of 5 inches with a minimum height of 6 inches. Equip strobes/flashing lights for both dual and quad flash patterns.

Type B warning lights shall not be used in lieu of the beacons or the strobe lights.

The faces of the AFADs STOP/SLOW sign may include louvers. If louvers are used, design the louvers such that the aspect of the sign face to approaching traffic is a full sign face at a distance of 50 feet or greater.

A WAIT ON STOP (R1-7) sign and a GO ON SLOW (R1-8) sign shall be displayed to traffic approaching the AFAD. Position signs on the same support structure as the AFAD. Both signs shall have black legends and borders on white Type III sheeting backgrounds. Each of these signs shall be rectangular in shape and be at least 24 inch x 30 inch size with letters at least 6 inches high.

Provide an automated gate arm on the AFAD that descends to a down position across the approaching lane of traffic when the STOP face is displayed and then ascends to an upright position when the SLOW face is displayed.

The automated gate arm is to be designed such that if a motorist pulls underneath the gate arm while lowering, no damage to the vehicle occurs.

A STOP HERE ON RED (R10-6 or R10-6a) sign shall be installed on the right-hand side of the approach at the point at which drivers are expected to stop when the STOP face is displayed.

When approaching motorists are to proceed, display the SLOW face and the warning beacon or strobes are to flash on the AFAD. When approaching motorists are will be stopped, display the STOP face and the stop beacon or strobes are to flash on the AFAD.

To stop traffic, the AFAD will transition from the SLOW face to the STOP face by initiating a minimum 5 second change cycle. First, the warning beacon is to be steadily illuminated for the change cycle. If strobes are used in lieu of a warning beacon, they are to be placed in the quad flash pattern. At the end of the change cycle, the STOP face is to be displayed with the stop beacon flashing and the warning beacon or strobes are to stop flashing. Once the STOP face is displayed, the system is to have a minimum 2 second delay between the time the STOP face is displayed and the time the gate arm begins to lower. The maximum delay between the time the STOP face is displayed and the time the gate arm lowers is 4 seconds.

To permit stopped road users to proceed, the gate arm shall be placed in the upright position and the AFAD shall display the SLOW face and the warning beacon or strobes are to flash in the dual flash pattern.

Do not flash the stop beacon when the SLOW face is displayed, and do not flash the warning beacon when the STOP face is displayed.

(B) Portable Traffic Signals (PTS) Units

Provide PTS units with at least one set of CIRCULAR RED, CIRCULAR YELLOW, and CIRCULAR GREEN lenses in a vertical configuration that are 12 inch diameter aluminum or polycarbonate vehicle signal heads with 10 inch tunnel visors, backplates, and Light Emitting Diode (LED) modules. All signal heads, tunnel visors, and backplates shall be yellow in color.

The bottom of the housing (including brackets) shall be at least 7 feet above the pavement for single set units. Additional signal heads on units with more than one signal head shall be capable of extending over the travel lane.

Communication Requirements

All PTS units within the signal set up systems shall maintain communication at all times by either hardwire cable or wireless radio link communication. If the hardwire cable communication is utilized the communication cable shall be deployed in a manner that will not intrude in the direct work area of the project or obstruct vehicular and pedestrian traffic. Utilize radio communication with 900MHz frequency band and frequency hopping capability. The radio link communication system shall have a minimum range of 1 mile.

Fault Mode Requirements

Revert PTS units to a flashing red mode upon system default unless otherwise specified by the Engineer. Equip the PTS units with a remote monitoring system. Where cell communication availability exists, the remote monitoring system shall adhere to the remote monitoring system section of this provision.

Remote Monitoring System

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

The running program operating the PTS units shall be always available and viewable through the RMS website. Maintain a history of the RMS operating system in each signal including operating hours and events and the location of the PTS units.

Trailer / Cart

The AFAD and PTS units may be mounted on either a trailer or a moveable cart system.

Finish all exterior metal surfaces with Federal orange enamel per AMS-STD-595, color chip ID# 13538 or 12473 respectively with a minimum paint thickness of 2.5 mils (64 microns).

Design and test the AFAD or PTS units trailer / cart to withstand an 80 MPH wind load while in the operational position. Provide independent certification that the assembly meets the design wind load.

Equip the AFAD or PTS units with leveling jacks capable of stabilizing the unit in a horizontal position when located on slopes 6:1 or flatter.

Equip trailers in compliance with North Carolina Law governing motor vehicles and include a 12-volt trailer lighting system complying *with Federal Motor Carrier Safety Regulations 393*, safety chains and a minimum 2 inch ball hitch.

Provide a minimum 4 inch wide strip of fluorescent conspicuity sheeting retroreflective sheeting to the frame of the trailer. Apply the sheeting to all sides of the trailer. The sheeting shall meet the ASTM requirements of Type VII, VIII or IX.

Power System

Design the systems to operate both with and without an external power source. Furnish transmitters, generators, batteries, controls and all other components necessary to operate the device.

Provide equipment that is solar powered and supplemented with a battery backup system that includes a minimum 110/120 VAC powered on-board charging system capable of powering the unit for 7 continuous days with no solar power. Each unit shall also be capable of being powered by standard 110/120 VAC power sources, if applicable.

Locate batteries and electronic controls in a locked, weather and vandal resistant housings.

Page 11-14, Article 1150-3, CONSTRUCTION METHODS, add the following after line 11:

Flaggers shall have a path to escape an errant approaching vehicle at all times, unimpeded by barrier, guardrail, guiderail, parked vehicles, construction materials, slopes steeper than 2:1, or any other obstruction at all times. If an unimpeded path cannot be maintained, the Contractor shall use AFAD or PTS units in lieu of a flagger.

Provide documentation to the Engineer prior to deploying the device that the AFAD or PTS units operator(s) are qualified flagger(s) that have been properly trained through an NCDOT approved training agency or other NCDOT approved training provider and that the qualified flagger(s) have received manufacturer training to operate that specific device. This training shall include proper installation, remote control operation, central control systems and maintenance of the AFAD or PTS units. The training shall take place off the project site where training conditions are removed from live traffic. The documentation shall include the names of the authorized trainer, the trainees, the device on which they have been trained and the date of the training. Provide updated documentation to the Engineer prior to deploying any additional operators.

Install advance warning signs and operate AFADs in accordance with the attached detail drawings in this provision.

Install advance warning signs and operate PTS units in accordance with *NCDOT Roadway Standard Drawings* No. 1101.02, Sheet 17.

AFAD and PTS units shall only be used in situations where there is only one lane of approaching traffic in the direction to be controlled. **At no time shall an AFAD unit controlling traffic through the work area be placed in an autonomous mode and/or left unattended.**

Signal timing and operation of PTS units shall be field verified and accepted by the Engineer before use.

Do not use AFAD or PTS units in locations where queueing from the AFAD or PTS units will extend to within 150 feet of a signalized intersection or railroad crossing. Do not use AFAD and PTS units as a substitute for or a replacement for a continuously operating temporary traffic control signal as described in Section 6F.84 of the MUTCD.

If used at night, illuminate each AFAD or PTS units as described in Section 6D of the MUTCD.

Provide a complete AFAD or PTS units that is capable of being relocated as traffic conditions demand.

If AFADs or PTS units become inoperative, be prepared at all times to replace the unit with the same type and model of AFAD or PTS units, revert to human flagging operations or terminate all construction activities requiring the use of the AFAD or PTS units until the AFAD or PTS units become operative or qualified human flaggers are available.

When the work requiring the AFAD or PTS units is not pursued for 30 minutes or longer, power off each AFAD or PTS units. Removed the AFAD or PTS units from the travel lane and relocated to a minimum of 5 feet from the edge line. AFAD gate arms shall be in the upright position. Remove all traffic control devices from the road, place two cones by each AFAD or PTS units and all signs associated with the lane closure operation shall be removed or laid down. At the end of each workday, remove all AFADs or PTS units from the roadway and shoulder areas.

Ensure the system's wireless communication links continuously monitor and verify proper transmission and reception of data used to monitor and control each AFAD or PTS units. Ensure ambient mobile or other radio transmissions or adverse weather conditions do not affect the system.

In the event of a loss of communications, immediately display the flashing RED or STOP indication on all AFAD or PTS units.

AFAD Specific Construction Methods

The flagger/operator controlling the AFAD units shall be on the project site at all times. If multiple AFAD units are used, one AFAD unit shall be the Main AFAD unit and all other units shall be remote AFAD units. Ensure that each device meets the physical display and operational characteristics as specified in the MUTCD.

Multiple AFAD units may be controlled with **one** flagger/operator when the AFAD units meet each of the following requirements:

(1) AFAD units are spaced no greater than the manufacturer's recommendations.

(2) Both AFAD units can be seen at the same time from the flagger/operator's position, or the AFAD is operating on its own secure network with malfunction detection and notification to the flagger/operator.

(3) The flagger/operator has an unobstructed view of approaching traffic in both directions from the flagger/operator position or the AFAD is operating on its own secure

network, with cameras that provide the flagger/operator an unobstructed view of approaching traffic from both directions. The flagger/operator may control the AFAD units from a pilot vehicle.

If any of the above requirements are not met, flagger/operator control each AFAD unit.

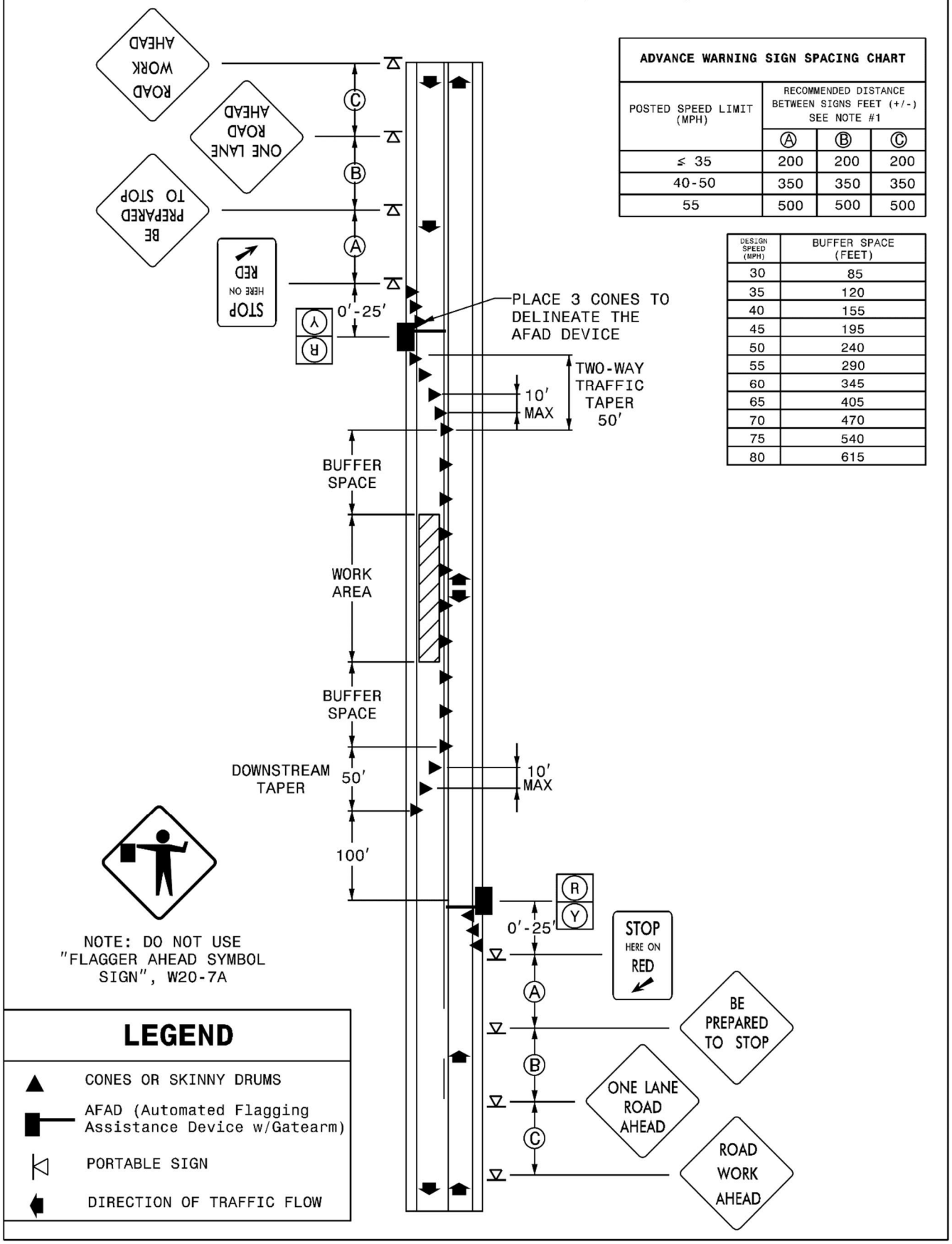
AFAD operators may either control traffic at side streets or driveways between the AFAD units or operate the pilot car while operating the AFAD system if approved by the Engineer. AFAD units must continue to be within clear sight of the operator during these work activities.

Page 11-14, Article 1150-4, MEASUREMENT AND PAYMENT, add the following after line 24:

Each AFAD or PTS unit will be measured and paid for as *Flaggers* paid by day in accordance with Article 1150-4 of the *Standard Specifications*. Where the pay item for *Flaggers* 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 *Temporary Traffic Control* found elsewhere in this contract. Each approach controlled by AFAD or PTS units will be measured and paid as one flagger, irrespective of the number of devices used. If multiple PTS units are required to control a single approach, these units will collectively be considered as replacing one flagger.

No separate measurement or payment will be made for AFAD or PTS unit operators, as the cost of such including their training and operational costs shall be included in the unit or lump sum price for *Flaggers* or *Temporary Traffic Control*. Such price and payment also includes the relocation, maintenance, and removal during repair periods of AFAD or PTS units as well as the signal controller, communication, vehicle detection system, traffic signal software of PTS units and any other incidentals necessary to complete the work.

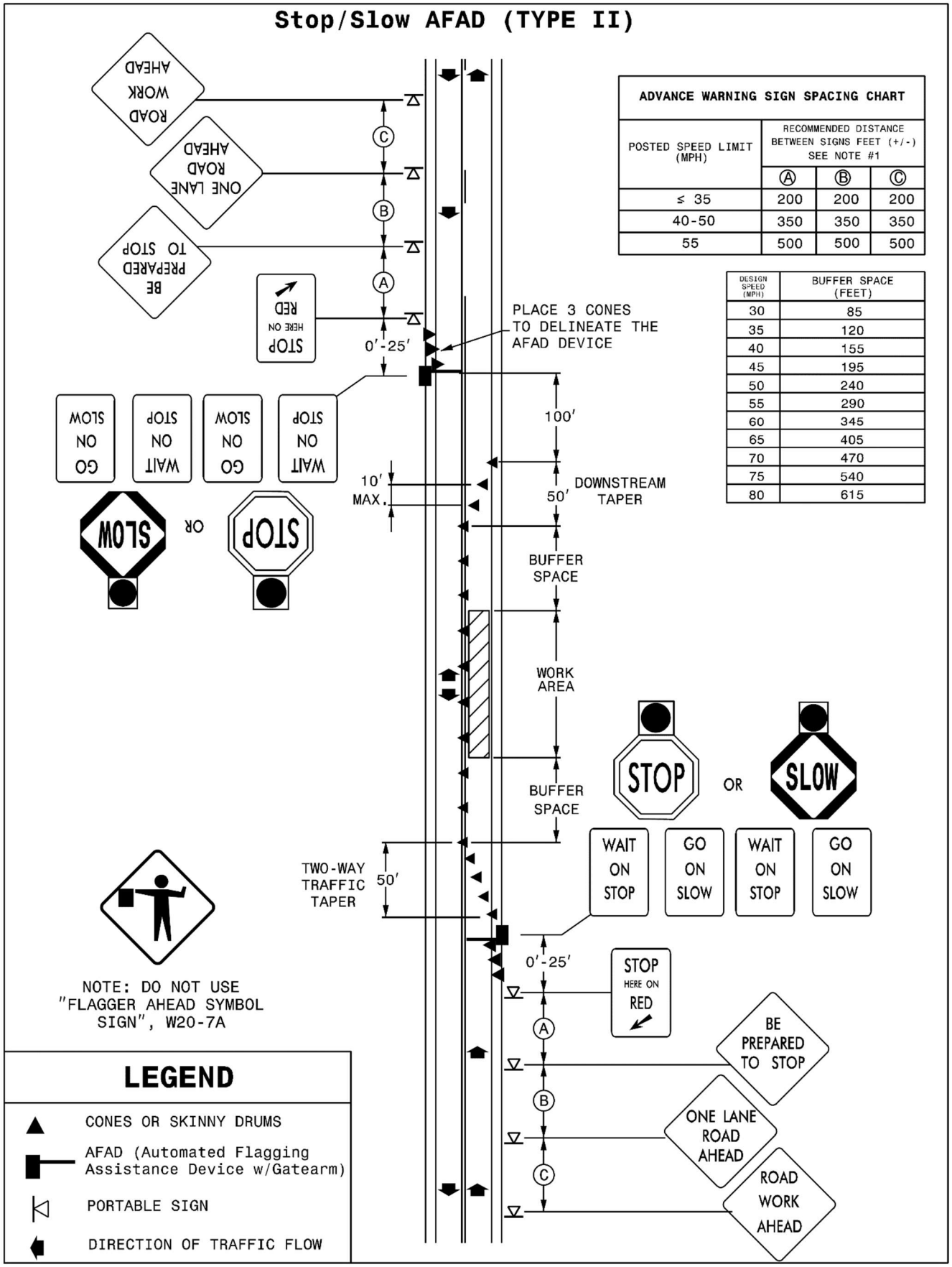
Red/Yellow Lens AFAD (TYPE I)



ADVANCE WARNING SIGN SPACING CHART			
POSTED SPEED LIMIT (MPH)	RECOMMENDED DISTANCE BETWEEN SIGNS FEET (+/-) SEE NOTE #1		
	Ⓐ	Ⓑ	Ⓒ
≤ 35	200	200	200
40-50	350	350	350
55	500	500	500

DESIGN SPEED (MPH)	BUFFER SPACE (FEET)
30	85
35	120
40	155
45	195
50	240
55	290
60	345
65	405
70	470
75	540
80	615

Stop/Slow AFAD (TYPE II)



ADVANCE WARNING SIGN SPACING CHART			
POSTED SPEED LIMIT (MPH)	RECOMMENDED DISTANCE BETWEEN SIGNS FEET (+/-) SEE NOTE #1		
	Ⓐ	Ⓑ	Ⓒ
≤ 35	200	200	200
40-50	350	350	350
55	500	500	500

DESIGN SPEED (MPH)	BUFFER SPACE (FEET)
30	85
35	120
40	155
45	195
50	240
55	290
60	345
65	405
70	470
75	540
80	615

NOTE: DO NOT USE "FLAGGER AHEAD SYMBOL SIGN", W20-7A

LEGEND

- ▲ CONES OR SKINNY DRUMS
- AFAD (Automated Flagging Assistance Device w/Gatearm)
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

PERMANENT SEEDING AND MULCHING:
(7-1-95)(Rev. 1-16-24) 1660 SP16 R02

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

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

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

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

COIR FIBER MAT:
(9-16-25) 1629 SP16 R05

Page 16-9, Article 1629-2 MATERIALS, lines 22-24, delete and replace the last paragraph with the following:

Provide #3 or #4 uncoated reinforcing steel anchors, 24 inches in length, bent into a U-shape with a 4-inch diameter bend and a 4-inch straight leg extending from the bend to catch and secure the coir fiber mat.

WATTLE DEVICES:
(1-1-24)(Rev. 9-16-25) 1642 SP16 R10

Page 16-23, Subarticle 1642-2(B) Wattle, lines 10-12, delete and replace with the following:

(B) Wattle and Wattle Barrier

Wattles shall meet Table 1642-1.

TABLE 1642-1 100% CURLED WOOD (EXCELSIOR) FIBERS - WATTLE	
Property	**Property Value**
Minimum Diameter	12 inches
Minimum Density	2.5 pcf +/- 10%
Net Material	Synthetic
Net Openings	1 inch x 1 inch
Net Configuration	Totally Encased
Minimum Weight	20 lb +/- 10% per 10 foot length

Coir Fiber Wattles shall meet Table 1642-2.

TABLE 1642-2 100% COIR (COCONUT) FIBERS WATTLE	
Property	**Property Value**
Minimum Diameter	12 inches
Minimum Density	3.5 pcf +/- 10%
Net Material	Coir Fiber
Net Openings	2 inch x 2 inch
Net Strength	90 lb
Minimum Weight	2.6 pcf +/- 10%

Wattle Barriers shall meet Table 1642-3.

TABLE 1642-3 100% CURLED WOOD (EXCELSIOR) FIBERS – WATTLE BARRIER	
Property	**Property Value**
Minimum Diameter	18 inches
Minimum Density	2.9 pcf +/- 10%
Net Material	Synthetic
Net Openings	1 inch x 1 inch
Net Configuration	Totally Encased
Minimum Weight	5 pcf +/- 10%

Coir Fiber Wattle Barriers shall meet Table 1642-4.

TABLE 1642-4 100% COIR (COCONUT) FIBERS WATTLE BARRIER	
Property	**Property Value**
Minimum Diameter	18 inches
Minimum Density	5 pcf +/- 10%
Net Material	Coir Fiber
Net Openings	2 inch x 2 inch
Net Strength	90 lb
Minimum Weight	10 pcf +/- 10%

Pages 16-24 & 16-25, Article 1642-5 MEASUREMENT AND PAYMENT, lines 42-47 & lines 1-2, delete and replace with the following:

Wattle 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 *Wattle*.

Coir Fiber Wattles will be measured and paid for by the actual number of linear feet of coir fiber 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*.

Wattle Barrier will be measured and paid as the actual number of linear feet of wattle barrier installed and accepted. Such price and payment will be full compensation for all work covered by this provision, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Wattle Barrier*.

Coir Fiber Wattle Barrier will be measured and paid as the actual number of linear feet of coir fiber wattle barrier installed and accepted. Such price and payment will be full compensation for all work covered by this provision, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Coir Fiber Wattle Barrier*.

Page 16-25, Article 1642-5 MEASUREMENT AND PAYMENT, after line 9, delete and replace "___ Wattle Check" with "Wattle".

Page 16-25, Article 1642-5 MEASUREMENT AND PAYMENT, after line 9, delete and replace "___ Wattle Barrier" with "Wattle Barrier".

Page 16-25, Article 1642-5 MEASUREMENT AND PAYMENT, after line 9, add the following:

Pay Item	**Pay Unit**
Coir Fiber Wattle	Linear Foot
Coir Fiber Wattle Barrier	Linear Foot

STANDARD SPECIAL PROVISION
AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS

(5-20-08)(Rev. 1-16-24) 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 *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:

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

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

Common or Sweet Sundangrass

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

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

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

Centipedegrass
Crownvetch
Pensacola Bahiagrass
Japanese Millet
Reed Canary Grass
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

(1-16-24)(Rev. 4-21-26) Z-4

Revise the *2024 Standard Specifications* as follows:

Division 1

Page 1-1, Article 101-2 ABBREVIATIONS, line 25, replace "American Wood-Preservers' Association" with "American Wood Protection Association".

Page 1-36, Subarticle 104-12(B) Evaluation of Proposals, line 21, replace "Design-Build Unit" with "Alternative Delivery Unit".

Page 1-36, Subarticle 104-12(D) Preliminary Review, line 37, replace "Design-Build Unit" with "Alternative Delivery Unit".

Page 1-37, Subarticle 104-12(E) Final Proposal, line 3, replace "Design-Build Unit" with "Alternative Delivery Unit".

Page 1-37, Subarticle 104-12(F) Design-Build VEPs, line 36, replace "Design-Build Unit" with "Alternative Delivery Unit".

Page 1-38, Subarticle 104-12(G) Modifications, line 1, replace "Design-Build Unit" with "Alternative Delivery Unit".

Division 3

Page 3-5, Article 305-2 MATERIALS, after line 16, replace " 1032-3(A)(7)" with "1032-3" and add the item "Galvanized Corrugated Steel Pipe" with Section "1032-3".

Page 3-6, Article 310-2 MATERIALS, after line 9, add the item "Galvanized Corrugated Steel Pipe" with Section "1032-3".

Division 6

Page 6-15, Article 610-1 DESCRIPTION, line 20, replace "The work includes" with "The work includes, but is not limited to,".

Page 6-15, Article 610-1 DESCRIPTION, line 22, replace "applying the tack coat as specified." with "applying the tack coat in accordance with Section 605.".

Page 6-30, Article 610-14 DENSITY ACCEPTANCE, line 39, replace "QC process." with "QC process in accordance with Section 609.".

Page 6-31, Article 610-16 MEASUREMENT AND PAYMENT, line 13, replace "*Hot Mix Asphalt Pavement*" with "*Asphalt Concrete* _____ *Course, Type* _____".

Page 6-50, Subarticle 661-4(A) Equipment, lines 4-7, replace the first two sentences of the seventh paragraph with the following:

When an erected fixed stringline is utilized for longitudinal profile and cross slope control furnish and erect the necessary guide line for the equipment.

Division 7

Page 7-18, Subarticle 710-10(A) General, lines 7-8, delete “for *Surface Testing Concrete Pavement*” from the last paragraph.

Division 8

Page 8-27, Article 846-1 DESCRIPTION, line 8, delete “4 inch” from the first paragraph.

Division 9

Page 9-17, Article 904-4 MEASUREMENT AND PAYMENT, prior to line 1, replace " Sign Erection, Relocate Type (Ground Mounted)” with “Sign Erection, Relocate Type ___ (Ground Mounted)”.

Division 10

Page 10-51, Article 1024-4 WATER, prior to line 1, delete the “unpopulated blank row” in Table 1024-2 between “Time of set, deviation from control” and “Chloride Ion Content, Max.”.

Page 10-170, Subarticle 1081-1(C) Requirements, line 4, replace "maximum” with “minimum”.

Division 11

Page 11-15, Article 1160-4 MEASUREMENT AND PAYMENT, line 24, replace “Where barrier units are moved more than one” with “Where barrier units are moved more than once”.

Division 15

Page 15-10, Article 1515-4 MEASUREMENT AND PAYMENT, lines 11, replace " All piping” with “All labor, the manhole, other materials, excavation, backfilling, piping”.

Division 16

Page 16-14, Article 1633-5 MEASUREMENT AND PAYMENT, line 20-24 and prior to line 25, delete and replace with the following " *Flocculant* will be measured and paid in accordance with Article 1642-5 applied to the temporary rock silt checks.”

Page 16-3, Article 1609-2 MATERIALS, after line 26, replace "Type 4” with “Type 4a”.

Page 16-25, Article 1644-2 MATERIALS, after line 22, replace "Type 4” with “Type 4a”.

Division 17

Page 17-15, Article 1715-4 MEASUREMENT AND PAYMENT, line 23, delete and replace "1.25" with "1-1/4".

Page 17-15, Article 1715-4 MEASUREMENT AND PAYMENT, line 24, delete and replace ")(1.25" with ", 1-1/4".

STANDARD SPECIAL PROVISION

PLANT AND PEST QUARANTINES

(Imported Fire Ant, Guava Root Knot Nematode, Spongy Moth (formerly known as gypsy moth), Witchweed, Cogon Grass, And Any Other Regulated Noxious Weed or Plant Pest)

(3-18-03)(Rev. 3-18-25) 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/divisions/plant-industry/plant-protection/plant-industry-plant-pest-quarantines* 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 present a hazard of spreading imported fire ant, guava root knot nematode, spongy moth (formerly known as gypsy moth), witchweed, cogon grass, or other regulated noxious weed or plant pest.

STANDARD SPECIAL PROVISION

TITLE VI AND NONDISCRIMINATION:

(6-28-77)(Rev 1/16/2024) Z-6

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 US.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award. In accordance with other related nondiscrimination authorities, bidders and contractors will also not be discriminated against on the grounds of sex, age, disability, low-income level, creed/religion, or limited English proficiency in consideration for an award."

4. Physically incorporate the FHWA-1273, in its entirety, into all subcontracts and subsequent lower tier subcontracts on Federal-aid highway construction contracts only.

5. Provide language assistance services (i.e., written translation and oral interpretation), free of charge, to LEP employees and applicants. Contact NCDOT OCR for further assistance, if needed.

6. For assistance with these Title VI requirements, contact the NCDOT Title VI Nondiscrimination Program at 1-800-522-0453.

(b) Subrecipients (e.g. cities, counties, LGAs, planning organizations) may be required to prepare and submit a Title VI Plan to NCDOT, including Title VI Assurances and/or agreements. Subrecipients must also ensure compliance by their contractors and subrecipients with Title VI. (23 CFR 200.9(b)(7))

(c) If reviewed or investigated by NCDOT, the contractor or subrecipient agrees to take affirmative action to correct any deficiencies found within a reasonable time period, not to exceed 90 calendar days, unless additional time is granted by NCDOT. (23 CFR 200.9(b)(15))

(d) The Contractor is responsible for notifying subcontractors of NCDOT's External Discrimination Complaints Process.

1. Applicability

   Title VI and related laws protect participants and beneficiaries (e.g., members of the public and contractors) from discrimination by NCDOT employees, subrecipients and contractors, regardless of funding source.

2. Eligibility

   Any person—or class of persons—who believes he/she has been subjected to discrimination based on race, color, national origin, Limited English Proficiency (LEP), sex, age, or disability (and religion in the context of employment, aviation, or transit) may file a written complaint. The law also prohibits intimidation or retaliation of any sort.

3. Time Limits and Filing Options

   Complaints may be filed by the affected individual(s) or a representative and must be filed no later than 180 calendar days after the following:

   (i) The date of the alleged act of discrimination; or

   (ii) The date when the person(s) became aware of the alleged discrimination; or

   (iii) Where there has been a continuing course of conduct, the date on which that conduct was discontinued or the latest instance of the conduct.

   Title VI and related discrimination complaints may be submitted to the following entities:

   - North Carolina Department of Transportation, Office of Civil Rights, Title VI Program, 1511 Mail Service Center, Raleigh, NC 27699-1511; toll free 1-800-522-0453
   - Federal Highway Administration, North Carolina Division Office, 310 New Bern Avenue, Suite 410, Raleigh, NC 27601, 919-747-7010
   - US Department of Transportation, Departmental Office of Civil Rights, External Civil Rights Programs Division, 1200 New Jersey Avenue, SE, Washington, DC 20590; 202-366-4070

4. Format for Complaints

   Complaints must be in writing and signed by the complainant(s) or a representative, and include the complainant's name, address, and telephone number. Complaints received by fax or e-mail will be acknowledged and processed. Allegations received by telephone will be reduced to writing and provided to the complainant for confirmation or revision before processing. Complaints will be accepted in other languages, including Braille.

5. Discrimination Complaint Form

   Contact NCDOT Civil Rights to receive a full copy of the Discrimination Complaint Form and procedures.

6. Complaint Basis

   Allegations must be based on issues involving race, color, national origin (LEP), sex, age, disability, or religion (in the context of employment, aviation or transit). "Basis" refers to the complainant's membership in a protected group category.

TABLE 103-1
COMPLAINT BASIS

Protected Categories	Definition	Examples	Applicable Nondiscrimination Authorities
Race and Ethnicity	An individual belonging to one of the accepted racial groups; or the perception, based usually on physical characteristics that a person is a member of a racial group	Black/African American, Hispanic/Latino, Asian, American Indian/Alaska Native, Native Hawaiian/Pacific Islander, White	Title VI of the Civil Rights Act of 1964; 49 CFR Part 21; 23 CFR 200; 49 U.S.C. 5332(b); 49 U.S.C. 47123. *(Executive Order 13166)*
Color	Color of skin, including shade of skin within a racial group	Black, White, brown, yellow, etc.	
National Origin *(Limited English Proficiency)*	Place of birth. Citizenship is not a factor. (*Discrimination based on language or a person's accent is also covered)*	Mexican, Cuban, Japanese, Vietnamese, Chinese	
Sex	Gender. The sex of an individual. *Note:* Sex under this program does not include sexual orientation.	Women and Men	1973 Federal-Aid Highway Act; 49 U.S.C. 5332(b); 49 U.S.C. 47123.
Age	Persons of any age	21-year-old person	Age Discrimination Act of 1975 49 U.S.C. 5332(b); 49 U.S.C. 47123.
Disability	Physical or mental impairment, permanent or temporary, or perceived.	Blind, alcoholic, para-amputee, epileptic, diabetic, arthritic	Section 504 of the Rehabilitation Act of 1973; Americans with Disabilities Act of 1990
Religion (in the context of employment) *(Religion/ Creed in all aspects of any aviation or transit-related construction)*	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. ***Note:*** 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)*

(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

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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%

FHWA-1273 -- Revised October 23, 2023

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.

b. 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. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), 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 basic hourly 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. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. 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 must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. 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 classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must 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. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

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

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must 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 be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate 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 used 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) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) 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 will be sent by the contracting officer by email to *DBAconformance@dol.gov*. 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.

(4) 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 will, by email to *DBAconformance@dol.gov,* 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.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must 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.

d. *Fringe benefits not expressed as an hourly rate.* 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 may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* 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, in accordance with the criteria set forth in § 5.28, 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.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and 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.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; 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 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section 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 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must 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.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working 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; and

(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(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

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

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* 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. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, 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, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform 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 (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must 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, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must 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 this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

c. 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 journeyworkers 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 must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 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. a. By entering into this contract, the contractor certifies that neither it 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 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

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

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

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 watchpersons 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 and interest from the date of the underpayment. 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 watchpersons 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.

* $31 as of January 15, 2023 (See 88 FR 88 FR 2210) 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

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, 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 that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

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 long-standing 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 200.327.

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 200.327.

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.

* * * * *

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 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).

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.

* * * * *

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

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

(1) 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;

(2) 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

(3) 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)

b. 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 NC20260086 01/02/2026 NC86

Z-086

Date: January 2, 2026

General Decision Number: NC20260086 01/02/2026 NC86

Superseded General Decision Numbers: NC20250086

State: North Carolina

Construction Type: HIGHWAY

COUNTIES:

Alleghany	Jackson	Surry
Ashe	Lincoln	Swain
Avery	Macon	Transylvania
Cherokee	McDowell	Watauga
Clay	Mitchell	Wilkes
Cleveland	Polk	Yancey
Graham	Rutherford	

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).

Modification Number	Publication Date
0	01/02/2026

SUNC2014-001 11/13/2014

	Rates	Fringes
BLASTER	21.83	
CARPENTER	12.54	
CEMENT MASON/CONCRETE FINISHER	14.10	
ELECTRICIAN		
Electrician	19.19	2.39
Telecommunications Technician	15.13	
IRONWORKER	14.53	
LABORER		
Asphalt Raker and Spreader	12.23	
Asphalt Screed/Jackman	15.22	
Carpenter Tender	10.00	
Cement Mason/Concrete Finisher Tender	12.26	
Common or General	10.68	
Guardrail/Fence Installer	13.43	
Pipelayer	12.22	
Traffic Signal/Lighting Installer	15.85	
PAINTER		
Bridge	19.62	
POWER EQUIPMENT OPERATORS		
Asphalt Broom Tractor	11.00	
Bulldozer Fine	16.20	

	Rates	Fringes
Bulldozer Rough	13.89	
Concrete Grinder/Groover	24.66	
Crane Boom Trucks	14.44	.53
Crane Other	19.59	
Crane Rough/All-Terrain	21.25	
Drill Operator Rock	15.25	
Drill Operator Structure	20.92	
Excavator Fine	16.11	
Excavator Rough	13.10	
Grader/Blade Fine	19.24	
Grader/Blade Rough	13.07	
Loader 2 Cubic Yards or Less	13.38	
Loader Greater Than 2 Cubic Yards	16.01	
Material Transfer Vehicle (Shuttle Buggy)	17.39	
Mechanic	18.51	
Milling Machine	13.88	
Off-Road Hauler/Water Tanker	13.87	
Oiler/Greaser	14.98	
Pavement Marking Equipment	13.33	
Paver Asphalt	15.68	.05
Roller Asphalt Breakdown	14.05	.06
Roller Asphalt Finish	14.98	.04
Roller Other	11.75	
Scraper Finish	13.87	
Scraper Rough	11.53	
Slip Form Machine	20.79	
Tack Truck/Distributor Operator	14.67	.06
TRUCK DRIVER		
GVWR of 26,000 Lbs or Less	11.72	
GVWR of 26,001 Lbs or Greater	13.50	

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

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.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is

higher) for all hours spent performing on the contract in 2025. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 is available at www.dol.gov/whd/govcontracts.

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)(iii)).

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

Union Rate Identifiers

A four-letter identifier beginning with characters other than "SU", "UAVG", "SA", or "SC" denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate 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. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing this classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The "SU" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 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.

The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

"SU" wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The "SA" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the "SA" identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

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

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

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

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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

END OF GENERAL DECISION

PROJECT SPECIAL PROVISIONS

GEOTECHNICAL

ROCK EMBANKMENTS (SPECIAL)	GT-1.1 - GT-1.2
PARTIALLY GROUTED ROCK FILL (SPECIAL)	GT-2.1
WIRE FORM SLOPE STABILIZATION (SPECIAL)	GT-3.1 - GT-3.9
SHORED MECHANICALLY STABILIZED EARTH RETAINING WALLS (SPECIAL)	GT-4.1 - GT-4.23
MICROPILE GRADE BEAM (SPECIAL)	GT-5.1 - GT-5.9
ANCHORED SHEET PILE RETAINING WALLS (SPECIAL)	GT-6.1 - GT-6.8

ROCK EMBANKMENTS (SPECIAL)

Description

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

Materials

Refer to Division 10 of the *Standard Specifications*.

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

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

Construction Methods

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

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

Measurement and Payment

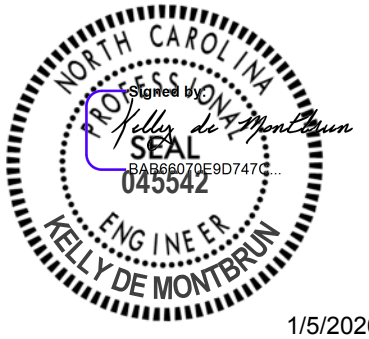
Rock Embankments will be measured and paid in tons. Select material will be measured by weighing material in trucks in accordance with Article 106-7 of the *Standard Specifications*. Rip Rap, Class A and B will be measured and paid in accordance with Article 876-4 of the *Standard Specifications*. The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

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

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

Payment will be made under:

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



1/5/2026

PARTIALLY GROUTED ROCK FILL: (SPECIAL)

GENERAL

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

MATERIALS

Refer to Division 10 of the *Standard Specifications*.

Item	Section
Grout	1003

Use Type 4 Grout for Partially Grouted Rock Fill. Obtain aggregates from sources participating in the Department's Aggregate QC/QA Program in accordance with Section 1006 of the *Standard Specifications* or use similar size onsite material approved by the Engineer. The Portland cement and fine aggregate shall be dry mixed to a uniform consistency. Water shall be added as mixing continues until the grout attains a wet grout density ranging from 120 to 140 lbs/cu ft.

CONSTRUCTION METHODS

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

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

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

MEASUREMENT AND PAYMENT

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

Payment will be made under:

Pay Item	Pay Unit
Grout for Rock Fill	Cubic Yard

NORTH CAROLINA PROFESSIONAL SEAL 045542 ENGINEER KELLY DE MONTBRUN

Signed by: Kelly de Montbrun
BAB66070E9D747C...

1/5/2026

WIRE MESH SLOPE STABILIZATION: (SPECIAL)

GENERAL

A soil nail is defined as a steel bar grouted in a drilled hole inclined at an angle below horizontal. Wire mesh slope stabilization consists of soil nails spaced at a regular pattern and connected to a flexible, steel wire mesh facing. Construct wire mesh slope stabilization based on actual elevations and dimensions in accordance with this provision, the accepted submittals and the plans. Define "Soil Nail Contractor" as the Anchored Wall Contractor installing soil nails and mesh facing. Define "nail" as a soil nail.

MATERIALS

Refer to Division 10 of the *Standard Specifications*.

Item	Section
Neat Cement Grout, Type 5	1003
Portland Cement Concrete	1000
Steel Plates	1072-2

Provide Type 5 grout for soil nails.

Provide Type 3 Manufacturer's Certifications in accordance with Article 106-3 of the *Standard Specifications* for soil nail materials.

A. Soil Nails

Store steel materials on blocking a minimum of 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. Do not crack, fracture or otherwise damage grout inside sheathing of shop grouted encapsulated soil nails.

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 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.

For solid steel bar, provide epoxy coated bars that meet Article 1070-7 of the Standard Specifications. Provide Class A corrosion protection (encapsulated bar) or Class B corrosion protection (epoxy coated bar only, no galvanized bar) for soil nails in accordance with Article 34.3.3 of the AASHTO LRFD Bridge Construction Specifications. Use centralizers that meet Article 34.3.4 of the AASHTO LRFD specifications. For hollow steel bar, increase the bar size to account for a 0.125 inch reduction in outside diameter.

Fabricate bar centralizers from schedule 40 polyvinyl chloride (PVC) plastic pipe or tube, steel or other material not detrimental to steel bars (no wood). Size centralizers to position the bar within 1" of the drill hole center and allow a tremie to be inserted to the

bottom of the hole. Use centralizers that do not interfere with grout placement or flow around soil nail bars. For encapsulated bars, centralizers are required both inside and outside of encapsulation. Centralizers are not required for hollow bars.

B. Connectors and Anchor Plates

Use galvanized steel plates recommended by the Wire Mesh/Net Manufacturer instead of anchor plates required above to anchor wire mesh or nets to excavation or slope faces.

When noted in the plans, provide support ropes to suspend wire mesh or nets from nails. At the Contractor's option and when noted in the plans, suspend wire mesh or nets from grouted rope anchors instead of nails and connect rope anchors to support ropes with shackles.

Provide any wire mesh and net components or hardware not addressed in this provision in accordance with the Wire Mesh/Net Manufacturer's recommendations. Galvanize steel components not addressed in this provision in accordance with Section 1076 of the Standard Specifications.

a. Hardware

Use shackles that meet Federal Specification RR-C-271, Type IVA or IVB, Grade B, Class 2 or 3 with a zinc-coated finish. Use thimbles that meet Federal Specification FF-T-276, Type III and clamps, i.e., U-bolt wire rope clips that meet Federal Specification FF-C-450, Type I, Class 1. Provide shackles, thimbles and clamps of a size recommended by the Wire Mesh/Net Manufacturer.

b. Steel Wire and Wire Ropes

For double-twisted hexagonal mesh wires, use carbon steel wires that meet ASTM A641, Class 3 or A Coating or better with a tensile strength of 75,000 psi. For high-strength wires, use cold-drawn nonalloy or hard-drawn carbon steel wires that meet either of the following:

(1) ASTM A764, Tensile Class I or II with coating that meets ASTM A856, Class 3 or A Coating or better or

(2) European Standard EN 10264-2, Grade 1370 or better, Class A or B Coating.

Use galvanized stranded carbon steel wire ropes with a steel core (SC) that meet ASTM A1023 for wire ropes. Use wire ropes with an independent wire rope core (IWRC), 6D19 construction, at least 1/2" diameter and minimum breaking force recommended by the Wire Mesh/Net Manufacturer for boundary and support ropes and rope anchors. Use wire ropes with 7D7 or 7D19 construction, at least 5/16" diameter and minimum breaking force recommended by the Wire Mesh/Net Manufacturer for lacing cables, seam and perimeter ropes and wire nets.

c. Wire Mesh

Provide high-strength mesh or double-twisted hexagonal mesh with wire ropes woven into mesh, if necessary for wire mesh. Use double-twisted hexagonal mesh that meets ASTM A975 and high-strength wires for high-strength mesh. Use boundary or perimeter ropes at ends of wires or fasten ends of wires together to prevent wire mesh from unraveling. Provide wire mesh types in accordance with the contract. Use wire mesh with properties that meet the following:

WIRE MESH REQUIREMENTS Property Requirement Type 1 Type 2 Type 3 Minimum Mesh Tensile Strength in Longitudinal DirectionA 3,500 lb/ft 8,900 lb/ft 8,900 lb/ft Minimum Mesh Tensile Strength in Transverse DirectionB 1,400 lb/ft 3,400 lb/ft 6,200 lb/ft Maximum Mesh Opening Width 4" Minimum Double-Twisted Hexagonal Mesh Wire Diameter ASTM A975, Table 1 (8 by 10 mesh type) Minimum High-Strength Wire Diameter 0.079" (2 mm) 0.118" (3 mm) 0.157" (4 mm)

WIRE MESH REQUIREMENTS			
Property	**Requirement**		
	Type 1	**Type 2**	**Type 3**
Minimum Mesh Tensile Strength in Longitudinal Direction[A]	3,500 lb/ft	8,900 lb/ft	8,900 lb/ft
Minimum Mesh Tensile Strength in Transverse Direction[B]	1,400 lb/ft	3,400 lb/ft	6,200 lb/ft
Maximum Mesh Opening Width	4"		
Minimum Double-Twisted Hexagonal Mesh Wire Diameter	ASTM A975, Table 1 (8 by 10 mesh type)		
Minimum High-Strength Wire Diameter	0.079" (2 mm)	0.118" (3 mm)	0.157" (4 mm)

A. Direction of largest mesh opening
B. Direction perpendicular to longitudinal direction

Provide lacing cables, seam ropes, hog rings or connection clips to lace, seam or connect wire mesh sections together. Use fasteners, i.e., hog rings that meet ASTM A975 and connection clips consisting of high-strength wires with a wire diameter of at least 0.118" (3 mm). Weave lacing cables or seam ropes or install hog rings or connection clips in accordance with the plans and Wire Mesh Manufacturer’s instructions.

CONSTRUCTION METHODS

Perform all necessary clearing and grubbing in accordance with Section 200 of the Standard Specifications. Perform any blasting in accordance with the contract special provisions. Do not excavate beyond the face of the soil nail slope stabilization.

Use equipment and methods reviewed and accepted in the installation and testing plan or approved by the Engineer. Inform the Engineer of any deviations from the accepted plan.

A. Excavation

Construct the soil nail slope stabilization from the top down. If necessary, excavate in staged horizontal lifts with heights not to exceed the vertical soil nail spacing. The excavated surface must be to the grades of the project drawings for the slope. Do not excavate the slope more than 3 feet below the level of the row of nails to be installed in that lift. Do not excavate a lift until nail installation and nail testing for the preceding lift are complete and acceptable to the Engineer. After a lift is excavated, clean the cut surface of all loose materials, mud, and other foreign material. An excavated face cannot be unprotected for more than 24 hours for any reason. Prior to advancing the excavation, allow nail grout on the preceding lift to achieve the required 3 day compressive strength. If the slope stabilization does not require excavation, installation of mesh and nails may proceed along the roadway and down the slope face without delay, except for required nail testing.

If the excavation face becomes unstable at any time, suspend soil nail slope stabilization construction and temporarily stabilize the face by immediately placing an earth berm against the unstable face. Soil nail slope stabilization construction may not proceed until the conditions have been reviewed by the Engineer. A revised soil nail slope stabilization installation and testing plan submittal may be required after the slope conditions have been reviewed.

Take all necessary measures to ensure that installed nails are not damaged during excavation. Repair or replace to the satisfaction of the Engineer and at no cost to the Department nails that are damaged or disturbed during excavation.

B. Installation of Wire Mesh and Bearing Plates

Prior to installing wire mesh, excavate depression around each nail location as shown in plans. Install wire mesh in accordance with the drawings and manufacturer's specifications, including any required overlapping.

Following nail installation, connect the bearing plates to the nails as shown on the plans and as directed by the Engineer. Replace bearing plates, nuts or washers that are damaged or defective as determined by the Engineer at no additional cost to the Department. Once the bearing plates and nuts have been attached to the nails, tighten each nut until they have reached a torque reading indicated in the plans. Attempt to lift the mesh from the slope surface after securing adjacent bearing plates. If the mesh separates more than ¼" from the slope surface, remove the bearing plate(s), choose mesh openings closer together to slip over the ends of the nail(s), and re-tighten the bearing plate. Repeat

attempting to lift and adjusting the mesh as necessary until the mesh has tight contact with the slope face.

C. Soil Nail Installation

Drill and grout soil nails the same day and do not leave drill holes open overnight. Install supplemental soil nails, as directed by the Engineer, to a depth of 10 feet beyond the slope face through the wire mesh to improve contact with the slope face.

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

a. Drilling

Use drilling rigs capable of drilling through whatever materials are encountered to the dimensions and orientations required for the soil nail slope stabilization design. Drill straight and clean holes at the locations shown in the accepted submittals. Drill hole locations and inclinations are required to be within 6” and 2 degrees, respectively, of that shown in the accepted submittals unless approved otherwise by the Engineer.

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.

Using manufacturer approved methods, increase the opening in the wire mesh to allow installation of the soil nail through the mesh.

b. Soil Nail Bars

Use centralizers to center steel bars in drill holes. Securely attach centralizers at maximum 8 ft intervals along bars. Attach upper and lowermost centralizers 24” from the top and bottom of the bars.

Before placing soil nail bars, allow the Engineer to check location, orientation and cleanliness of drill holes. Provide steel bars as shown in the accepted submittals and insert bars without difficulty or forcing insertion. Do not vibrate or drive soil nail bars. If a bar can not be completely inserted easily, remove the bar and clean or redrill the hole.

c. Grouting

Remove all oil, rust inhibitors, residual drilling fluids and similar foreign materials from holding tanks/hoppers, stirring devices, pumps, lines, tremie pipes and all other equipment in contact with grout before use.

Place grout with a tremie in accordance with the contract and accepted submittals. Inject grout at the lowest point of drill holes through a tremie pipe, e.g., grout tube, casing, hollow-stem auger or drill rod, in one continuous operation. Fill drill holes progressively from the bottom to top and withdraw tremie at a slow even rate as the hole is filled to prevent voids in the grout. Extend tremie pipe into grout a minimum of 5 ft at all times except when grout is initially placed in a drill hole.

Provide grout free of segregation, intrusions, contamination, structural damage or inadequate consolidation (honeycombing). Cold joints in grout are not allowed except for soil nails that are tested. Extract temporary casings as grout is placed. Monitor and record grout volumes during placement.

Bar threads should be kept clean to allow tightening of the anchor plate and nut.

CONSTRUCTION RECORDS

A. Provide 2 copies of wire mesh slope stabilization construction records within 24 hours of completing each lift. Include the following in construction records:

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

B. After completing each soil nail slope stabilization site, provide a PDF file of all corresponding construction records.

SOIL NAIL TESTING

"Proof test nails" refer to soil nails on which proof tests are performed. Proof tests on 5 percent of production soil nails with a minimum of 1 test per nail row are required. More or less soil nail testing may be required depending on the subsurface conditions encountered. The Engineer will decide the actual number and specific locations of each verification and proof test required.

Do not test soil nails until grout achieves the required 3 day compressive strength. Do not begin construction of any production soil nails until verification tests are satisfactorily completed.

If noted on plans, proof test soil nails in accordance with the contract and as directed. “Proof tests” are performed on nails incorporated into the soil nail slope stabilization, i.e., production nails. Define “proof test nail” as a nail tested with a proof test, respectively. Define “test nails” as proof test nails.

Proof tests are typically required for at least one nail per nail row 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. The approximate known test nail locations may be shown in the plans.

Do not test nails until grout and shotcrete attain the required 3-day compressive strength.

A. Test Equipment

Use the following equipment to test nails:

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

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

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

B. Test Nails

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

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

C. Nail Tests

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

D. Test Nail Acceptance

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

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

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

After completing nail testing for each wire mesh slope stabilization site, provide a PDF file of all corresponding test nail records.

MEASUREMENT AND PAYMENT

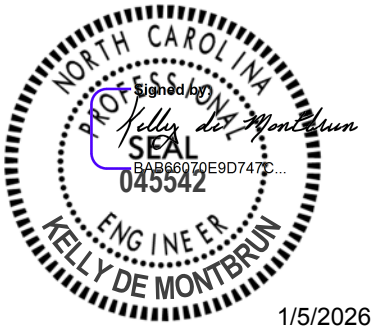
Wire Mesh Slope Stabilization will be measured and paid for at the contract unit price per square yard of the slope stabilization system measured along the surface of the slope that has been incorporated into the completed and accepted work.

Include in the unit bid price for *Wire Mesh Slope Stabilization* all costs for submittals, furnishing labor, tools, equipment and materials, excavating lifts, installing soil nails, DN01092 GT-4.9 Hurricane Helene Emergency Repairs grouting, wire mesh and any incidentals necessary to design and construct soil nail slope stabilization in accordance with this provision.

Supplemental Soil Nails will be measured and paid for at the contract unit price per each to construct additional soil nails into the completed and accepted work. Include in the unit bid price all costs for furnishing labor, tools, equipment and materials, installing soil nails, grouting, and any incidentals necessary to construct supplemental soil nails in accordance with this provision. No payment will be made for supplemental soil nails that are required due to Contractor negligence during excavation.

Soil Nail Proof Tests will be measured and paid for per each. Include in these unit bid prices all costs for soil nail testing in accordance with this provision. The Department will only pay for the initial proof test on an initial test nail required by the Engineer; no payment will be made for subsequent tests performed on the same test nail or replacement test nails.

Pay Item	**Pay Unit**
Wire Mesh Slope Stabilization	Square Yard
Supplemental Soil Nails	Each
Soil Nail Proof Tests	Each



1/5/2026

SHORED MECHANICALLY STABILIZED EARTH RETAINING WALLS (SPECIAL)

1.0 GENERAL

A Shored Mechanically Stabilized Earth (SMSE) retaining wall is defined as a soil retaining system with steel or geogrid tensile reinforcements in the reinforced zone connected to vertical precast concrete panels, as required in the plans, combined with a Soil Nail Wall system consisting of soil nails spaced at a regular pattern and connected to a reinforced shotcrete face supporting the excavation. Segmental retaining wall (SRW) units may not be used. When a composite MSE and Soil Nail Wall, otherwise referred to as a SMSE, system is proposed on a project, the MSE component of the system should consider the long-term retaining benefits provided by the Soil Nail Wall and the potential reduction in excavation and reinforced backfill. Contributions of the Soil Nail Wall include a reduction in lateral loads on the MSE mass and significant contributions to global stability.

Only use coarse aggregate in the reinforced zone of MSE portion of SMSE retaining walls. Provide reinforced concrete coping as required. Design and construct SMSE retaining walls based on actual elevations, required embedment and wall dimensions in accordance with the contract and accepted submittals.

For this provision, "SMSE Wall" refers to the entire wall system, "MSE Wall" refers to the mechanically stabilized earth wall part of the SMSE wall and "Soil Nail Wall" refers to the soil nail wall portion of the SMSE wall.

2.0 MATERIALS

MSE Wall System

Refer to the *Standard Specifications*.

Item	Section
Aggregate	1014
Anchor Pins	1056-2
Curing Agents	1026
Epoxy, Type 3A	1081
Geotextiles, Type 2	1056
Grout, Type 3	1003
Joint Materials	1028
Portland Cement Concrete, Class A	1000
Precast Retaining Wall Coping	1077
Precast Wall Facing Panels	1077
Reinforcing Steel	1070
Retaining Wall Panels	1077
Shoulder Drain Materials	816-2
Wire Staples	1060-8(D)

Provide Type 2 geotextile for filtration and separation geotextiles. Use Class A concrete for cast-in-place coping, leveling concrete and pads.

Use panels from producers approved by the Department and licensed by the MSE Wall Vendor. Unless required otherwise in the contract, produce panels with a smooth flat final finish that meets Article 1077-11 of the *Standard Specifications*. Accurately locate and secure reinforcement connectors in panels and maintain required concrete cover. Produce panels within 1/4" of the panel dimensions shown in the accepted submittals.

Damaged panels with excessive discoloration, chips or cracks as determined by the Engineer will be rejected. Do not damage reinforcement connection devices or mechanisms in handling or storing panels.

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. Handle and store geosynthetics in accordance with Article 1056-2 of the *Standard Specifications*. Load, transport, unload and store MSE wall materials so materials are kept clean and free of damage. Bent, damaged or defective materials will be rejected.

A. Aggregate

Use standard size No. 57, 57M, 67 or 78M that meets Table 1005-1 of the *Standard Specifications* for coarse aggregate except do not use No. 57 or 57M stone in the reinforced zone of MSE walls with geosynthetic reinforcement or connectors. Use the following for fine aggregate:

1) Standard size No. 1S, 2S, 2MS or 4S that meets Table 1005-2 of the *Standard Specifications* or
2) Gradation that meets Class III, Type 3 select material in accordance with Article 1016-3 of the *Standard Specifications*.

Fine aggregate is exempt from mortar strength in Subarticle 1014-1(E) of the *Standard Specifications*. Use fine aggregate with a maximum organic content of 1.0%. Provide aggregate with electrochemical properties that meet the following requirements:

AGGREGATE ELECTROCHEMICAL REQUIREMENTS					
Aggregate Type	**Reinforcement or Connector Material**	**pH**	**Resistivity**	**Chlorides**	**Sulfates**
Coarse	Steel	Not Required			
Fine	Steel	5 – 10	≥ 3,000 Ω · cm	≤ 100 ppm	≤ 200 ppm
Coarse or Fine	Polyester Type (PET) Geogrid	5 – 8	N/A*	N/A*	N/A*
Coarse or Fine	Geostrip or Polyolefin Geogrid	4.5 – 9	N/A*	N/A*	N/A*

* Resistivity, chlorides and sulfates are not applicable to geosynthetics.

Use aggregate from a source that meets the *Mechanically Stabilized Earth Wall Aggregate Sampling and Testing Procedures*. Perform pH tests for coarse aggregate in accordance with Materials and Tests (M&T) Unit Chemical Procedure C-Elec. Perform organic content tests for fine aggregate in accordance with AASHTO T 267 instead of Subarticle 1014-1(D) of the *Standard Specifications*. Perform electrochemical tests for fine aggregate in accordance with the following test procedures:

Property	**Test Method**
pH	AASHTO T 289
Resistivity	AASHTO T 288
Chlorides	AASHTO T 291
Sulfates	AASHTO T 290

B. Reinforcement

Provide steel or geosynthetic reinforcement supplied by the MSE Wall Vendor or a manufacturer approved or licensed by the vendor. Use reinforcement approved for the chosen MSE wall system. The list of approved reinforcement for each MSE wall system is available from the website shown elsewhere in this provision.

Steel Reinforcement

Provide Type 1 material certifications in accordance with Article 106-3 of the *Standard Specifications* for steel reinforcement. Use welded wire grid reinforcement ("mesh", "mats" and "ladders") that meet Article 1070-3 of the *Standard Specifications* and metallic strip reinforcement ("straps") that meet ASTM A572 or A1011. Galvanize steel reinforcement in accordance with Section 1076 of the *Standard Specifications*.

Geosynthetic Reinforcement

Define "machine direction" (MD) for geosynthetics in accordance with ASTM D4439. Provide Type 1 material certifications for geosynthetic strengths in the MD in accordance with Article 1056-3 of the *Standard Specifications*. Test geosynthetics in accordance with ASTM D6637.

C. Bearing Pads

For MSE panel walls, use bearing pads that meet Section 3.6.1.a of the *FHWA Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes – Volume I* (Publication No. FHWA-NHI-10-024). Provide bearing pads with thicknesses that meet the following:

BEARING PAD THICKNESS	
Facing Area per Panel (A)	**Minimum Pad Thickness After Compression (based on 2 times panel weight above pads)**
$A \leq 30$ sf	1/2"
30 sf $< A \leq 75$ sf	3/4"

D. Miscellaneous Components

Miscellaneous components may include connectors (e.g., anchors, bars, clamps, pins, plates, ties, etc.), fasteners (e.g., bolts, nuts, washers, etc.) and any other MSE wall components not included above. Galvanize steel components in accordance with Section 1076 of the *Standard Specifications*. Provide miscellaneous components approved for the chosen MSE wall system. The list of approved miscellaneous components for each MSE wall system is available from the website shown elsewhere in this provision.

Soil Nail Wall System

Refer to the *Standard Specifications*.

Item	**Section**
Anchor Pins	1056-2
Curing Agents	1026
Geocomposites	1056
Joint Materials	1028
Masonry	1040
Grout, Type 2	1003
Portland Cement Concrete, Class A	1000
Reinforcing Steel	1070
Select Material, Class VI	1016
Shotcrete	1002
Shoulder Drain Materials	816-2
Steel Plates	1072-2

Provide Class VI select material (standard size No. 57 stone) for leveling pads. Use Class A concrete for concrete facing and neat cement grout for Type 2 grout.

Provide soil nails consisting of grouted steel bars and nail head assemblies. Use epoxy coated or encapsulated deformed steel bars that meet AASHTO M 275 or M 31, Grade 60 or 75. Splice bars in accordance with Article 1070-9 of the *Standard Specifications*. Provide epoxy coated bars that meet Article 1070-7 of the *Standard Specifications*.

For encapsulated bars, use nonperforated corrugated HDPE sheaths at least 0.04" thick that meet AASHTO M 252. Provide at least 0.4" of grout cover between bars and sheathing and at least 0.8" of grout cover between sheathing and drill hole walls.

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

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

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

3.0 MSE PRECONSTRUCTION REQUIREMENTS

A. MSE Wall Surveys

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

B. MSE Wall Designs

For MSE wall designs, submit PDF files of working drawings and calculations at least 30 days before the preconstruction meeting. Note name and NCDOT ID number of the

panel production facility on the working drawings. Do not begin MSE wall construction until a design submittal is accepted.

Use an approved MSE wall system in accordance with the plans and any NCDOT restrictions or exceptions for the chosen system. Use a prequalified MSE Wall Design Consultant to design MSE walls. Provide designs sealed by a Design Engineer approved as a Geotechnical Engineer (key person) for the MSE Wall Design Consultant.

Design shored MSE walls with a minimum reduced reinforcement length of 6 feet or 0.4 times the wall height, whichever is greater; except for the top two layers of reinforcement, which must have a minimum length of 0.7 times the wall height or extend 5 feet beyond the top of the soil nail wall, whichever is longer. Where the soil nail wall is less than 2/3 times the wall height, design the MSE wall in accordance with the plans, AASHTO LRFD Bridge Design Specifications and any NCDOT restrictions for the chosen MSE wall system unless otherwise required, using a minimum reinforcement length of 0.7 times the wall height. Where the soil nail wall extends to near the MSE wall height disallowing extension of the upper reinforcement, either connect the reinforcement to the soil nail wall, use a minimum reinforcement length of 0.7 times the wall height, or submit an alternate detail to the Engineer for review and acceptance. Use a maximum vertical reinforcement spacing of 2.5 feet. Extend the reinforcement to the soil nail wall, where applicable. Otherwise extend the reinforced zone at least 6" beyond end of reinforcement. Do not locate drains, the reinforced zone or leveling pads outside right-of-way or easement limits.

Use the simplified method for determining maximum reinforcement loads and design parameters approved for the chosen MSE wall system or default values in accordance with the AASHTO LRFD specifications. Design steel components including reinforcement and connectors for the design life noted in the plans and aggregate type in the reinforced zone. Use corrosion loss rates for galvanizing in accordance with the AASHTO LRFD specifications for nonaggressive backfill and carbon steel corrosion rates in accordance with the following:

CARBON STEEL CORROSION RATES	
Aggregate Type (in reinforced zone)	**Corrosion Loss Rate (after zinc depletion)**
Coarse	0.47 mil/year
Fine (except abutment walls)	0.58 mil/year
Fine (abutment walls)	0.70 mil/year

For geosynthetic reinforcement and connectors, use approved geosynthetic properties for the design life noted in the plans and aggregate type in the reinforced zone.

When noted in the plans, design MSE walls for a live load (traffic) surcharge of 250 lb/sf in accordance with Figure C11.5.6-3(b) of the AASHTO LRFD specifications. For steel beam guardrail with 8 ft. posts or concrete barrier rail above MSE walls, analyze top 2

reinforcement layers for traffic impact loads in accordance with Section 7.2 of the FHWA MSE wall manual shown elsewhere in this provision except use the following for geosynthetic reinforcement rupture:

$$\phi\, T_{al}\, R_c \geq T_{max} + (T_I / RF_{CR})$$

Where,

ϕ = resistance factor for tensile resistance in accordance with Section 7.2.1 of the FHWA MSE wall manual,

T_{al} = long-term geosynthetic design strength approved for chosen MSE wall system,

R_c = reinforcement coverage ratio = 1 for continuous geosynthetic reinforcement,

T_{max} = factored static load in accordance with Section 7.2 of the FHWA MSE wall manual,

T_I = factored impact load in accordance with Section 7.2 of the FHWA MSE wall manual and

RF_{CR} = creep reduction factor approved for chosen MSE wall system.

If existing or future obstructions such as foundations, guardrail, fence or handrail posts, moment slabs, pavements, pipes, inlets or utilities will interfere with reinforcement, maintain a clearance of at least 3" between obstructions and reinforcement unless otherwise approved. Locate reinforcement layers so all of reinforcement length is within 3" of corresponding connection elevations.

Use 6" thick cast-in-place unreinforced concrete leveling pads beneath panels that are continuous at steps and extend at least 6" in front of and behind bottom row of panels. Unless required otherwise in the plans, embed top of leveling pads in accordance with the following requirements:

EMBEDMENT REQUIREMENTS [3,4,5,6]	
Front Slope[1] (H:V)	**Minimum Embedment Depth[2] (whichever is greater)**
Horizontal (walls)	H/20
Horizontal (abutments)	H/10
3H:1V	H/10
2.5H:1V	H/8.5
2H:1V	H/7
1.5H:1V	H/5
1.25H:1V	H/4
1H:1V	H/3

Notes:
(a) Front slope is as shown in the plans.
(b) Define "H" as the maximum design height plus embedment per wall with the design height and embedment as shown in the plans.
(c) Maintain a minimum bench width of 4.0 ft. in front of the wall for the entire length.
(d) Minimum Embedment of 2 ft. unless larger depths dictated by the above table.
(e) Maximum Slope of 1H:1V will be maintained on front slopes for the entire length of the wall.
(f) Submit with the wall design internal, external, and global stability analyses.

When noted in the plans, locate a continuous aggregate shoulder drain along the base of the reinforced zone behind the aggregate. Provide wall drainage systems consisting of drains and outlet components in accordance with Standard Drawing No. 816.02 of the *Roadway Standard Drawings*.

For MSE panel walls, cover joints at back of panels with filtration geotextiles at least 12" wide. If the approval of the chosen MSE wall system does not require a minimum number of bearing pads, provide the number of pads in accordance with the following:

NUMBER OF BEARING PADS		
Facing Area per Panel (A)	**Maximum Wall Height Above Horizontal Panel Joint**	**Minimum Number of Pads per Horizontal Panel Joint**
A ≤ 30 sf	25 ft	2
	35 ft[1]	3
30 sf < A ≤ 75 sf	25 ft	3
	35 ft[1]	4

(a) Additional bearing pads per horizontal panel joint may be required for wall heights above joints greater than 35 ft.

For MSE segmental walls, separation geotextiles are required between the aggregate and

overlying fill or pavement sections except when concrete pavement, full depth asphalt or cement treated base is placed directly on aggregate. When noted in the plans, separation geotextiles are also required at the back of the reinforced zone between the aggregate and backfill or natural ground. Unless required otherwise in the plans, use reinforced concrete coping at top of walls that meets the following requirements:

1. Coping dimensions as shown in the plans,
2. At the Contractor's option, coping that is precast or CIP concrete for MSE panel walls unless CIP coping is required as shown in the plans,
3. CIP concrete coping for MSE segmental walls and
4. At the Contractor's option and when shown in the plans, CIP concrete coping that extends down back of panels or SRW units or connects to panels or SRW units with dowels.

For MSE panel walls with coping, connect cast-in-place concrete coping or leveling concrete for precast concrete coping to top row of panels with dowels cast into panels. When concrete barrier rail is required above MSE walls, use concrete barrier rail with moment slab as shown in the plans.

Submit working drawings and design calculations for acceptance in accordance with Article 105-2 of the *Standard Specifications*. Submit working drawings showing plan views, wall profiles with foundation pressures, typical sections with reinforcement and connection details, aggregate locations and types, geotextile locations and details of leveling pads, panels, coping, bin walls, slip joints, etc. If necessary, include details on working drawings for concrete barrier rail with moment slab, reinforcement splices if allowed for the chosen MSE wall system, reinforcement connected to end bent caps and obstructions extending through walls or interfering with reinforcement, leveling pads, barriers or moment slabs. Submit design calculations for each wall section with different surcharge loads, geometry or material parameters. At least one analysis is required for each wall section with different reinforcement lengths. When designing MSE walls with computer software other than MSEW, use MSEW, version 3.0 with update 14.93 or later, manufactured by ADAMA Engineering, Inc. to verify the design. At least one MSEW analysis is required per 100 ft of wall length with at least one analysis for the wall section with the longest reinforcement. Submit electronic MSEW input files and PDF output files with design calculations.

C. Preconstruction Meeting

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

4.0 SOIL NAIL PRECONSTRUCTION REQUIREMENTS

A. Soil Nail Wall Designs

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

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

Design soil nail walls in accordance with the plans and allowable stress design method in the *FHWA Geotechnical Engineering Circular No. 7 "Soil Nail Walls"* (Publication No. FHWA-IF-03-017) unless otherwise required. Design soil nail walls for seismic if walls are located in seismic zone 2 based on Figure 2-1 of the *Structure Design Manual*.

Design soil nails that meet the following unless otherwise approved:

1) Horizontal and vertical spacing of at least 3 ft,
2) Inclination of at least 12° below horizontal,
3) Clearance between ends of bars and drill holes of at least 6" and
4) Diameter of 6" to 10".

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

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

Use shotcrete at least 8" thick and reinforce shotcrete with #4 waler bars around nail heads. Two waler bars (one on each side of nail head) in the horizontal and vertical directions are required for a total of 4 bars per nail.

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

Submit working drawings and design calculations including unit grout/ground bond strengths for acceptance in accordance with Article 105-2 of the *Standard Specifications*.

Submit working drawings showing plan views, wall profiles with nail locations including known test nail locations, typical sections and details of nails, drainage, shotcrete, leveling pads and concrete facing. If necessary, include details on working drawings for concrete barrier rail with moment slab and obstructions extending through walls or interfering with nails, barriers or moment slabs. Submit design calculations for each wall section with different surcharge loads, geometry or material parameters. At least one analysis is required for each wall section with different nail lengths.

When designing soil nail walls with computer software other than SnailWin, use SnailWin version 3.10 or later, developed by the California Department of Transportation (CALTRANS) to verify the design. Use SnailWin in accordance with the following:

1) Pre-factored yield stress (150, 75 or 60 ksi) and punching shear for reinforcement (nail) strengths,

2) Allowable bond strengths for bond stress,

3) Default value of 1.0 for bond stress factor, and

4) Pullout controls for all nails, i.e., yield stress or punching shear do not control.

Determine $T_{max\text{-}s}$ from SnailWin as shown in Table D.4 of FHWA GEC 7 and use the factored maximum design nail force ($T_{max\text{-}s}/0.55$) for design. At least one SnailWin analysis is required per 100 ft of wall length with at least one analysis for the wall section with the longest nails. Submit electronic SnailWin input files and PDF output files with design calculations.

B. Soil Nail Wall Construction Plan

Submit 4 copies and a PDF copy of a soil nail wall construction plan at least 30 days before the preconstruction meeting. Do not begin soil nail wall construction until the construction plan submittal is accepted. Provide detailed project specific information in the soil nail wall construction plan that includes the following:

1) Overall description and sequence of soil nail wall construction;

2) List and sizes of excavation equipment, drill rigs and tools, tremies and grouting equipment;

3) Procedures for excavations, drilling and grouting, soil nail and wall drainage system installation and facing construction;

4) Details of shotcrete equipment and application including mix process, test panels, thickness gauges and shooting methods;

5) Shotcrete nozzleman with certification in accordance with Article 1002-1 of the *Standard Specifications*;

6) Plan and methods for nail testing with calibration certificates dated within 90 days of the submittal date;

7) Examples of construction and test nail records to be used in accordance with Sections 4.0(F) and 5.0(E) of this provision;

8) Approved packaged grout or grout mix design with acceptable ranges for flow and density that meets Section 1003 of the *Standard Specifications*;

9) Shotcrete mix design that meets Section 1002 of the *Standard Specifications*; and

10) Other information shown in the plans or requested by the Engineer.

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

C. Preconstruction Meeting

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

5.0 CORROSION MONITORING

Corrosion monitoring is required for SMSE walls with steel reinforcement. The Engineer will determine the number of monitoring locations and where to install the instrumentation. Contact the NCDOT Materials & Tests (M&T) Unit before beginning wall construction. M&T will provide the corrosion monitoring instrumentation kits and assistance with installation, if necessary.

6.0 MSE WALL VENDOR SITE ASSISTANCE

Unless otherwise approved, provide an MSE Wall Vendor representative to assist and guide the MSE Wall Installer on-site for at least 8 hours when the first panels and reinforcement layer are placed. If problems are encountered during construction, the Engineer may require the vendor representative to return to the site for a time period determined by the Engineer.

7.0 CONSTRUCTION METHODS

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

Construct to the tolerances found in Table 4 of FHWA-CFL/TD-06-001.

Perform necessary clearing and grubbing in accordance with Section 200 of the *Standard Specifications*. Excavate as necessary for SMSE walls in accordance with the accepted submittals.

A. MSE Wall Installation

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

Excavate as necessary for MSE walls in accordance with the accepted submittals. If applicable and at the Contractor's option, use temporary shoring for wall construction instead of temporary slopes to construct MSE walls. Define "temporary shoring for wall construction" as temporary shoring not shown in the plans or required by the Engineer including shoring for OSHA reasons or the Contractor's convenience.

Unless required otherwise in the plans, install foundations located in the reinforced zone before placing aggregate or reinforcement. Brace piles in the reinforced zone to maintain alignment when placing and compacting aggregate. Secure piles together with steel members near top of piles. Clamp members to piles instead of welding if bracing is at or below pile cut-off elevations.

Notify the Engineer when foundation excavation is complete. Do not place leveling pad concrete, aggregate or reinforcement until excavation dimensions and foundation material are approved.

Construct cast-in-place concrete leveling pads at elevations and with dimensions shown in the accepted submittals and in accordance with Section 420 of the *Standard Specifications*. Cure leveling pads at least 24 hours before placing panels.

Erect and support panels so the final wall position is as shown in the accepted submittals. Space bearing pads in horizontal panel joints as shown in the accepted submittals and cover all panel joints with filtration geotextiles as shown in the accepted submittals. Attach filtration geotextiles to back of panels with adhesives, tapes or other approved methods.

Construct MSE walls with the following tolerances:

1. Vertical joint widths are 3/4", ±1/4" for panels,
2. Final wall face is within 3/4" of horizontal and vertical alignment shown in the accepted submittals when measured along a 10 ft straightedge and
3. Final wall plumbness (batter) is not negative (wall face leaning forward) and within 0.5° of vertical unless otherwise approved.

Place reinforcement at locations and elevations shown in the accepted submittals and within 3" of corresponding connection elevations. Install reinforcement with the direction shown in the accepted submittals. Place reinforcement in slight tension free of

kinks, folds, wrinkles or creases. Reinforcement may be spliced once per reinforcement length if shown in the accepted submittals. Use reinforcement pieces at least 6 ft long. Contact the Engineer when unanticipated existing or future obstructions such as foundations, guardrail, fence or handrail posts, pavements, pipes, inlets or utilities will interfere with reinforcement. To avoid obstructions, deflect, skew or modify reinforcement as shown in the accepted submittals.

Place aggregate in the reinforced zone in 8" to 10" thick lifts. Compact fine aggregate in accordance with Subarticle 235-3(C) of the *Standard Specifications*. Use only hand operated compaction equipment to compact aggregate within 3 ft of panels. At a distance greater than 3 ft, compact aggregate with at least 4 passes of an 8 ton to 10 ton vibratory roller in a direction parallel to the wall face. Smooth wheeled or rubber tired rollers are also acceptable for compacting aggregate. Do not use sheepsfoot, grid rollers or other types of compaction equipment with feet. Do not displace or damage reinforcement when placing and compacting aggregate. End dumping directly on geosynthetics is not permitted. Do not operate heavy equipment on reinforcement until it is covered with at least 8" of aggregate. Replace any damaged reinforcement to the satisfaction of the Engineer.

Backfill for MSE walls outside the reinforced zone in accordance with Article 410-8 of the *Standard Specifications*. If a drain is required, install wall drainage systems as shown in the accepted submittals and in accordance with Section 816 of the *Standard Specifications*.

Place and construct coping and leveling concrete as shown in the accepted submittals. Construct leveling concrete in accordance with Section 420 of the *Standard Specifications*. Construct cast-in-place concrete coping in accordance with Subarticle 452-3(C) of the *Standard Specifications*. When single faced precast concrete barrier is required in front of and against MSE walls, stop coping just above barrier so coping does not interfere with placing barrier up against wall faces.

When separation geotextiles are required, overlap adjacent geotextiles at least 18" and hold separation geotextiles in place with wire staples or anchor pins as needed. Seal joints above and behind MSE walls between coping and concrete slope protection with silicone sealant.

B. Soil Nail Wall Installation

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.

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

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

1) Excavation

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

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

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

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

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

Do not excavate the next lift until nail installations and testing and shotcrete application for the current lift are accepted and grout and shotcrete for the current lift have cured at least 3 days and 1 day, respectively.

2) Soil Nails

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

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

a) 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.

b) Steel Bars

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

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

c) Grouting

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

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

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

d) 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.

3) Wall Drainage Systems

Install wall drainage systems as shown in the accepted submittals and in accordance with Section 816 of the *Standard Specifications*. Before installing shotcrete

reinforcement, place geocomposite drain strips with the geotextile side against excavation faces. For highly irregular faces and at the discretion of the Engineer, drain strips may be placed after shotcreting over weep holes through the shotcrete. Hold drain strips in place with anchor pins so strips are in continuous contact with surfaces to which they are attached and allow for full flow the entire height of soil nail walls. Discontinuous drain strips are not allowed. If splices are needed, overlap drain strips at least 12" so flow is not impeded. Connect drain strips to leveling pads by embedding strip ends at least 4" into No. 57 stone.

4) 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. Nail head assembly shall have a minimum of 3” of shotcrete cover.

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.

5) Leveling Pads

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

6) Construction Records

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

a) Names of Soil Nail Wall Contractor, Superintendent, Nozzleman, Drill Rig Operator, Project Manager and Design Engineer;

b) Wall description, county, Department's contract, TIP and WBS element number;

c) Wall station and number and lift location, dimensions, elevations and description;

d) Nail locations, dimensions and inclinations, bar types, sizes and grades, corrosion protection and temporary casing information;

e) 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;

f) Grout volume, temperature, flow and density records;

g) Ground and surface water conditions and elevations if applicable;

h) Weather conditions including air temperature at time of grout placement and shotcrete application; and

i) All other pertinent details related to soil nail wall construction.

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

8.0 NAIL TESTING

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

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

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

A. Test Equipment

Use the following equipment to test nails:

1) Two dial gauges with rigid supports,

2) Hydraulic jack and pressure gauge,

3) Jacking block or reaction frame and

4) Electrical resistance load cell (verification tests only).

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

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

B. Test Nails

Test nails include both unbonded and bond lengths. Grout only bond lengths before nail testing. Provide unbonded and bond lengths of at least 3 ft and 10 ft, respectively.

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. Verification Tests

Install verification test nails with the same equipment, installation methods and drill hole diameter and inclination as production nails.

Determine maximum bond length for verification test nails (L_{BVT}) using the following:

$$L_{BVT} \leq (C_{RT} \times A_t \times f_y) / (Q_{ALL} \times 3)$$

Where,
L_{BVT} = bond length (ft),
C_{RT} = reduction coefficient, 0.9 for Grade 60 and 75 bars or 0.8 for Grade 150 bars,
A_t = bar area (in^2),
f_y = bar yield stress (ksi) and
Q_{ALL} = allowable unit grout/ground bond strength (kips/ft).

Determine design test load for verification test nails (DTL_{VT}) based on as-built bond length and allowable unit grout/ground bond strength using the following:

$$DTL_{VT} = L_{BVT} \times Q_{ALL}$$

Where,
DTL_{VT} = design test load (kips).

Perform verification tests by incrementally loading nails to failure or a load of 300% of DTL_{VT} based on the following schedule:

Load	Hold Time
AL*	1 minute
0.25 DTL_{VT}	10 minutes
0.50 DTL_{VT}	10 minutes
0.75 DTL_{VT}	10 minutes
1.00 DTL_{VT}	10 minutes
1.25 DTL_{VT}	10 minutes
1.50 DTL_{VT}	60 minutes (creep test)
1.75 DTL_{VT}	10 minutes
2.00 DTL_{VT}	10 minutes
2.50 DTL_{VT}	10 minutes
3.00 DTL_{VT}	10 minutes
AL*	1 minute

* Alignment load (AL) is the minimum load needed to align test equipment and should not exceed 0.05 DTL_{VT}.

Reset dial gauges to zero after applying alignment load. Record test nail movement at each load increment and permanent set after load is reduced to alignment load. Monitor verification test nails for creep at the 1.5 DTL_{VT} load increment. Measure and record movement during creep test at 1, 2, 3, 5, 6, 10, 20, 30, 50 and 60 minutes. Repump jack as needed to maintain load during hold times.

D. Proof Tests

Determine maximum bond length for proof test nails (L_{BPT}) using the following:

$$L_{BPT} \leq (C_{RT} \times A_t \times f_y) / (Q_{ALL} \times 1.5)$$

Where variables are defined in Section 8.0(C) above.

Determine design test load for proof test nails (DTL_{PT}) based on as-built bond length and allowable unit grout/ground bond strength using the following:

$$DTL_{PT} = L_{BPT} \times Q_{ALL}$$

Where variables are defined in Section 8.0(C) above.

Perform proof tests by incrementally loading nails to failure or a load of 150% of DTL_{PT} based on the following schedule:

Load	Hold Time
AL*	Until movement stabilizes
0.25 DTL_{PT}	Until movement stabilizes
0.50 DTL_{PT}	Until movement stabilizes
0.75 DTL_{PT}	Until movement stabilizes
1.00 DTL_{PT}	Until movement stabilizes
1.25 DTL_{PT}	Until movement stabilizes
1.50 DTL_{PT}	10 or 60 minutes (creep test)
AL*	1 minute

* Alignment load (AL) is the minimum load needed to align test equipment and should not exceed 0.05 DTL_{PT}.

Reset dial gauges to zero after applying alignment load. Record test nail movement at each load increment and monitor proof test nails for creep at the 1.5 DTL_{PT} load increment. Measure and record movement during creep test at 1, 2, 3, 5, 6 and 10 minutes. If test nail movement between 1 and 10 minutes is greater than 0.04", maintain the 1.5 DTL_{PT} load increment for an additional 50 minutes and record movement at 20, 30, 50 and 60 minutes. Repump jack as needed to maintain load during hold times.

E. Test Nail Acceptance

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

1) For verification tests, total movement during creep test is less than 0.08" between the 6 and 60 minute readings and creep rate is linear or decreasing throughout hold time.
2) For proof tests, total movement during creep test is less than 0.04" between the 1 and 10 minute readings or less than 0.08" between the 6 and 60 minute readings and creep rate is linear or decreasing throughout hold time.
3) Total movement at maximum load exceeds 80% of the theoretical elastic elongation of the unbonded length.
4) Pullout failure does not occur at or before the 2.0 DTL_{VT} or 1.5 DTL_{PT} load increment. Define “pullout failure” as the inability to increase load while movement continues. Record pullout failure load as part of test nail data.

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

If the Engineer determines a verification test nail is unacceptable, revise the soil nail design or installation methods. Submit a revised soil nail wall design or construction

plan for acceptance and provide acceptable verification test nails with the revised design or installation methods.

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

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

9.0 MEASUREMENT AND PAYMENT

SMSE Retaining Wall will be measured and paid in square feet. SMSE walls will be measured as the square feet of wall face area with the pay height equal to the difference between top of wall and top of leveling pad elevations. Define "top of wall" as top of coping or top of panels for MSE walls without coping. No payment will be made for the Soil Nail Wall part of the SMSE wall.

The contract unit price for SMSE Retaining Wall will be full compensation for providing designs, submittals, labor, tools, equipment and SMSE wall materials, excavating, backfilling, hauling and removing excavated materials and supplying site assistance, leveling pads, panels, reinforcement, aggregate, wall drainage systems, geotextiles, bearing pads, coping, miscellaneous components and any incidentals necessary to construct SMSE walls. The contract unit price for SMSE Retaining Wall will also be full compensation for reinforcement connected to and aggregate behind end bent caps in the reinforced zone, wall modifications for obstructions, pile sleeves filled with sand, joints sealed with silicone sealant and gaps between barriers and MSE walls filled with backer rod or No. 78M stone, if required.

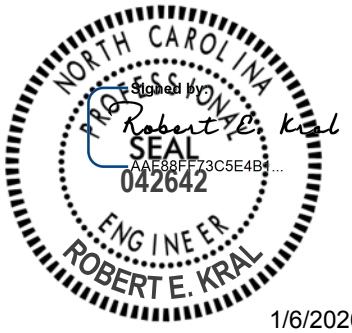
No separate payment will be made for temporary shoring for wall construction. Temporary shoring for wall construction will be incidental to the contract unit price for MSE Retaining Wall. *Temporary Shoring* for undercut excavation will be paid as additional work in accordance with the Temporary Soil Nail Walls Special Provision.

The contract unit price for SMSE Retaining Wall does not include the cost for ditches, fences, handrails, barrier or guardrail associated with MSE walls as these items will be paid for elsewhere in the contract.

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

Payment will be made under:

Pay Item	**Pay Unit**
Shored MSE Retaining Wall	Square Foot



1/6/2026

MICROPILE GRADE BEAM (SPECIAL)

1.0 GENERAL

This project includes construction of an array of micropiles connected to a grade beam, load transfer platform, knee wall, footing, or leveling course, which serve to stabilize existing or potential slope instability and support future wall construction or roadway widening. A micropile is a small diameter, drilled and grouted non-displacement pile. Micropiles are designed and constructed with reinforcing casing and typically a center reinforcing bar. Design and construct micropiles with the required capacity in accordance with the contract and accepted submittals. Use a prequalified Micropile Subcontractor for micropile work. Define "pile" as a micropile and "footing" as a micropile grade beam, load transfer platform, knee wall, footing, or leveling course.

2.0 MATERIALS

Refer to the *Standard Specifications*.

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

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

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

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

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

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

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

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

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

3.0 PRECONSTRUCTION REQUIREMENTS

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

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

A. Micropile Footing Design Submittal

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

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

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

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

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

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

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

B. Micropile Installation and Testing Plan Submittal

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

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

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

until a revised plan is accepted.

C. Preconstruction Meeting

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

4.0 CONSTRUCTION METHODS

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

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

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

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

A. Drilling and Reinforcement

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

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

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

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

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

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

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

B. Grouting

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

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

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

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

C. Micropile Footing

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

D. Construction Records

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

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

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

5.0 LOAD TESTING

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

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

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

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

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

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

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

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

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

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

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

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

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

6.0 MICROPILE ACCEPTANCE

Micropile acceptance is based in part on the following criteria.

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

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

7.0 MEASUREMENT AND PAYMENT

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

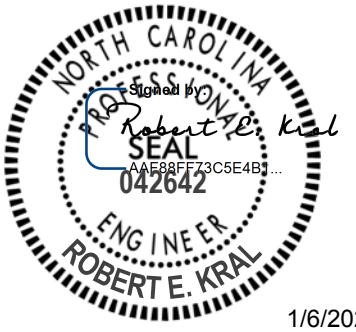
The contract unit prices for *Load Transfer Platform* will be full compensation for all labor, materials, tools, equipment, and incidentals necessary to complete the work as shown on the plans and as specified in the contract documents. This includes, but is not limited to, submittals, design, monitoring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

The contract unit prices for *Load Transfer Platform* will also include all costs associated with demonstration micropiles, micropile verification tests, and micropile proof tests. No separate

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

Payment will be made under:

Pay Item	**Pay Unit**
Load Transfer Platform	Linear Feet



1/6/2026

ANCHORED SHEET PILE RETAINING WALLS (SPECIAL)

1.0 GENERAL

Construct permanent anchored sheet pile retaining walls consisting of steel sheet piles supported by ground anchors. Ground anchors, also referred to as "anchors" or "tiebacks," shall consist of steel bars or multi-strand tendons installed in drilled holes, grouted in place, and inclined at an angle below horizontal. Provide cast-in-place (CIP) reinforced concrete coping where indicated or required.

Construct anchored sheet pile retaining walls to the actual field elevations and wall dimensions, with embedment below the bottom of wall elevations as shown in the Contract Documents and in accordance with accepted submittals. For purposes of these Specifications, the term "anchored wall" shall mean an anchored sheet pile retaining wall, and the "Anchored Wall Contractor" shall refer to the Contractor responsible for installation of the ground anchors. The term "pile" shall refer to a steel sheet pile.

2.0 MATERIALS

Refer to the *Standard Specifications*.

Item	Section
Asphalt Concrete Base Course, Type B25.0C	620
Flowable Fill, Excavatable	1000-7
Geosynthetics	1056
Grout Production and Delivery	1003
Joint Filler	1028-1
Low Modulus Silicone Sealant	1028-3
Portland Cement	1024-1
Portland Cement Concrete Production and Delivery, Class A	1000
Reinforcing Steel	1070
Select Materials, Class VI	1016
Steel Sheet Piles	1084-1
Steel Plates	1072-2
Water	1024-4

Provide Type 2 geotextile for separation geotextiles, Class A concrete for concrete facing and Class VI select material (standard size No. 57 stone) for backfilling.

For ground anchors, use Type 5 grout.

Provide anchors consisting of grouted steel bars or multi-strand tendons and anchorages. 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 *Standard Specifications*. Splice bars in accordance with Article 1070-9 of the *Standard Specifications*. Do not splice strands.

Provide Class I corrosion protection (encapsulated tendon) for anchors in accordance with *FHWA Geotechnical Engineering Circular No. 4 "Ground Anchors and Anchored Systems"*

(Publication No. FHWA-IF-99-015). Use grease and grout filled sheaths for unbonded lengths of anchors and encapsulation for bond lengths of anchors that meet Article 6.3.4 of the *AASHTO LRFD Bridge Construction Specifications*. Provide trumpets with seals that meet Articles 6.3.3 and 6.4.3 of the AASHTO LRFD specifications. Use bond breakers, spacers, and centralizers that meet Article 6.3.5 of the AASHTO LRFD specifications.

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

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

3.0 PRECONSTRUCTION REQUIREMENTS

A. Anchored Wall Surveys

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

B. Anchored Wall Designs

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

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

Design anchored walls in accordance with the plans and the *AASHTO LRFD Bridge Design Specifications* unless otherwise required. Design anchored walls for a maximum lateral movement of 2" or 0.5% of H, whichever is less, with H as shown in the plans.

For abutment walls only, design anchored walls for seismic if wall sites meet either or both of the following:

- Wall site is in seismic zone 2 based on Figure 2-1 of the *Structure Design Manual*,
- Wall site is classified as AASHTO Site Class E, as noted in the plans, and is in or west of Pender, Duplin, Wayne, Johnston, Wake, Durham or Person County.

Design anchors that meet the following unless otherwise approved:

1. Bond length of at least 15 ft in soil and 10 ft in rock where rock is as determined by the Engineer,
2. Unbonded length of at least 15 ft and unbonded length behind critical failure surface of at least 5 ft or H/5, whichever is longer,
3. Inclination of at least 12° below horizontal,
4. Clearance between ends of tendons and drill holes of at least 6",
5. Grout cover between encapsulation and drill hole walls of at least 1/2" and
6. Diameter of 6" to 10".

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

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

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

Submit working drawings and design calculations including unit grout/ground bond strengths and lock-off loads for acceptance in accordance with Article 105-2 of the *Standard Specifications*. Submit working drawings showing plan views, wall profiles with pile and anchor locations including known performance test anchor locations, typical sections and details of piles including reinforced web details, anchors, drainage, temporary support, leveling pads and concrete facing. If necessary, include details on working drawings for concrete barrier rail with moment slab and obstructions extending

through walls or interfering with piles, anchors, barriers or moment slabs. Submit design calculations including lateral movement calculations for each wall section with different surcharge loads, geometry or material parameters. Include analysis of temporary conditions in design calculations. At least one analysis is required for each wall section with different anchor lengths. When designing anchored walls with computer software, a hand calculation is required for the wall section with the longest anchors.

C. Anchored Wall Construction Plan

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

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

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

D. Preconstruction Meeting

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

4.0 CONSTRUCTION METHODS

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

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

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

A. Sheet Pile Installation

Install sheet piles with tolerances that meet Subarticles 450-3(B)(1) and 450-3(B)(2). Install sheet piles with the minimum required pile tip elevations in accordance with Subarticle 450-3(D).

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

B. Anchors

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

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

1. Performance tests are required for at least 2 anchors or 5% of total anchors, whichever is greater, for each anchored wall instead of the requirements in Article 6.5.5.2 of the AASHTO LRFD specifications.
2. Electrical resistance load cells are required for performance tests.
3. An additional load increment equal to the alignment load (AL) is required between

the maximum test and lock-off loads in Table 6.5.5.2-1 of the AASHTO LRFD specifications.

4. Competent rock in Article 6.5.5.5 of the AASHTO LRFD specifications will be as determined by the Engineer.
5. The lock-off load is as shown in the accepted submittals.

The Engineer will determine the number and locations of performance tests required. The approximate known performance test anchor locations are shown in the plans. Submit identification numbers and calibration records for load cells, jacks and pressure gauges with the anchored wall construction plan. Calibrate each jack and pressure gauge as a unit.

C. Concrete Coping

Construct CIP concrete coping in accordance with Section 420. Do not remove falsework until concrete attains a compressive strength of at least 2,400 psi. Provide a Class 2 surface finish for coping that meets Subarticle 420-17(F). Construct coping joints at a maximum spacing of 10 feet. Make 1/2-inch-thick expansion joints that meet Article 420-10 for every third joint and 1/2-inch-deep-grooved contraction joints that meet Subarticle 825-10(B) for the remaining joints. Stop coping reinforcement 2 inches on either side of expansion joints.

D. Backfilling and Sealing Joints

When concrete coping is required, do not backfill behind anchored sheet pile walls until concrete attains a compressive strength of at least 3,000 psi. Backfill for anchored sheet pile walls in accordance with Article 410-8.

Seal joints above and behind anchored sheet pile walls between coping and slope protection with silicone sealant.

E. Construction Records

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

1. Names of Anchored Wall Contractor, Superintendent, Drill Rig Operator, Project Manager, and Design Engineer;
2. Wall description, county, Department’s contract, TIP and WBS element number;
3. Wall station and number and lift location, dimensions, elevations and description;
4. Anchor locations, dimensions and inclinations, tendon types, sizes and grades, corrosion protection and temporary casing information;
5. Date and time drilling begins and ends, tendons are inserted into drill holes, neat cement grout is mixed and arrives on-site and grout placement 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;
9. Anchor testing records including load versus movement and time versus creep movement plots; and
10. All other pertinent details related to anchored wall construction.

The Engineer will review the construction records to determine if anchors are acceptable. If the Engineer determines an anchor is unacceptable, revise the anchor design or installation methods. Submit a revised anchored wall design or construction plan for acceptance and provide an acceptable anchor with the revised design or installation methods. If necessary, provide additional anchors with the revised design or installation methods for the unacceptable anchors.

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

5.0 MEASUREMENT AND PAYMENT

Anchored Sheet Pile Retaining Walls will be measured and paid in square feet. Anchored walls will be measured as the square feet of wall face area with the pay height equal to the difference between top and bottom of wall elevations. Define "top of wall" as top of coping or top of piles for sheet pile walls without coping. Define "bottom of wall" as where finished grade intersects the front of sheet piles and no measurement will be made for portions of sheet pile walls below bottom of wall elevations.

The contract unit price for *Anchored Sheet Pile Retaining Walls* will be full compensation for providing designs, submittals, labor, tools, equipment, and anchored wall materials, installing piles and anchors, grouting, anchor testing, excavating, hauling and removing excavated materials, placing and compacting No. 57 stone and backfill material and supplying temporary support of excavations, No. 57 stone, geotextiles, aggregate concrete base course, and any incidentals necessary to construct anchored walls. No additional payment will be made and no extension of completion date or time will be allowed for repairing overexcavations or unstable excavations, unacceptable anchors, or thicker concrete coping.

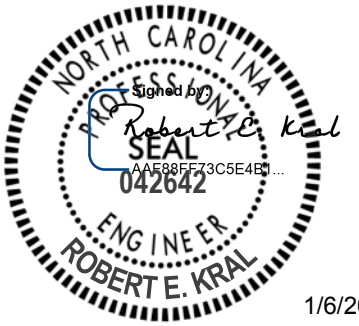
The contract unit price for *Anchored Sheet Pile Retaining Walls* does not include the cost for ditches, fences, handrails, barrier or guardrail associated with anchored walls as these items will be paid for elsewhere in the contract.

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

Payment will be made under:

Pay Item
Anchored Sheet Pile Retaining Walls

Pay Unit
Square Foot



1/6/2026

Signed by:
Matthew V. Springer
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07/12/2023

INTEGRATED MULTIPOLYMER (IMP) PAVEMENT MARKING:

(7-12-23)

Description

This work consists of applying Integrated Multipolymer (IMP) pavement marking to all road surfaces using standard thermoplastic application equipment. A primer shall be used for concrete and any aged asphalt surfaces as required by the Engineer. Retroreflectivity shall be obtained through intermix and drop-on reflective media. Both intermix and drop-on reflective media are required.

Materials

IMP pavement marking material shall conform to the applicable requirements of Section 1087 of the *Standard Specifications*. The installer shall use an integrated multipolymer listed in the NCDOT APL.

Construction Methods

(A) Surface Preparation

Remove any existing pavement markings and remove any material that would prevent the IMP pavement markings from bonding correctly. Use a removal method approved by the Engineer. On concrete surfaces and any aged asphalt surfaces required by the Engineer, apply a primer in accordance with manufacturer's recommendation. Protect primer from traffic until dry to a slightly tacky state before application of IMP. Premarking will be incidental to other items in the contract. Unless directed by the Engineer, there will be no direct payment for interim paint.

(B) Application

Material preparation and application temperatures should be in accordance with manufactures specification. Do not apply when the temperatures are at or near the dew point. Apply a test strip to determine if the surface is dry enough if there has been rain in the last 24

hours. Only apply markings to dry clean surfaces. Apply pavement markings using the specifications found in Section 1205-3 of the *Standard Specifications*. Equipment, weather and seasonal limitations, application, and observation period shall be in accordance with Article 1205-4 of the *Standard Specifications*. For minimum initial retroreflectivity requirements, see the chart below.

MINIMUM RETROREFLECTIVITY REQUIRMENTS FOR INTEGRATED MULTIPOLYMER	
Color	**Reflectivity**
White	425 mcd/lux/m^2
Yellow	325 mcd/lux/m^2

(C) Dry Time

Ensure installed material is track free in accordance with the manufacturer's recommendations before exposing to traffic.

Measurement and Payment

Integrated Multipolymer Pavement Marking Line, __ " Width, __mils Thick will be measured and paid as the actual number of linear feet of pavement marking lines satisfactorily placed and accepted by the Engineer. The quantity of solid lines will be the summation of the linear feet of solid line measured end-to-end of the line. The quantity of skip or broken lines will be the summation of the linear feet derived by multiplying the nominal length of a line by the number of marking lines satisfactorily placed.

Integrated Multipolymer Pavement Marking Characters and *Integrated Multipolymer Pavement Marking Symbols* will be paid as the actual number of symbols and characters satisfactorily placed and accepted by the Engineer.

Such prices and payment will be full compensation for all work covered by this section including, but not limited to, furnishing, surface preparation, primer, reapplication of molten pavement marking crossed by a vehicle, and removal of all pavement marking materials spilled on the roadway surface.

Payment will be made under:

Pay Item	**Pay Unit**
Integrated Multipolymer Pavement Marking Lines, __", __ mils	Linear Foot
Integrated Multipolymer Pavement Marking Symbols, __ mils	Each
Integrated Multipolymer Pavement Marking Characters, __ mils	Each

PROJECT SPECIAL PROVISIONS
Utilities by Others

TELICS

1598 Westbrook Plaza Dr, Suite 202
Winston-Salem, NC 27103
Voice: (336) 705-8844
www.telics.com

General:

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

A) Duke Energy – Distribution Power
B) Riverstreet – Communications

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

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

Utilities Requiring Adjustment:

Utility relocations are shown on the Utilities by Others Plans.

A) Duke Energy – Distribution Power

1) Contact person for Duke Energy is Austin Paysinger (864) 906-6657, apaysinger@duke-energy.com. Alternative contact is Bob Mabry (828) 698-2055, bob.mabry@duke-energy.com.

- Anticipated start after R/W completion. June 1, 2026, and completed by August 3, 2026.

PROJECT SPECIAL PROVISIONS
Utilities by Others

B) Riverstreet – Communications

1) Contact person for Riverstreet is Jacob Smith (336) 973-7100, jacob.smith@myriverstreet.net.

- Anticipated start after Duke completion. August 3, 2026, and completed by October 5, 2026.

Project Special Provisions
Erosion Control

STABILIZATION REQUIREMENTS:

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

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

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

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

SEEDING AND MULCHING: (WestEd)

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

Shoulder and Median Areas

August 1 - June 1		**May 1 - September 1**	
20#	Kentucky Bluegrass	20#	Kentucky Bluegrass
75#	Hard Fescue	75#	Hard Fescue
25#	Rye Grain	10#	German or Browntop Millet
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Areas Beyond the Mowing Pattern, Waste and Borrow Areas:

August 1 - June 1		**May 1 - September 1**	
100#	Tall Fescue	100#	Tall Fescue
15#	Kentucky Bluegrass	15#	Kentucky Bluegrass
30#	Hard Fescue	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	Kalahari	Serengeti
2nd Millennium	Essential	Kitty Hawk 2000	Shelby
3rd Millennium	Evergreen 2	Legitimate	Shenandoah III
Avenger	Faith	Lexington	Shenandoah Elite
Bar Fa	Falcon IV	LifeGuard	Sheridan
Barlexas	Falson NG	LSD	Sidewinder
Barlexas II	Falcon V	Magellan	Signia
Barrera	Fat Cat	Masterpiece	Silver Hawk
Barrington	Fesnova	Millennium SRP	Skyline
Barrobusto	Fidelity	Monet	Solara
Barvado	Finelawn Elite	Mustang 4	Southern Choice II
Biltmore	Finelawn Xpress	Naturally Green	Speedway
Bingo	Finesse II	Ninja 2	Spyder LS
Bizem	Firebird	Ol' Glory	Sunset Gold
Black Tail	Firecracker LS	Padre	Taccoa
Blackwatch	Firenza	Patagonia	Tahoe II
Blade Runner II	Five Point	Pedigree	Talladega
Bonsai	Focus	Picasso	Tanzania
Braveheart	Forte	Piedmont	Temple
Bravo	Garrison	Plantation	Terrano
Bullseye	Gazelle II	Proseeds 5301	Thor
Cannavaro	GLX Aced	Prospect	Thunderstruck
Catalyst	Gold Medallion	Quest	Titanium LS
Cayenne	Grande 3	RainDance	Titan LTD
Cezanne RZ	Greenbrooks	Raptor II	Tracer
Chipper	Greenkeeper	Rebel IV	Traverse SRP
Cochise IV	Gremlin	Rebel Exeda	Trio
Constitution	Greystone	Rebel Sentry	Tulsa Time
Corgi	Guardian 21	Regenerate	Turbo
Corona	Guardian 41	Regiment II	Turbo RZ
Coyote	Hemi	Rembrandt	Tuxedo
Cumberland	Honky Tonk	Rendition	Ultimate
Darlington	Hot Rod	Reunion	Umbrella
DaVinci	Hunter	Rhambler 2 SRP	Van Gogh

Desire	Inferno	Riverside	Venture
Diablo	Integrity	RNP	Watchdog
Dominion	Jaguar 3	Rocket	Wolfpack II
Dynamic	Jamboree	Saltillo	Xtremegreen
Dynasty	Justice	Scorpion	

Approved Kentucky Bluegrass Cultivars:

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

Approved Hard Fescue Cultivars:

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

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

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

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

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		**May 1 – September 1**	
18#	Creeping Red Fescue	18#	Creeping Red Fescue
8#	Big Bluestem	8#	Big Bluestem
6#	Indiangrass	6#	Indiangrass
4#	Switchgrass	4#	Switchgrass
35#	Rye Grain	25#	German or Browntop Millet
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	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 ¾" and larger in diameter or other obstructions that could interfere with providing a smooth lawn type appearance. These areas shall be reseeded to match their original vegetative conditions, unless directed otherwise by the Field Operations Engineer.

REFORESTATION:

Description

Reforestation will be planted in areas as directed. *Reforestation* is not shown on the plan sheets. See the Reforestation Detail Sheet.

All non-maintained riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated with native woody species.

The entire *Reforestation* operation shall comply with the requirements of Section 1670 of the *Standard Specifications*.

Materials

Reforestation shall be bare root seedlings 12"-18" tall.

Construction Methods

Reforestation shall be planted as soon as practical following permanent S*eeding and Mulching*. The seedlings shall be planted in a 16-foot wide swath adjacent to mowing pattern line, or as directed.

Root dip: The roots of reforestation seedlings shall be coated with a slurry of water, and either a fine clay (kaolin) or a superabsorbent that is designated as a bare root dip. The type, mixture ratio, method of application, and the time of application shall be submitted to the Engineer for approval.

With the approval of the Engineer, seedlings may be coated before delivery to the job or at the time of planting, but at no time shall the roots of the seedlings be allowed to dry out. The roots shall be moistened immediately prior to planting.

Seasonal Limitations: *Reforestation* shall be planted from November 15 through March 15.

Measurement and Payment

Reforestation will be measured and paid for in accordance with Article 1670-17 of the *Standard Specifications*.

ENVIRONMENTALLY SENSITIVE AREAS:

Description

This project is located in an *Environmentally Sensitive Area*. This designation requires special procedures to be used for clearing and grubbing, temporary stream crossings, and grading operations within the Environmentally Sensitive Areas identified on the plans and as designated

by the Engineer. This also requires special procedures to be used for seeding and mulching and staged seeding within the project.

The Environmentally Sensitive Area shall be defined as a 50-foot buffer zone on both sides of the stream or depression measured from top of streambank or center of depression.

Construction Methods

(A) Clearing and Grubbing

In areas identified as Environmentally Sensitive Areas, the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Article 200-1 of the *Standard Specifications*. Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.

(B) Grading

Once grading operations begin in identified Environmentally Sensitive Areas, work shall progress in a continuous manner until complete. All construction within these areas shall progress in a continuous manner such that each phase is complete and areas are permanently stabilized prior to beginning of next phase. Failure on the part of the Contractor to complete any phase of construction in a continuous manner in Environmentally Sensitive Areas will be just cause for the Engineer to direct the suspension of work in accordance with Article 108-7 of the *Standard Specifications*.

(C) Temporary Stream Crossings

Any crossing of streams within the limits of this project shall be accomplished in accordance with the requirements of Subarticle 107-12 of the *Standard Specifications*.

(D) Seeding and Mulching

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

Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the Environmentally Sensitive Areas.

(E) Stage Seeding

The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes that are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above.

Additional payments will not be made for the requirements of this section, as the cost for this work shall be included in the contract unit prices for the work involved.

MINIMIZE REMOVAL OF VEGETATION:

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

CONSTRUCTION MATERIALS MANAGEMENT

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

Description

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

Polyacrylamides (PAMS) and Flocculants

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

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

Equipment Fluids

Fuels, lubricants, coolants, and hydraulic fluids, and other petroleum products shall be handled and disposed of in a manner so as not to enter surface or ground waters and in accordance with applicable state and federal regulations. Equipment used on the site must be operated and maintained properly to prevent discharge of fluids. Equipment, vehicle, and other wash waters

shall not be discharged into E&SC basins or other E&SC devices. Alternative controls should be provided such that there is no discharge of soaps, solvents, or detergents.

Waste Materials

Construction materials and land clearing waste shall be disposed of in accordance with North Carolina General Statutes, Chapter 130A, Article 9 - Solid Waste Management, and rules governing the disposal of solid waste (15A NCAC 13B). Areas dedicated for managing construction material and land clearing waste shall be at least 50 feet away from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. Paint and other liquid construction material waste shall not be dumped into storm drains. Paint and other liquid construction waste washouts should be located at least 50 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*.

TEMPORARY EARTH BERMS:
(Rev. 12-23-25)

Description

Install, maintain and remove any and all material required for the construction of temporary earth berms. The temporary earth berms shall be used to direct the flow of water to specific erosion control device(s), or to direct water flowing from offsite around/away from specific area(s) of construction. Construct temporary earth berms in accordance with Section 1620 and Section 230 of the *Standard Specifications*, the plans and this special provision.

Materials

Use materials meeting the requirements of Article 1620-2 and Article 230-3 of the *Standard Specifications*.

Construction Methods

Install the temporary earth berms in accordance with Article 230-4 of the *Standard Specifications*, the details in the plans, at locations indicated in the plans, and as directed by the Engineer. Upon installation, the earth berms shall be immediately stabilized as provided in Section 1620 of the *Standard Specifications*. Other stabilization methods may be utilized with prior approval from the Engineer.

Remove the temporary earth berms upon completion of the project or as directed by the Engineer. The earth material may be utilized in the filling of silt ditches and detention devices, or graded to match the existing contours and permanently seeded and mulched.

Measurement and Payment

The installation of the temporary earth berms will be paid for as *Borrow Excavation* in accordance with Article 230-5 of the *Standard Specifications* or included in the lump sum price for *Grading* in accordance with Article 226-3 of the *Standard Specifications*.

Stabilization of the temporary earth berms will be paid for as *Seed for Temporary Seeding* and *Fertilizer for Temporary Seeding* in accordance with Article 1620-4 of the *Standard Specifications*.

Such price and payment shall be considered full compensation for all work covered by this section including all materials, construction, maintenance, and removal of the temporary earth berms.

SAFETY FENCE AND JURISDICTIONAL FLAGGING:

Description

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

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

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

Materials

(A) Safety Fencing

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

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

(B) Boundary Flagging

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

Construction Methods

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

(A) Safety Fencing

Posts shall be set at a maximum spacing of 10 ft., maintained in a vertical position and hand set or set with a post driver. Posts shall be installed a minimum of 2 ft. into the ground. If hand set, all backfill material shall be thoroughly tamped. Wood posts may be sharpened to a dull point if power driven. Posts damaged by power driving shall be removed and replaced prior to final acceptance. The tops of all wood posts shall be cut at a 30-degree angle. The wood posts may, at the option of the Contractor, be cut at this angle either before or after the posts are erected.

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

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

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

(B) Boundary Flagging

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

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

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

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

Measurement and Payment

Safety Fence will be measured and paid as the actual number of linear feet of polyethylene or polypropylene fence installed in place and accepted. Such payment will be full compensation including but not limited to furnishing and installing fence geotextile with necessary posts and post bracing, staples, tie wires, tools, equipment and incidentals necessary to complete this work.

Payment will be made under:

Pay Item	**Pay Unit**
Safety Fence	Linear Foot

PERMANENT SOIL REINFORCEMENT MAT:
9-1-2011 (Rev. 8-20-24)

Description

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

Materials

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

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

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

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

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

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

Construction Methods

All areas to be protected with the PSRM shall be brought to final grade and prepared in accordance with Section 1660 of the *Standard Specifications*. The surface of the soil shall be smooth, firm, stable and free of rocks, clods, roots or other obstructions that would prevent the mat from lying in direct contact with the soil surface. Preserve the required line, grade and cross section of the area covered. Unroll the PSRM in the direction of the flow of water and apply without stretching so that it will lie smoothly but loosely on the soil surface. Bury the up-channel or top of slope end of each piece of PSRM in a narrow trench at least 6 inches deep and tamp firmly. Where one roll of matting ends and a second-roll begins, overlap the end of the upper roll over the beginning of the second roll so there is a 6 inch overlap. Install staple checks 4 inches on center and every 30 feet longitudinally in the matting or as directed by the Engineer. Fold over and bury matting to the full depth of the trench, close and tamp firmly. Overlap matting at least 4 inches where 2 or more widths of matting are laid side by side.

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

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

Measurement and Payment

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

Payment will be made under:

Pay Item	Pay Unit
Permanent Soil Reinforcement Mat, Type __	Square Yard

IMPERVIOUS DIKE:
(9-9-11)(Rev. 11-15-22)

Description

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

Materials

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

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

Construction Methods

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

Measurement and Payment

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

Payment will be made under:

Pay Item	Pay Unit
Impervious Dike	Linear Foot

PUMP AROUND OPERATION:

Description

The work covered by this section consists of furnishing, installing, maintaining and removing any and all pump around systems used on this project. The Contractor shall install a pump around system in locations as shown in the plans and in other locations approved by the Engineer. The pump around system shall provide a passageway for the stream flow around the work site. See the Example of Pump Around Operation Detail Sheet in the Erosion Control plans.

The quantity of pump around systems may be increased, decreased, or eliminated entirely as directed. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

Materials

Item	Section
Special Stilling Basin	1639

Impervious Dike shall meet the specifications as provided elsewhere in this contract.

Pumps shall be of sufficient size to divert the stream flow around the work area, as approved by the Engineer.

Construction Methods

Install *impervious dike(s)* as shown on the plans or as directed. Pump water around the work site. If the water is turbid or exposed to bare soil, pump through a *special stilling basin*. Once the work is complete in an area remove the *impervious dike(s)* and pump system, and stabilize the area.

Measurement and Payment

Impervious Dike will be measured and paid for as provided elsewhere in this contract.

Special Stilling Basin will be measured and paid for in accordance with Article 1639-4 of the *Standard Specifications*.

Payment for pumping operations shall be considered incidental to the work of installing pipes, culverts and channels. The pumping operations shall include but not be limited to, diverting the stream flow around the work area and pumping runoff from the work area into a stilling basin, special stilling basin or other sediment control device. No additional payment will be made for furnishing materials or maintenance of the pumping operations for the installation of pipes, culverts and channels.

The above prices and payments will be full compensation for all work covered by this section including, but not limited to furnishing all of the necessary materials, construction, maintenance and removal of the impervious dike and pump around system.

CONCRETE WASHOUT:
(10-22-15)(Rev. 4-15-25)

Description

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

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

Materials

Refer to Division 10 of the *Standard Specifications*.

Item	Section
Temporary Silt Fence	1605

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

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

Construction Methods

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

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

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

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

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

Maintenance and Removal

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

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

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

Measurement and Payment

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

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

Prefabricated Concrete Washout, and dispose of residual concrete washout wastewater and concrete solids.

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

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

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

Payment will be made under:

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

FABRIC INSERT INLET PROTECTION

(1-1-24)

Description

Install, maintain, and remove Fabric Insert Inlet Protection, 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 by the Engineer.

Materials

Provide a fabric inlet protection device composed of a fitted woven polypropylene geotextile double sewn with nylon thread suspended sack. The Fabric Insert Inlet Protection 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 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 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 fitted filter assembly shall have the following physical properties:

Type 1 (High Flow):

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^2
Apparent Opening	ASTM D-4751	20 US Sieve
Permittivity	ASTM D-4491	1.5 sec^{-1}

Type 2 (Low Flow):

Physical	**Test Method**	**English**
Grab Tensile	ASTM D-4632	315 x 300 lbs
Grab Elongation	ASTM D-4632	15 x 15 %
Minimum Puncture Strength	ASTM D-4833	125 lbs
Mullen Burst	ASTM D-3786	650 PSI
Minimum UV Resistance	ASTM D-4355	70 %.
Flow Rate	ASTM D-4491	40 gal/min/ft^2
Apparent Opening	ASTM D-4751	40 US Sieve
Permittivity	ASTM D-4491	0.55 sec^{-1}

Construction Methods

Strictly adhere to the manufacturer's installation instructions and recommendations. Maintenance shall include regular daily inspections and after each qualifying rain event. The Fabric Insert Inlet Protection shall be emptied, cleaned and placed back into the basin when it reaches 50% capacity or as directed by the Engineer.

Measurement and Payment

Fabric Insert Inlet Protection, Type __ will be measured and paid in units of each of the type specified, complete in place and accepted. Such payment shall be full compensation for furnishing and installing the *Fabric Insert Inlet Protection, Type* __ in accordance with this specification and for all required maintenance.

Fabric Insert Inlet Protection Cleanout will be measured and paid in units of each for the maintenance of the device, cleanout and disposal of accumulated sediments.

Payment will be made under:

Pay Item	**Pay Unit**
Fabric Insert Inlet Protection, Type __	Each
Fabric Insert Inlet Protection Cleanout	Each

Project Special Provisions
Structures

Falsework and Formwork (11-30-23) …… ST-2
Submittal of Working Drawings (1-31-25) …… ST-7
Crane Safety (12-05-25) …… ST-13
Grout for Structures (12-1-17) …… ST-14
Shotcrete Repairs (11-30-23) …… ST-15
Flowable Fill (Structures) (SPECIAL) …… ST-19
Elastomeric Concrete for Preservation (2-11-19) …… ST-20
Foam Joint Seals for Preservation (7-16-24) …… ST-22
Bridge Joint Demolition (11/30/23) …… ST-25
Partial Removal of Existing Structure (SPECIAL) …… ST-26
Precast Approach Slabs (SPECIAL) …… ST-27
Streambank Restoration (SPECIAL) …… ST-28
Timber Bridge Rail System (SPECIAL) …… ST-29
Timber Bridge Flashing Membrane (SPECIAL) …… ST-30

NORTH CAROLINA PROFESSIONAL SEAL 020125 ENGINEER MARSHALL G. CHEEK, JR

Signed by:
Marshall G. Cheek, Jr.
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3/17/2026

PROJECT SPECIAL PROVISIONS – STRUCTURES

FALSEWORK AND FORMWORK (11-30-23)

GENERAL

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

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

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

MATERIALS

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

DESIGN REQUIREMENTS

(A) Working Drawings

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

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

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

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

If requested by the Engineer, submit with the working drawings manufacturer's catalog data listing the weight of all construction equipment that will be supported on the temporary work. Show anticipated total settlements and/or deflections of falsework and forms on the working drawings. Include falsework footing settlements, joint take-up, and deflection of beams or girders.

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

Member Type (PCG)	Member Depth, (inches)	Max. Overhang Width, (inches)	Max. Slab Edge Thickness, (inches)	Max. Screed Wheel Weight, (lbs.)	Bracket Min. Vertical Leg Extension, (inches)
II	36	39	14	2000	26
III	45	42	14	2000	35
IV	54	45	14	2000	44
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 ½" from the edge of the top flange. Hanger hardware and rods must have a minimum safe working load of 6,000 lbs.

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

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

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

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

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

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 ¾".

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

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

(1) Wind Loads

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

Table 2.2 - Wind Pressure Values

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

(2) Time of Removal

The following requirements replace those of Article 3.4.8.2.

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

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

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.

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.

REMOVAL

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

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

MEASUREMENT AND PAYMENT

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

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

SUBMITTAL OF WORKING DRAWINGS (1-31-25)

GENERAL

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

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

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

ADDRESSES AND CONTACTS

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

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

Via US mail:

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

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

Via other delivery service:

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

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

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

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

Via Email: EastGeotechnicalSubmittal@ncdot.gov

Via US mail:

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

Via other delivery service:

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

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

Via Email: WestGeotechnicalSubmittal@ncdot.gov

Via US mail or other delivery service:

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

The status of the review of structure-related submittals sent to the Structures Management Unit can be viewed from the Unit's website, via the "Drawing Submittal Status" link.

The status of the review of geotechnical-related submittals sent to the Geotechnical Engineering Unit can be viewed from the Unit's website, via the "Geotechnical Construction Submittals" link.

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

Primary Structures Contact:	James Bolden (919) 707 – 6408 jlbolden@ncdot.gov
Secondary Structures Contacts:	Madonna Rorie (919) 707 – 6508 mlrorie@ncdot.gov
Eastern Regional Geotechnical Contact (Divisions 1-7):	Thomas Santee (984) 920-8901 EastGeotechnicalSubmittal@ncdot.gov
Western Regional Geotechnical Contact (Divisions 8-14):	Eric Williams (980)258-6400 WestGeotechnicalSubmittal@ncdot.gov

SUBMITTAL COPIES

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

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

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

STRUCTURE SUBMITTALS

Submittal	Submittal Required by Structures Management Unit?	Submittal Required by Geotechnical Engineering Unit?	Contract Reference Requiring Submittal [1]
Arch Culvert Falsework	Y	N	Plan Note, SN Sheet & "Falsework and Formwork"
Box Culvert Falsework [7]	Y	N	Plan Note, SN Sheet & "Falsework and Formwork"
Cofferdams	Y	Y	Article 410-4
Foam Joint Seals [6]	Y	N	"Foam Joint Seals"
Expansion Joint Seals (hold down plate type with base angle)	Y	N	"Expansion Joint Seals"
Expansion Joint Seals (modular)	Y	N	"Modular Expansion Joint Seals"
Expansion Joint Seals (strip seals)	Y	N	"Strip Seal Expansion Joints"
Falsework & Forms [2] (substructure)	Y	N	Article 420-3 & "Falsework and Formwork"
Falsework & Forms (superstructure)	Y	N	Article 420-3 & "Falsework and Formwork"
Girder Erection over Railroad	Y	N	Railroad Provisions
Maintenance and Protection of Traffic Beneath Proposed Structure	Y	N	"Maintenance and Protection of Traffic Beneath Proposed Structure at Station ___"
Metal Bridge Railing	Y	N	Plan Note
Metal Stay-in-Place Forms	Y	N	Article 420-3
Metalwork for Elastomeric Bearings [4,5]	Y	N	Article 1072-8
Miscellaneous Metalwork [4,5]	Y	N	Article 1072-8
Disc Bearings [4]	Y	N	"Disc Bearings"
Overhead and Digital Message Signs (DMS) (metalwork and foundations)	Y	N	Applicable Provisions

Placement of Equipment on Structures (cranes, etc.)	Y	N	Article 420-20
Prestressed Concrete Box Beam (detensioning sequences) [3]	Y	N	Article 1078-11
Precast Concrete Box Culverts	Y	N	"Optional Precast Reinforced Concrete Box Culvert at Station ___"
Prestressed Concrete Cored Slab (detensioning sequences) [3]	Y	N	Article 1078-11
Prestressed Concrete Deck Panels	Y	N	Article 420-3
Prestressed Concrete Girder (strand elongation and detensioning sequences)	Y	N	Articles 1078-8 and 1078-11
Removal of Existing Structure over Railroad	Y	N	Railroad Provisions
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 [5]	Y	N	Article 1072-8 & "Sound Barrier Wall"
Structural Steel [4]	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 [4]	Y	N	Article 1072-8

FOOTNOTES

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

GEOTECHNICAL SUBMITTALS

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

FOOTNOTES

1. References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Subarticles refer to the *Standard Specifications*.

2. Submit one hard copy of submittal to the Engineer. Submit a second copy of submittal electronically (PDF via email), US mail or other delivery service to the appropriate Geotechnical Engineering Unit regional office. Electronic submission is preferred.

3. The Pile Driving Equipment Data Form is available from:
   https://connect.ncdot.gov/projects/construction/ConstManRefDocs/PILE%20DRIVING%20EQUIPMENT%20DATA%20FORM.pdf
   See second page of form for submittal instructions.

4. Electronic copy of submittal is required. See referenced provision.

(A) CRANE SAFETY **(12-5-25)**

GENERAL

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

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

CRANE SAFETY SUBMITTAL LIST

(B) 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.

(C) 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.

(D) Crane Inspections: Inspection records for all cranes shall be current and readily accessible for review upon request.

(E) Certifications: Crane operators shall be certified by the National Commission for the Certification of Crane Operators (NCCCO) or the National Center for Construction Education and Research (NCCER). Other approved nationally accredited programs will be considered upon request. In addition, crane operators shall have a current CDL medical card. Submit a list of crane operator(s) and include current certification for each type of crane operated (small

hydraulic, large hydraulic, small lattice, large lattice) and medical evaluations for each operator.

MEASUREMENT AND PAYMENT

No direct payment will be made for providing information, certifications and documentation required for *Crane Safety*.

GROUT FOR STRUCTURES (12-1-17)

GENERAL

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

MATERIAL REQUIREMENT

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

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

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

SAMPLING AND PLACEMENT

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

MEASUREMENT AND PAYMENT

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

SHOTCRETE REPAIRS (11-30-23)

GENERAL

The work covered by this Special Provision consists of removing deteriorated concrete from the structure in accordance with the limits, depth and details shown on the plans, described herein and as established by the Engineer. This work also includes removing and disposing all loose debris, cleaning and repairing reinforcing steel and applying structural shotcrete.

The location and extent of repairs shown on the plans are general in nature. The Engineer shall determine the extent of removal in the field based on an evaluation of the condition of the exposed surfaces.

Any portion of the structure that is damaged from construction operations shall be repaired to the Engineer's satisfaction, at no extra cost to the Department.

MATERIAL REQUIREMENTS

Use prepackaged dry mix shotcrete conforming to the requirements of ASTM C1480, the applicable sections of the *Standard Specifications* and the following:

Test Description	Test Method	Age (Days)	Specified Requirements
Silica Fume (%)	ASTM C1240	-	10 (Max.)
Air Content - As Shot (%)	ASTM C231 or ASTM C457	-	5 ± 2
Minimum Compressive Strength (psi)	ASTM C109	7 28	3,000 5,000
Minimum Bond Pull-off Strength (psi)	ASTM C1583 or ASTM C882	28	250
Rapid Chloride Permeability Tests (range in coulombs)	ASTM C1202	-	100 – 1,000

Admixtures are not allowed unless approved by the Engineer. Store shotcrete in an environment where temperatures remain above 40°F and less than 95°F

All equipment must operate in accordance with the manufacturer's specifications and material must be placed within the recommended time.

QUALITY CONTROL

(A) Qualification of Shotcrete Contractor

The shotcrete Contractor shall provide proof of experience by submitting a description of jobs similar in size and character that have been completed within the last five (5) years. The name, address and telephone number of references for the submitted projects shall also be furnished. Failure to provide appropriate documentation will result in the rejection of the proposed shotcrete contractor.

(B) Qualification of Nozzleman

The shotcrete Contractor's nozzleman shall be certified by the American Concrete Institute (ACI). Submit proof of certification to the Engineer prior to beginning repair work. The nozzleman shall maintain certification at all times while work is being performed for the Department. Failure to provide and maintain certification will result in the rejection of the proposed nozzleman.

TEMPORARY WORK PLATFORM

Prior to beginning any repair work, provide details for a sufficiently sized temporary work platform at each repair location. Design steel members to meet the requirements of the American Institute of Steel Construction Manual. Design timber members in accordance with the *National Design Specification for Stress-Grade Lumber and Its Fastenings* of the National Forest Products Association. Submit the platform design and plans for review and approval. The design and plans shall be sealed and signed by a North Carolina registered Professional Engineer. Do not install the platform until the design and plans are approved. Drilling holes in the superstructure for the purpose of attaching the platform is prohibited. Upon completion of work, remove all anchorages in the substructure and repair the substructure at no additional cost to the Department.

SURFACE PREPARATION

Prior to starting the repair operation, delineate all surfaces and areas assumed to be deteriorated by visually examining and sounding the concrete surface with a hammer or other approved method. The Engineer is the sole judge in determining the limits of deterioration.

Prior to removal, introduce a shallow saw cut approximately ½" in depth around the repair area at right angles to the concrete surface. Remove all deteriorated concrete 1 inch below the reinforcing steel with a 17 lb (maximum) pneumatic hammer with points that do not exceed the width of the shank or with hand picks or chisels as directed by the Engineer. Do not cut or remove the existing reinforcing steel. Unless specifically directed by the Engineer, do not remove concrete deeper than 1 inch below the reinforcing steel.

Abrasive blast all exposed concrete surfaces and existing reinforcing steel in repair areas to remove all debris, loose concrete, loose mortar, rust, scale, etc. After sandblasting examine the reinforcing steel to ensure at least 90% of the original diameter remains. If there is more than 10% reduction in the rebar diameter, splice in and securely tie supplemental reinforcing bars as directed by the Engineer.

Provide stainless welded wire fabric at each repair area larger than one square foot if the depth of the repair exceeds 2 inches from the existing, intact exterior face of the concrete member. Provide a minimum 4" x 4" - 12 gage stainless welded wire fabric unless otherwise shown on the plans. Rigidly secure the welded wire fabric to existing steel or to $^{3}/_{16}$"diameter stainless hook fasteners adequately spaced to prevent sagging. Encase the welded wire fabric in shotcrete a minimum depth of 1½ inches.

With the exception of overhead applications, the contractor has the option to use synthetic fiber reinforcement as an alternate to welded wire fabric if attaching welded wire fabric is impractical or if approved by the Engineer. Welded wire fabric and synthetic fiber reinforcement shall not be used in the same repair area.

Thoroughly clean the repair area of all dirt, grease, oil or foreign matter, and remove all loose or weakened material before applying shotcrete. Saturate the repair area with clean water the day before applying shotcrete. Bring the wetted surface to a saturated surface dry (SSD) condition prior to applying shotcrete and maintain this condition until the application begins. Use a blowpipe to facilitate removal of free surface water. Only oil-free compressed air is to be used in the blowpipe.

The time between removal of deteriorated concrete and applying shotcrete shall not exceed five (5) calendar days. If the time allowance exceeds (5) calendar days, prepare the surface at the direction of the Engineer before applying shotcrete.

APPLICATION AND SURFACE FINISH

Apply shotcrete only when the surface temperature of the repair area is greater than 40°F and less than 95°F. Do not apply shotcrete to frosted surfaces. Maintain shotcrete at a minimum temperature of 40°F for three (3) calendar days after placement.

Apply shotcrete in layers. The properties of the applied shotcrete determine the proper thickness of each layer or lift.

The nozzleman should hold the nozzle three (3) to four (4) feet from the surface being covered in a position that ensures the shotcrete strikes at right angles to the surface being covered without excessive impact. The nozzleman shall maintain the water amount at a practicable minimum, so the mix properly adheres to the repair area. Water content should not become high enough to cause the mix to sag or fall from vertical or inclined surfaces, or to separate in horizontal layers.

Use shooting wires or guide strips that do not entrap rebound sand. Use guide wires to provide a positive means of checking the total thickness of the shotcrete applied. Remove the guide wires prior to the final finish coat.

To avoid leaving sand pockets in the shotcrete, blow or rake off sand that rebounds and does not fall clear of the work, or which collects in pockets in the work. Do not reuse rebound material in the work

If a work stoppage longer than two (2) hours takes place on any shotcrete layer prior to the time it has been built up to required thickness, saturate the area with clean water and use a blowpipe as outlined previously, prior to continuing with the remaining shotcrete course. Do not apply shotcrete to a dry surface.

Finish all repaired areas, including chamfered edges, as close as practicable to their original dimensions and configuration, unless otherwise required to provide a minimum 2" of cover for reinforcing steel exposed during repair. If necessary to extend shotcrete repair material beyond the original member dimensions and geometry, coordinate with the Engineer to determine methods, geometry, and dimensions of the final finished surface to provide a minimum 2" of cover on reinforcing steel. Slightly build up and trim shotcrete to the final surface by cutting with the leading edge of a sharp trowel. Use a rubber float to correct any imperfections. Limit work on the finished surface to correcting imperfections caused by trowel cutting.

Immediately after bringing shotcrete surfaces to final thickness, thoroughly check for sags, bridging, and other deficiencies. Repair any imperfections at the direction of the Engineer.

Cure the completed shotcrete surface in accordance with Article 420-15(B) Water Method of the *Standard Specifications* for seven (7) calendar days. If the water method is impracticable and if approved by the Engineer, a membrane curing compound may be used in accordance with Subarticle 420-15(C) of the *Standard Specifications* at double the manufacturer's recommended coverage rate.

MATERIAL TESTING & ACCEPTANCE

Each day shotcreting takes place, the nozzleman shall shoot one 18" x 18" x 3.5" test panel in the same position as the repair work that is being done to demonstrate the shotcrete is being applied properly. Store, handle and cure the test panel in the same manner as the repaired substructure and do not disturb for the first 24 hours after shotcreting.

Approximately 72 hours after completing the final shotcrete placement, thoroughly test the surface with a hammer. At this time, the repair area should have sufficient strength for all sound sections to ring sharply. Remove and replace any unsound portions prior to the final inspection of the work. No additional compensation will be provided for removal and replacement of unsound shotcrete.

In accordance with Subarticle 1002-3(H) of the *Standard Specifications*, core three (3) 3" diameter samples from each test panel. Compressive strength values on test panels shall equal or exceed the required 28-day strength requirements. Should failures occur on the test panel cores, acceptance of the material will be determined by tests on cores from the installed work on the structure. A minimum of (3) three cores shall be taken from the area in question of the structure. The average compressive strength of the cores taken from the structure shall equal or exceed the specified strength of the shotcrete applied, and no single core shall have strength less than 85% of the specified value. Any cores taken from the structure shall penetrate into the existing concrete at least two (2) inches. Cores shall also be inspected for delamination, sand pockets, segregation, and voids.

The adequacy of the bond between the existing concrete and the shotcrete shall be determined by direct tension bond testing, in accordance with ASTM C1583 or ASTM C882, as directed by the Engineer. A minimum bond strength of 250 psi will be accepted as satisfactory. Bond failure less than 250 psi attributable to the failure of existing concrete will not be cause for rejection. The cost of up to three passing direct tension bond tests shall be the responsibility of the Contractor; additional passing pull-off tests will be the responsibility of the Department.

Any repair work failing to meet the requirements of this Special Provision will be rejected and the Contractor shall implement a remediation plan to correct the deficiency at no additional cost to the Department. No extra payment will be provided for drilling extra cores. Patch all core holes in the repaired structure to the satisfaction of the Engineer.

MEASUREMENT AND PAYMENT

Shotcrete Repairs will be measured and paid for at the contract unit price bid per cubic foot and will be full compensation for removal, containment and disposal off-site of unsound concrete including the cost of materials, labor, tools, equipment and incidentals necessary to complete the repair work. Depth will be measured from the original outside concrete face. If modifications to the dimensions and geometry are approved by the Engineer to achieve proper clearance over reinforcing steel, depth measurements will be made from the modified final outside face. The Contractor and Engineer will measure quantities after removal of unsound concrete and before

application of repair material. Payment will also include the cost of sandblasting, surface cleaning and preparation, cleaning of reinforcing steel, placement of new steel, cost of temporary work platform, testing for soundness and bond strength, curing of shotcrete and taking core samples from the test panels and the structure.

Payment will be made under:

Pay Item	Pay Unit
Shotcrete Repairs	Cubic Feet

FLOWABLE FILL (STRUCTURES) (SPECIAL)

DESCRIPTION

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

MATERIALS

Refer to Division 10 of the *Standard Specifications*.

ITEM	Section
Flowable Fill (Structures)	1000-7

CONSTRUCTION METHODS

Discharge flowable fill material directly from the truck into the space to be filled, or by other approved methods. The mix may be placed full depth or in lifts as site conditions dictate. Place flowable fill so that all void under the proposed approach slabs and the grout ports are filled.

MEASUREMENT AND PAYMENT

Flowable Fill (Structures) will be measured in cubic yards and paid as the actual number of cubic yards that have been satisfactorily placed and accepted. Such price and payment will be full compensation for all work covered by this provision including, but not limited to, the mix design, furnishing, hauling, placing and containing the flowable fill.

Payment will be made under:

Pay Item	Pay Unit
Flowable Fill (Structures)	Cubic Yard

ELASTOMERIC CONCRETE FOR PRESERVATION (2-11-19)

GENERAL

Elastomeric concrete is a mixture of a two-part polymer consisting of polyurethane and/or epoxy and kiln-dried aggregate. Provide an elastomeric concrete and binder system that is preapproved. Use the concrete in the blocked-out areas on both sides of the bridge deck joints as indicated on the plans.

MATERIALS

Provide materials that comply with the following minimum requirements at 14 days (or at the end of the specified curing time).

ELASTOMERIC CONCRETE PROPERTIES	TEST METHOD	MINIMUM REQUIREMENT
Compressive Strength, psi	ASTM D695	2,000
5% Deflection Resilience	ASTM D695	95
Splitting Tensile Strength, psi	ASTM D3967	625
Bond Strength to Concrete, psi	ASTM C882 (C882M)	450
Durometer Hardness	ASTM D2240	50

BINDER PROPERTIES (without aggregate)	TEST METHOD	MINIMUM REQUIREMENT
Tensile Strength, psi	ASTM D638	1000
Ultimate Elongation	ASTM D638	150%
Tear Resistance, lb./in	ASTM D624	200

In addition to the requirements above, the elastomeric concrete must be resistant to water, chemical, UV and ozone exposure and withstand temperature extremes. Elastomeric concrete systems requiring preheated aggregates are not allowed.

PREQUALIFICATION

Manufacturers of elastomeric concrete materials shall submit samples (including aggregate, primer and binder materials) and a Type 3 certification in accordance with Article 106-3 of the *Standard Specifications* for prequalification to:

North Carolina Department of Transportation
Materials and Tests Unit
1801 Blue Ridge Road
Raleigh, NC 27607

Prequalification will be determined for the system. Individual components will not be evaluated, nor will individual components of previously evaluated systems be deemed prequalified for use.

The submitted binder (a minimum volume of 1 gallon) and corresponding aggregate samples will be evaluated for compliance with the Materials requirements specified above. Systems satisfying all of the Materials requirements will be prequalified for a one-year period. Before the end of this period new product samples shall be resubmitted for prequalification evaluation.

If, at any time, any formulation or component modifications are made to a prequalified system that system will no longer be approved for use.

INSTALLATION

The elastomeric concrete shall not be placed until the longitudinal closure pours between the precast approach slabs has cured for three (3) hours and reached a minimum strength of 4,500 psi.

Provide a manufacturer's representative at the bridge site during the installation of the elastomeric concrete to ensure that all steps being performed comply with all manufacturer installation requirements including, but not limited to weather conditions (ambient temperature, relative humidity, precipitation, wind, etc.), concrete deck surface preparation, binder and aggregate mixing, primer application, elastomeric concrete placement, curing conditions and minimum curing time before joint exposure to traffic. Do not place elastomeric concrete if the ambient air or surface temperature is below 45°F.

Prepare the concrete surface within 48 hours prior to placing the elastomeric concrete. Before placing the elastomeric concrete, all concrete surfaces shall be thoroughly cleaned and dry. Sandblast the concrete surface in the blockout and clear the surface of all loose debris. Do not place the elastomeric concrete until the surface preparation is completed and approved.

Prepare and apply a primer, as per manufacturer's recommendations, to all concrete faces to be in contact with elastomeric concrete, and to areas specified by the manufacturer.

Prepare, batch, and place the elastomeric concrete in accordance with the manufacturer's instructions. Place the elastomeric concrete in the areas specified on the plans while the primer is still tacky and within two (2) hours after applying the primer. Trowel the elastomeric concrete to a smooth finish.

The joint opening in the elastomeric concrete shall match the existing formed opening in the concrete deck prior to sawing the joint.

FIELD SAMPLING

Provide additional production material to allow freshly mixed elastomeric concrete to be sampled for acceptance. A minimum of six (6) 2-inch cube molds and three (3) 3-inch diameter x 6-inch cylinders will be taken by the Department for each day's production. Compression, splitting tensile, and durometer hardness testing will be performed by the Department to determine acceptance. Materials failing to meet the requirements listed above are subject to removal and replacement at no cost to the Department.

MEASUREMENT AND PAYMENT

Elastomeric Concrete for Preservation will be measured and paid for at the contract unit price bid per cubic foot and will be full compensation for material, labor, tools, and equipment necessary for satisfactorily installing the elastomeric concrete in place.

Payment will be made under:

Pay Item	Pay Unit
Elastomeric Concrete for Preservation	Cubic Feet

FOAM JOINT SEALS FOR PRESERVATION (07-16-24)

SEALS

Use preformed seals compatible with concrete and resistant to abrasion, oxidation, oils, gasoline, salt, and other materials that are spilled on or applied to the surface. Use a resilient, UV stable, preformed, impermeable, flexible, expansion joint seal. The joint seal shall consist of low-density, closed cell, cross-linked polyethylene non-extrudable foam. The joint seal shall contain no EVA (Ethylene Vinyl Acetate). Cell generation shall be achieved by being physically blown using nitrogen. No chemical blowing agents shall be used in the cell generation process.

Use seals manufactured with grooves ⅛" ± wide by ⅛" ± deep and spaced between ¼" and ½" apart along the bond surface running the length of the joint. Use seals with a depth that meets the manufacturer's recommendation, but is not less than 70% of the uncompressed width. Provide a seal designed so that, when compressed, the center portion of the top does not extend upward above the original height of the seal by more than ¼". Provide a seal that has a working range of 30% tension and 60% compression and meets the requirements given below.

TEST	TEST METHOD	REQUIREMENT
Tensile Strength	ASTM D3575, Suffix T	110 – 130 psi
Compression Set	ASTM D1056 Suffix B, 2 hr recovery	10% - 16%
Water Absorption	ASTM D3575	< 0.03 lb/ft^2
Elongation at Break	ASTM D3575	180% - 210%
Tear Resistance	ASTM D624 (D3575, Suffix G)	14 – 20 pli
Density	ASTM D3575, Suffix W, Method A	1.8 – 2.2 lb/ft^3
Toxicity	ISO-10993.5	Pass (not cytotoxic)

Have the top of the joint seal clearly shop marked. Inspect the joint seals upon receipt to ensure that the marks are clearly visible before installation.

BONDING ADHESIVE

Use a two-component, 100% solid, modified epoxy adhesive supplied by the joint seal manufacturer that meets the requirements given below.

TEST	TEST METHOD	REQUIREMENT
Tensile strength	ASTM D638	3,000 psi (min.)
Compressive strength	ASTM D695	7,000 psi (min.)
Hardness	Shore D Scale	75-85 psi
Water Absorption	ASTM D570	0.25% by weight max.
Elongation to Break	ASTM D638	5% (max.)
Bond Strength	ASTM C882	2,000 psi (min.)

Use an adhesive that is workable to 40°F. When installing in ambient air or surface temperatures below 40°F or for application on moist, difficult to dry concrete surfaces, use an adhesive specified by the manufacturer of the joint seal.

SAWING THE JOINT

The concrete at the face of the joint (elastomeric concrete, polyester polymer concrete, Portland cement concrete, etc.) shall have sufficient time to cure such that no damage can occur to the concrete prior to sawing to the final width and depth as specified in the plans.

When sawing the joint to receive the foam seal, always use a rigid guide to control the saw in the desired direction. To control the saw and to produce a straight line as indicated on the plans, anchor and positively connect a template or a track to the bridge deck. Do not saw the joint by visual means such as a chalk line. Fill the holes used for holding the template or track to the deck with an approved flowable, non-shrink, non-metallic grout.

Saw cut to the desired width and depth in one (1) or two (2) passes of the saw by placing and spacing two (2) metal blades on the saw shaft to the desired width for the joint opening.

The desired depth is the depth of the seal plus ¼" above the top of the seal plus approximately 1" below the bottom of the seal. An irregular bottom of sawed joint is permitted as indicated on the plans. Grind exposed corners on saw cut edges to a ¼" chamfer.

Saw cut a straight joint, centered over the formed opening and to the desired width specified in the plans. Prevent any chipping or damage to the sawed edges of the joint.

Remove any staining or deposited material resulting from sawing with a wet blade to the satisfaction of the Engineer.

PREPARATION OF SAWED JOINT FOR SEAL INSTALLATION

The elastomeric concrete or polyester polymer concrete at the joint shall cure a minimum of 24 hours prior to seal installation. Portland cement concrete at the joint shall cure following the special provisions.

After sawing the joint, the Engineer will thoroughly inspect the sawed joint opening for spalls, popouts, cracks, etc. All necessary repairs will be made by the Contractor prior to blast cleaning and installing the seal, at no cost to the Department.

Clean the joints by sandblasting with clean dry sand immediately before placing the bonding agent. Sandblast the joint opening to provide a firm, clean joint surface free of curing compound, loose material and any foreign matter. Sandblast the joint opening without causing pitting or uneven surfaces. The aggregate in the joint concrete may be exposed after sandblasting.

After blasting, either brush the surface with clean brushes made of hair, bristle, or fiber, blow the surface with compressed air, or vacuum the surface until all traces of blast products and abrasives are removed from the surface, pockets, and corners.

If nozzle blasting is used to clean the joint opening, use compressed air that does not contain detrimental amounts of water or oil.

Examine the blast-cleaned surface and remove any traces of oil, grease, or smudge deposited in the cleaning operations.

Bond the seal to the blast-cleaned surface on the same day the surface is blast cleaned.

SEAL INSTALLATION

Install the joint seal according to the manufacturer's procedures and recommendations and as recommended below. Do not install the joint seal if the ambient air or surface temperature is below 45°F. Have a manufacturer's certified trained factory representative present during the installation of the first seal of the project.

Before installing the joint seal, check the uninstalled seal length to ensure the seal is the same length as the deck opening. When the joint seal requires splicing, use the heat welding method by placing the joint material ends against a Teflon heating iron of 425-475°F for 7 - 10 seconds, then pressing the ends together tightly. Do not test the welding until the material has completely cooled.

Begin installation by protecting the top edges of the concrete deck adjacent to the vertical walls of the joint as a means to minimize clean up. Stir each epoxy bonding agent component independently, using separate stirring rods for each component to prevent premature curing of the bonding agent. Pour the two (2) components, at the specified mixing ratio, into a clean mixing bucket. Mix the components with a low speed drill (400 rpm max.) until a uniform gray color is achieved without visible marbling. Apply bonding agent to both sides of the joint concrete, as well as both sides of the joint seal, making certain to fill completely the grooves with epoxy. With gloved hands, compress the joint seal and with the help of a blunt probe, push the seal into the joint opening until the seal is recessed approximately ¼" below the surface. When pushing down on the joint seal, apply pressure only in a downward direction. Do not push the joint seal into the joint opening at an angle that would stretch the material. Seals that are stretched during installation shall be removed and rejected. Once work on placing a seal begins, do not stop until it is completed. Clean the excess epoxy from the top of the joint seal immediately with a trowel. Do not use solvents or any cleaners to remove the excess epoxy from the top of the seal. Remove the protective cover at the joint edges and check for any excess epoxy on the surface. Remove excess epoxy with a trowel, the use of solvents or any cleaners will not be allowed.

The installed system shall be watertight and will be monitored until final inspection and approval. Do not place pavement markings on top of foam joint seals.

MEASUREMENT AND PAYMENT

Foam Joint Seals for Preservation will be measured and paid for at the contract unit price bid per linear foot and will be full compensation for furnishing all material, labor, tools, and equipment necessary for installing these seals in place and accepted.

Pay Item	Pay Unit
Foam Joint Seals for Preservation	Linear Feet

BRIDGE JOINT DEMOLITION (11-30-23)

GENERAL

This special provision addresses the removal of existing joint material and adjacent concrete headers to facilitate the installation of new elastomeric concrete headers and bridge joint seals at the locations noted in the contract plans.

EQUIPMENT

Use the following surface preparation equipment:

(A) Sawing equipment capable of sawing concrete to a specified depth.

(B) Power driven hand tools for removal of concrete are required that meet the following requirements:

(C) Pneumatic hammers weighing a nominal 15 lbs. (7 kg) or less

(D) Pneumatic hammer chisel-type bits that do not exceed the diameter of the shaft in width.

(E) Hand tools such as hammers and chisels for removal of final particles of concrete.

REMOVAL AND PREPARATION

Prior to any construction, take the necessary precautions to ensure debris from joint construction is not allowed to fall below the bridge deck.

Remove existing joint material by methods approved by the Engineer. Provide a 1” deep saw cut around the perimeter of areas noted for bridge deck removal.

Remove by chipping with hand tools concrete headers adjacent to the joint to the limits shown on the contract plans. Use a small chipping hammer (15 lb. class) to prepare the edges of the repair area to limit micro fractures. In addition, all loose and unsound concrete shall be removed.

In overhangs, removing concrete areas greater than 0.60 ft^2/ft length of bridge will require overhang support. Submit the overhang support method to the Engineer for approval.

Care shall be taken not to cut, stretch, or damage any exposed reinforcing steel. Dispose of the removed concrete.

If the condition of the concrete is such that deep spalls or sheer faces result, notify the Engineer for the proper course of action.

Clean, repair or replace rusted or loose reinforcing steel. Thoroughly clean the newly exposed surface to be free of all grease, oil, curing compounds, acids, dirt, or loose debris.

MEASUREMENT AND PAYMENT

Bridge Joint Demolition will be measured and paid for at the contract unit price bid per square foot and will be full compensation for removal, containment and disposal of existing joint material and concrete and shall include the cost of labor, tools, equipment and incidentals necessary to complete the work.

Pay Item	**Pay Unit**
Bridge Joint Demolition	Square Feet

PARTIAL REMOVAL OF EXISTING STRUCTURE (SPECIAL)

DESCRIPTION

Remove existing approach slab repairs as detailed and to the limits as shown on the plans and in accordance with the Standard Specifications and this special provision. Proper care shall be taken during the removal process so as to not impact or damage the existing structure to remain in place. The contractor will be responsible for repairing any damage to the remaining structure as a result of the removal operations. The method of repair shall be subject to the approval of the Engineer. The Contractor shall be required to submit a removal plan for review and approval.

MEASUREMENT AND PAYMENT

The price and payment below will be full compensation for all items required to complete the partial structure removal including the removal, containment and disposal of all repair materials, including the cost of labor, tools, equipment and incidentals necessary to complete the work.

Pay Item	**Pay Unit**
Partial Removal of Existing Structure	Lump Sum

PRECAST APPROACH SLABS (SPECIAL)

DESCRIPTION

Work includes preparation of the subgrade, furnish and install precast approach slabs and closure pours between slab sections as detailed on the plans.

MATERIAL REQUIREMENTS

Refer to Section 422 of the *Standard Specifications*

.

For adhesively anchored bolts or dowels, see Article 420-13 of the *Standard Specifications.*

MANUFACTURE OF APPROACH SLABS

(1) Mixture – Conform to the requirements of Section 1077 of the *Standard Specifications.*

(2) Strength- Concrete shall develop a minimum 28-day compressive strength of 4,500 psi. Movement of the precast sections should be minimized during the initial curing period. Any damage caused by moving or handling during the initial curing phase will be grounds for rejection of that precast unit.

(3) Testing – Test the concrete in accordance with the requirements of Section 1077 of the *Standard Specifications.*

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

(5) Physical requirements – Acceptability of precast approach slab units is based on concrete cylinders made and tested in accordance with ASTM C31 and ASTM C39.

LONGITUDINAL CLOSURE POUR

Use a rapid hardening concrete listed on the Materials and Tests Unit's pre-approved producers/suppliers list as listed on the NCDOT APL. The pre-approved list is available on the Department's website.

Supply concrete that develops a minimum compressive strength of 4,500 psi within three (3) hours.

MEASUREMENT AND PAYMENT

Precast Approach Slabs will be paid at the lump sum contract price and will be full compensation to furnish and install the approach slabs and longitudinal closure pours as detailed on the plans, including all labor, materials, equipment, grading, drilling, grout and any other incidentals necessary to complete the work.

STREAMBANK RESTORATION (SPECIAL)

GENERAL

Restore stream bank at the location and to the details as shown on the plans and as directed by the Engineer. All work shall be in accordance with the Standard Specifications and this special provision.

MATERIALS

Class II Rip Rap shall be in accordance with Section 876 of the Standard Specifications. Suitable backfill material shall be in accordance with Section 1018 and 1019 of the Standard Specifications.

CONSTRUCTION METHODS

Restore the streambank in accordance with the details shown on the plans and as directed by the Engineer. Suitable backfill material should be placed on top of the rip rap to fill voids and provide a flat surface for animal passage in accordance with applicable sections of Section 235 of the Standard Specifications or as directed by the Engineer. Tie into existing ground on either side of the bridge as directed by the Engineer.

MEASUREMENT AND PAYMENT

Streambank Restoration will be paid for at the contract lump sum price for the work detailed in this section that has been successfully accomplished and accepted.

Such price and payment will be full compensation for furnishing all labor, materials, equipment and other incidentals necessary to complete the work in accordance with the plans, this special provision and as directed by the Engineer.

Payment will be made under:

Pay Item	**Pay Unit**
Streambank Restoration	Lump Sum

TIMBER BRIDGE RAIL SYSTEM (SPECIAL)

DESCRIPTION

Work consists of furnishing and installing a timber bridge rail system on the existing bridge, with the required hardware and in accordance with the plans and special provisions.

The timber bridge rail system consists of retaining strips, waterproofing membrane under retaining strips, rails, posts, wheel curbs and blocks, and beam post blocks.

The Contractor shall provide all tools and equipment, materials, and any incidentals necessary to complete the timber bridge rail system.

The contractor shall be responsible for fulfilling all applicable requirements of the NCDOT *Standard Specifications* dated January 2024, except as otherwise specified herein.

MATERIALS

Timber

Use No. 1 Dense Southern Pine treated timber and lumber meeting the requirements of Section 1082 of the *Standard Specifications*.

Hardware

All timber bolt connection hardware shall meet the requirements of Section 1074 of the *Standard Specifications* and the grades and descriptions shown below. All bolting hardware including bolts, washers, nuts, etc. shall be hot dipped galvanize.

Heavy hex bolts: ASTM A307B
Heavy hex nuts: ASTM A563A or A1942H
Washers: Round plate, ¼” thickness
Carriage bolts: ASTM A307A Timber dome head
Ogee Washers: ASTM A48 cast iron

All screw connection hardware shall be strength hardened, flat head structural screws with a minimum shank diameter of 0.275”. The screws shall be coated with an ICC-ES AC257 code approved coating rated for use in treated lumber.

Flashing/Waterproofing

Moisture control flashing membrane placed on tops of retaining strips shall be self-adhering high-density polyethylene (HDPE). For material and installation requirements see the *Timber Bridge Flashing Membrane* Special Provision.
Metal drip edge shall be 22 gauge (minimum) aluminum, flat surface and fastened with a compatible metal nails to prevent corrosion.

Field applied preservative treatment for cut and drilled faces of lumber shall be bituminous asphalt-based roofing cement, copper naphthenate paste or approved equal.

Accessories

Linear delineators for the timber bridge rail system shall be rectangular, aluminum backed, high-intensity fluorescent yellow reflective sheeting. Size and color: 4" height (min.) x 34" width (max.).

METHOD OF CONSTRUCTION

Cut, bevel, drill and countersink, and otherwise fabricate lumber in accordance with the plans. Set all materials accurately to required elevation and lines, with members plumb, true and accurately cut and fitted. Perform cutting and drilling in a manner that allows for the collection of all debris and proper disposal.
Treat surfaces of lumber that have been exposed from cutting or drilling with an approved field applied preservative. For drilled holes apply the preservative prior to bolt installation.

Attach metal drip edge along sides of timber bridge deck, locating rail post locations to be notched as necessary.

Attach retaining strip, wheel blocks, wheel guards and railing posts as shown in the plans, then attach timber rails to rail posts.

Timber bridge rails shall be installed with delineators attached to the bridge end rail posts and horizontal rails as detailed in the plans.

MEASUREMENT AND PAYMENT

Timber Bridge Rail System will be paid for by the linear feet bid price and will be full compensation for furnishing and installing the timber bridge rail system including all labor, tools, equipment, lumber, hardware; and all drilling, cutting, bolting and screw fastening; furnishing and field applying wood preservatives; furnishing and installing delineators; and all other incidentals required in the completed and accepted work.

Payment will be made under:

Pay Item	Pay Unit
Timber Bridge Rail System	Linear Feet

TIMBER BRIDGE FLASHING MEMBRANE (SPECIAL)

DESCRIPTION

The Contractor shall furnish and apply a self-adhered high-density polyethylene (HDPE) rubberized flashing membrane system as detailed in the plans.

Membrane application shall be in accordance with the manufacturer's instructions. The handling, storing, and addition of primer coating membrane components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.

Product approval shall require that the membrane system meets the material specifications.

SUBMITTALS

The Contractor shall submit to the Engineer for approval the following documents:

1. Initial submission:
    a. The membrane system material specifications including product performance data.
    b. Certified independent test reports demonstrating conformance to Table 1.
        i. The independent lab shall be recognized by the National Cooperation for Laboratory Accreditation (NACLA) in Construction Materials Engineering and Testing (CMET) or an equal program approved by the Engineer.
            - All testing shall be performed by one independent lab unless approved by the Engineer.
        ii. Independent testing reports must be dated within two (2) years from the anticipated start of membrane installation.
            - Samples for all required testing shall be fabricated at the same time. Test reports shall denote the lot of material as well as the sample fabrication and testing dates.
    c. Safety data sheets (SDS) for all components.

MATERIALS

The membrane waterproofing system shall be:
- Self-adhering to applied surfaces.
- Usable on irregular surfaces

The total minimum base thickness for the membrane shall be 25 mils measured. The membrane shall be able to meet the criteria specified in Table 1.

The membrane waterproofing system shall be asbestos-free. Any required primer shall promote adhesion of the membrane to the timber or steel surface. The chemical composition of the primer, and membrane that make up the membrane waterproofing system shall conform to the Manufacturer's specifications for the material. All components shall be approved by the Manufacturer as being compatible for use with the specified membrane. Cleaning solvents shall also be approved by the Manufacturer for use with the membrane.

MATERIAL DELIVERY AND STORAGE

All components of the membrane system shall be delivered to the site in the Manufacturer's original packaging, clearly identified with the products type and batch number. The Contractor shall provide the Applicator with a storage area for all components. The area shall be cool, dry, out of direct sunlight, and comply with relevant health and safety regulations. Copies of material safety data sheets for all components shall be kept on site by the Contractor.

Table 1: Waterproofing Membrane Material Properties

PROPERTY	TEST	REQUIREMENTS
Thickness	ASTM 3652	25mils
Tensile Strength	ASTM D412 Die C Modified	143psi

APPLICATION PROCEDURE

The installation procedure shall be per the manufacturer's recommendations.

The membrane waterproofing system shall not be applied in either wet, damp or foggy weather, or when the ambient temperature is 45°F or below or is forecast to fall below 45°F during the application period. The temperature of the surface shall also not exceed the dew point by at least 5°F.

1. SURFACE PREPARATION

Follow the manufacturer's recommendations for surface preparation before application of the membrane waterproofing system. Drive screws flush with the top of the timber surfaces prior to placing membrane.

2. APPLYING PRIMER

For systems requiring a primer for different material surfaces, follow the procedures recommended in the Manufacturer's written instructions. All components shall be measured and mixed in accordance with the Manufacturer's recommendations. The primer shall be allowed to cure tack-free for a minimum of 30 minutes or as required by the Manufacturer's instructions, whichever time is greater, prior to application of the flashing membrane.

3. APPLYING MEMBRANE

Unless approved by the Engineer, the membrane shall be applied in accordance with the Manufacturer's instructions.

Following the application of the flashing membrane, the finished surface shall be visually inspected. If any defects or pinholes are found, an appropriate quantity of membrane material shall be repaired in accordance with Section 4, Repairs, below.

4. REPAIRS

If an area of membrane requires repair or if the membrane becomes damaged, a patch repair shall be carried out to restore the integrity of the membrane waterproofing system. The damaged area shall be cut back to sound materials and cleaned up to a width of at least 6 inches beyond the periphery of the damaged area, removing contaminants. The surface shall be primed as necessary, followed by the application of the membrane. A continuous layer shall be obtained over the timber with a 6 inch overlap onto the existing membrane. Any cleaning solvents used shall be approved by the membrane manufacturer. Repairs shall comply with the Manufacturer's guidelines.

PROTECTION OF EXPOSED SURFACES

The Contractor shall exercise care in the application of the flashing materials to prevent surfaces not receiving treatment from being spattered or marred. Particular reference is made to the face of curbs, copings, finished surfaces, substructure exposed surfaces, and outside faces of the bridge. Any material that spatters on these surfaces shall be removed and the surfaces cleaned to the satisfaction of the Engineer.

ACCEPTANCE

Acceptance of the membrane shall only take place once it is determined by the Engineer that the membrane has been installed in accordance with the Special Provisions and plans and that all necessary documentation has been submitted.

NCDOT shall perform visual inspection of the application during the installation of the membrane system.

BASIS OF PAYMENT

No separate payment will be made for *Timber Bridge Flashing Membrane.* Furnishing and applying the timber bridge flashing membrane shall be incidental to the *Timber Bridge Rail System* pay item.

PROJECT SPECIAL PROVISION

(10-18-95) (Rev. 10-15-24) Z-1a

PERMITS

The Contractor's attention is directed to the following permits, which have been applied for by the Department of Transportation to the authority granting the permit. Copies of the permits will be furnished to the Contractor when received by the Department.

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

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

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

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

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

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

County: POLK

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
			ROADWAY ITEMS			
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.	
0003	0043000000-N	226	GRADING	Lump Sum	L.S.	
0004	0050000000-E	226	SUPPLEMENTARY CLEARING & GRUBBING	3 ACR		
0005	0057000000-E	226	UNDERCUT EXCAVATION	4,800 CY		
0006	0134000000-E	240	DRAINAGE DITCH EXCAVATION	2,922 CY		
0007	0195000000-E	265	SELECT GRANULAR MATERIAL	4,800 CY		
0008	0196000000-E	270	GEOTEXTILE FOR SOIL STABILIZATION	4,800 SY		
0009	0220000000-E	SP	ROCK EMBANKMENTS	22,100 TON		
0010	0222000000-E	SP	GEOTEXTILE FOR ROCK EMBANKMENTS	10,400 SY		
0011	0223000000-E	275	ROCK PLATING	5,480 SY		
0012	0234000000-E	SP	GENERIC GRADING ITEM GROUT FOR ROCK FILL	1,215 CY		
0013	0248000000-N	SP	GENERIC GRADING ITEM TYPE 1 BRIDGE APPROACH FILL, STATION 23+64.00 -L2-	Lump Sum	L.S.	
0014	0318000000-E	300	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	446.47 TON		
0015	0321000000-E	300	FOUNDATION CONDITIONING GEOTEXTILE	1,404 SY		
0016	0335200000-E	305	15" DRAINAGE PIPE	492 LF		
0017	0335300000-E	305	18" DRAINAGE PIPE	188 LF		

County: POLK

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0018	0335400000-E	305	24" DRAINAGE PIPE	436 LF		
0019	0448600000-E	310	36" RC PIPE CULVERTS, CLASS IV	24 LF		
0020	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (18", 0.079")	188 LF		
0021	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (24", 0.079")	752 LF		
0022	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (30", 0.109")	268 LF		
0023	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (36", 0.079")	232 LF		
0024	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (36", 0.109")	152 LF		
0025	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (42", 0.109")	64 LF		
0026	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (54", 0.138")	68 LF		
0027	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (60", 0.138")	160 LF		
0028	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (66", 0.138")	68 LF		
0029	0582000000-E	310	15" CS PIPE CULVERTS, 0.064" THICK	32 LF		
0030	0588000000-E	310	18" CS PIPE CULVERTS, 0.064" THICK	212 LF		
0031	0636000000-E	310	**" CS PIPE ELBOWS, *****" THICK (15", 0.064")	2 EA		
0032	0636000000-E	310	**" CS PIPE ELBOWS, *****" THICK (18", 0.064")	2 EA		
0033	0636000000-E	310	**" CS PIPE ELBOWS, *****" THICK (24", 0.079")	4 EA		
0034	0636000000-E	310	**" CS PIPE ELBOWS, *****" THICK (36", 0.079")	2 EA		

County: POLK

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0035	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (112" X 75", 0.168")	52 LF		
0036	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (35" X 24", 0.079")	144 LF		
0037	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (49" X 33", 0.079")	80 LF		
0038	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (57" X 38", 0.109")	132 LF		
0039	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (64" X 43", 0.109")	176 LF		
0040	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (71" X 47", 0.138")	192 LF		
0041	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (83" X 57", 0.168")	44 LF		
0042	0973100000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B IN SOIL (24", 0.375")	10 LF		
0043	0973100000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B IN SOIL (36", 0.532")	18 LF		
0044	0973300000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B NOT IN SOIL (24", 0.375")	10 LF		
0045	0973300000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B NOT IN SOIL (36", 0.532")	18 LF		
0046	0995000000-E	340	PIPE REMOVAL	3,121 LF		
0047	0996000000-N	350	PIPE CLEAN OUT	1 EA		
0048	1099500000-E	505	SHALLOW UNDERCUT	1,200 CY		
0049	1099700000-E	505	CLASS IV SUBGRADE STABILIZATION	2,400 TON		

County: POLK

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0050	1112000000-E	505	GEOTEXTILE FOR SUBGRADE STABILIZATION	3,600 SY		
0051	1121000000-E	520	AGGREGATE BASE COURSE	624 TON		
0052	1220000000-E	545	INCIDENTAL STONE BASE	1,250 TON		
0053	1245000000-E	SP	SHOULDER RECONSTRUCTION	2.1 SMI		
0054	1260000000-E	SP	AGGREGATE SHOULDER BORROW	200 TON		
0055	1330000000-E	607	INCIDENTAL MILLING	2,500 SY		
0056	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	8,745 TON		
0057	1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	7,075 TON		
0058	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	880 TON		
0059	1693000000-E	654	ASPHALT PLANT MIX, PAVEMENT REPAIR	395 TON		
0060	2022000000-E	815	SUBDRAIN EXCAVATION	537.6 CY		
0061	2026000000-E	815	GEOTEXTILE FOR SUBSURFACE DRAINS	2,400 SY		
0062	2036000000-E	815	SUBDRAIN COARSE AGGREGATE	403.2 CY		
0063	2044000000-E	815	6" PERFORATED SUBDRAIN PIPE	2,400 LF		
0064	2070000000-N	815	SUBDRAIN PIPE OUTLET	6 EA		
0065	2077000000-E	815	6" OUTLET PIPE	36 LF		
0066	2209000000-E	838	ENDWALLS	36.49 CY		

County: POLK

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0067	2220000000-E	838	REINFORCED ENDWALLS	113.095 CY		
0068	2275000000-E	SP	FLOWABLE FILL	8 CY		
0069	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	16 EA		
0070	2308000000-E	840	MASONRY DRAINAGE STRUCTURES	48.7 LF		
0071	2367000000-N	840	FRAME WITH TWO GRATES, STD 840.29	8 EA		
0072	2396000000-N	840	FRAME WITH COVER, STD 840.54	4 EA		
0073	2407000000-N	840	STEEL FRAME WITH TWO GRATES, STD 840.37	4 EA		
0074	2556000000-E	846	SHOULDER BERM GUTTER	60 LF		
0075	2577000000-E	846	CONCRETE EXPRESSWAY GUTTER	155 LF		
0076	3030000000-E	862	STEEL BEAM GUARDRAIL	4,668.75 LF		
0077	3045000000-E	862	STEEL BEAM GUARDRAIL, SHOP CURVED	1,087.5 LF		
0078	3145000000-E	862	EXTRA LENGTH GUARDRAIL POST (**' STEEL) (8')	805 EA		
0079	3150000000-N	862	ADDITIONAL GUARDRAIL POSTS	32 EA		
0080	3180000000-N	862	GUARDRAIL ANCHOR UNITS, TYPE ****** (B-77, SHOP CURVED)	2 EA		
0081	3288000000-N	862	GUARDRAIL END UNITS, TYPE TL-2	31 EA		
0082	3317000000-N	862	GUARDRAIL ANCHOR UNITS, TYPE B-77	6 EA		
0083	3360000000-E	863	REMOVE EXISTING GUARDRAIL	2,622 LF		

County: POLK

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0084	3628000000-E	876	RIP RAP, CLASS I	1,482 TON		
0085	3635000000-E	876	RIP RAP, CLASS II	211 TON		
0086	3649000000-E	876	RIP RAP, CLASS B	77 TON		
0087	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	3,052 SY		
0088	4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	133 LF		
0089	4102000000-N	904	SIGN ERECTION, TYPE E	12 EA		
0090	4155000000-N	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	11 EA		
0091	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	350 SF		
0092	4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	477 SF		
0093	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	147 SF		
0094	4445000000-E	1145	BARRICADES (TYPE III)	144 LF		
0095	4455000000-N	1150	FLAGGER	576 DAY		
0096	4516000000-N	1180	SKINNY DRUM	249 EA		
0097	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	69,161 LF		
0098	4890000000-E	SP	GENERIC PAVEMENT MARKING ITEM INTEGRATED MULTIPOLYMER PAVEMENT MARKING LINES (4", 90 MILS)	69,161 LF		
0099	6000000000-E	1605	TEMPORARY SILT FENCE	35,265 LF		
0100	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	1,920 TON		

County: POLK

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0101	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	6,030 TON		
0102	6012000000-E	1610	SEDIMENT CONTROL STONE	2,905 TON		
0103	6015000000-E	1615	TEMPORARY MULCHING	19.5 ACR		
0104	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	1,100 LB		
0105	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEEDING	5.5 TON		
0106	6024000000-E	1622	TEMPORARY SLOPE DRAINS	855 LF		
0107	6029000000-E	SP	SAFETY FENCE	21,780 LF		
0108	6030000000-E	1630	SILT EXCAVATION	12,130 CY		
0109	6036000000-E	1631	MATTING FOR EROSION CONTROL	62,520 SY		
0110	6037000000-E	1629	COIR FIBER MAT	1,910 SY		
0111	6042000000-E	1632	1/4" HARDWARE CLOTH	4,900 LF		
0112	6070000000-N	1639	SPECIAL STILLING BASINS	48 EA		
0113	6071002000-E	1642	FLOCCULANT	1,425 LB		
0114	6071012000-E	1642	COIR FIBER WATTLE	190 LF		
0115	6084000000-E	1660	SEEDING & MULCHING	18 ACR		
0116	6087000000-E	1660	MOWING	9 ACR		
0117	6090000000-E	1661	SEED FOR REPAIR SEEDING	250 LB		

County: POLK

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0118	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	0.5 TON		
0119	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	350 LB		
0120	6108000000-E	1665	FERTILIZER TOPDRESSING	10.25 TON		
0121	6111000000-E	SP	IMPERVIOUS DIKE	980 LF		
0122	6114500000-N	1667	SPECIALIZED HAND MOWING	20 MHR		
0123	6117000000-N	1675	RESPONSE FOR EROSION CONTROL	200 EA		
0124	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	6 EA		
0125	6123000000-E	1670	REFORESTATION	1.5 ACR		
0126	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION CLEANOUT	72 EA		
0127	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION, TYPE 1	24 EA		
0128	6132000000-N	SP	GENERIC EROSION CONTROL ITEM PREFABRICATED CONCRETE WASHOUT	30 EA		
0129	6141000000-E	SP	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT, TYPE 1	30 SY		
0130	6141000000-E	SP	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT, TYPE 2	507 SY		
0131	6141000000-E	SP	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT, TYPE 3	95 SY		
0132	6141000000-E	SP	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT, TYPE 4	35 SY		
0133	8802015110-N	SP	SOIL NAIL PROOF TESTS	15 EA		

County: POLK

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0134	8834000000-N	SP	GENERIC RETAINING WALL ITEM SUPPLEMENTAL SOIL NAILS	15 EA		
0135	8848000000-E	SP	GENERIC RETAINING WALL ITEM WIRE MESH SLOPE STABILIZATION	2,160 SY		
			WALL ITEMS			
			********* BEGIN SCHEDULE AA ****** ******* (2 ALTERNATES) *********			
0136 AA1	8839000000-E	SP	GENERIC RETAINING WALL ITEM LOAD TRANSFER PLATFORM	700 LF		
0137 AA1	8847000000-E	SP	GENERIC RETAINING WALL ITEM SHORED MSE RETAINING WALL	7,920 SF		
			***** OR *****			
0138 AA2	8839000000-E	SP	GENERIC RETAINING WALL ITEM LOAD TRANSFER PLATFORM	350 LF		
0139 AA2	8847000000-E	SP	GENERIC RETAINING WALL ITEM ANCHORED SHEET PILE RETAINING WALLS	6,140 SF		
0140 AA2	8847000000-E	SP	GENERIC RETAINING WALL ITEM SHORED MSE RETAINING WALL	3,740 SF		
			******* END SCHEDULE AA *******			
			STRUCTURE ITEMS			
0141	8084000000-N	410	FOUNDATION EXCAVATION FOR END BENT NO ** AT STATION ******** (2, 54+06.16 -L4-)	Lump Sum	L.S.	
0142	8161000000-E	420	GROOVING BRIDGE FLOORS	845 SF		
0143	8182000000-E	420	CLASS A CONCRETE (BRIDGE)	47.6 CY		
0144	8217000000-E	425	REINFORCING STEEL (BRIDGE)	2,857 LB		
0145	8590000000-E	876	RIP RAP, CLASS ** (II)	155 TON		
0146	8608000000-E	876	RIP RAP CLASS II (2'-0" THICK)	440 TON		
0147	8622000000-E	876	GEOTEXTILE FOR DRAINAGE	650 SY		

County: POLK

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0148	8664000000-E	SP	SHOTCRETE REPAIRS	9 CF		
0149	8860000000-N	SP	GENERIC STRUCTURE ITEM PARTIAL REMOVAL OF EXISTING STRUCTURE	Lump Sum	L.S.	
0150	8860000000-N	SP	GENERIC STRUCTURE ITEM PRECAST APPROACH SLABS	Lump Sum	L.S.	
0151	8860000000-N	SP	GENERIC STRUCTURE ITEM STREAMBANK RESTORATION	Lump Sum	L.S.	
0152	8867000000-E	SP	GENERIC STRUCTURE ITEM FOAM JOINT SEALS FOR PRESERVATION	90 LF		
0153	8867000000-E	SP	GENERIC STRUCTURE ITEM TIMBER BRIDGE RAIL SYSTEM	38 LF		
0154	8881000000-E	SP	GENERIC STRUCTURE ITEM FLOWABLE FILL (STRUCTURES)	20 CY		
0155	8882000000-E	SP	GENERIC STRUCTURE ITEM ELASTOMERIC CONCRETE FOR PRESERVATION	21.8 CF		
0156	8892000000-E	SP	GENERIC STRUCTURE ITEM BRIDGE JOINT DEMOLITION	43.5 SF		

Vendor 1 of 3: SITE DEVELOPMENT CORPORATION (5912)
Call Order 008 (Proposal: C205178)

Bid Information

Proposal County: POLK
Vendor Address: P.O. Box 397
CLIFFSIDE , NC , 28024
Signature Check: Donald Andrew Southards
Time Bid Received: April 21, 2026 12:39 PM
Amendment Count: 0

Bid Checksum: 01189820A4
Bid Total: $23,172,285.91
Items Total: $23,172,285.91
Time Total: $0.00

Bidding Errors:
None.

Vendor 1 of 3: SITE DEVELOPMENT CORPORATION (5912)
Call Order 008 (Proposal: C205178)

Bid Bond Information

Projects:		**Bond Maximum:**	
Counties:		**State of Incorporation:**	
Bond ID:	SNC0420242077	**Agency Execution Date:**	04/20/2026 08:24:39 PM
Paid by Check:	No	**Surety Name:**	Surety2000
Bond Percent:	5%	**Bond Agency Name:**	Ascot Surety & Casualty Company

BondID: SNC0420242077
Surety Registry Agency: Surety2000
Verified?: 1
Surety Agency: Ascot Surety & Casualty Company
Bond Execution Date: 04/20/2026 08:24:39 PM

Line Number	Item Number	Quantity	Unit	Unit Price	Extension Price
Section 0001 ROADWAY ITEMS					
0001	0000100000-N MOBILIZATION	1.000	LS	$1,147,058.0300	$1,147,058.03
0002	0000400000-N CONSTRUCTION SURVEYING	1.000	LS	$333,695.0500	$333,695.05
0003	0043000000-N GRADING	1.000	LS	$1,903,828.8100	$1,903,828.81
0004	0050000000-E SUPPLEMENTARY CLEARING & GRUBBING	3.000	ACR	$30,233.2600	$90,699.78
0005	0057000000-E UNDERCUT EXCAVATION	4800.000	CY	$33.0200	$158,496.00
0006	0134000000-E DRAINAGE DITCH EXCAVATION	2922.000	CY	$24.4200	$71,355.24
0007	0195000000-E SELECT GRANULAR MATERIAL	4800.000	CY	$106.5900	$511,632.00
0008	0196000000-E GEOTEXTILE FOR SOIL STABILIZATION	4800.000	SY	$1.6400	$7,872.00
0009	0220000000-E ROCK EMBANKMENTS	22100.000	TON	$89.9600	$1,988,116.00
0010	0222000000-E GEOTEXTILE FOR ROCK EMBANKMENTS	10400.000	SY	$8.0600	$83,824.00
0011	0223000000-E ROCK PLATING	5480.000	SY	$87.0700	$477,143.60
0012	0234000000-E GENERIC GRADING ITEM GROUT FOR ROCK FILL	1215.000	CY	$645.4500	$784,221.75
0013	0248000000-N GENERIC GRADING ITEM TYPE 1 BRIDGE APPROACH FILL, STATION 23+64.00 -L2-	1.000	LS	$69,705.9300	$69,705.93
0014	0318000000-E FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	446.470	TON	$69.9900	$31,248.44
0015	0321000000-E FOUNDATION CONDITIONING GEOTEXTILE	1404.000	SY	$3.5500	$4,984.20
0016	0335200000-E 15" DRAINAGE PIPE	492.000	LF	$95.4000	$46,936.80
0017	0335300000-E 18" DRAINAGE PIPE	188.000	LF	$114.4600	$21,518.48
0018	0335400000-E 24" DRAINAGE PIPE	436.000	LF	$136.1200	$59,348.32
0019	0448600000-E 36" RC PIPE CULVERTS, CLASS IV	24.000	LF	$266.2900	$6,390.96
0020	0576000000-E **" CS PIPE CULVERTS, *****" THICK (18", 0.079")	188.000	LF	$105.1300	$19,764.44
0021	0576000000-E **" CS PIPE CULVERTS, *****" THICK (24", 0.079")	752.000	LF	$149.0000	$112,048.00
0022	0576000000-E **" CS PIPE CULVERTS, *****" THICK (30", 0.109")	268.000	LF	$189.4600	$50,775.28
0023	0576000000-E **" CS PIPE CULVERTS, *****" THICK (36", 0.079")	232.000	LF	$188.8500	$43,813.20

0024	0576000000-E	152.000	LF	$223.8300	$34,022.16
	" CS PIPE CULVERTS, ***" THICK (36", 0.109")				
0025	0576000000-E	64.000	LF	$246.0300	$15,745.92
	" CS PIPE CULVERTS, ***" THICK (42", 0.109")				
0026	0576000000-E	68.000	LF	$367.7300	$25,005.64
	" CS PIPE CULVERTS, ***" THICK (54", 0.138")				
0027	0576000000-E	160.000	LF	$439.3600	$70,297.60
	" CS PIPE CULVERTS, ***" THICK (60", 0.138")				
0028	0576000000-E	68.000	LF	$354.5500	$24,109.40
	" CS PIPE CULVERTS, ***" THICK (66", 0.138")				
0029	0582000000-E	32.000	LF	$100.6300	$3,220.16
	15" CS PIPE CULVERTS, 0.064" THICK				
0030	0588000000-E	212.000	LF	$105.0700	$22,274.84
	18" CS PIPE CULVERTS, 0.064" THICK				
0031	0636000000-E	2.000	EA	$1,902.9600	$3,805.92
	" CS PIPE ELBOWS, ***" THICK (15", 0.064")				
0032	0636000000-E	2.000	EA	$2,104.6300	$4,209.26
	" CS PIPE ELBOWS, ***" THICK (18", 0.064")				
0033	0636000000-E	4.000	EA	$4,461.3600	$17,845.44
	" CS PIPE ELBOWS, ***" THICK (24", 0.079")				
0034	0636000000-E	2.000	EA	$3,618.2800	$7,236.56
	" CS PIPE ELBOWS, ***" THICK (36", 0.079")				
0035	0654000000-E	52.000	LF	$1,346.5300	$70,019.56
	" X ***" CS PIPE ARCH CULVERTS, **" THICK (112" X 75", 0.168")				
0036	0654000000-E	144.000	LF	$151.4100	$21,803.04
	" X ***" CS PIPE ARCH CULVERTS, **" THICK (35" X 24", 0.079")				
0037	0654000000-E	80.000	LF	$200.8700	$16,069.60
	" X ***" CS PIPE ARCH CULVERTS, **" THICK (49" X 33", 0.079")				
0038	0654000000-E	132.000	LF	$294.5700	$38,883.24
	" X ***" CS PIPE ARCH CULVERTS, **" THICK (57" X 38", 0.109")				
0039	0654000000-E	176.000	LF	$374.3000	$65,876.80
	" X ***" CS PIPE ARCH CULVERTS, **" THICK (64" X 43", 0.109")				
0040	0654000000-E	192.000	LF	$513.7000	$98,630.40
	" X ***" CS PIPE ARCH CULVERTS, **" THICK (71" X 47", 0.138")				
0041	0654000000-E	44.000	LF	$837.5900	$36,853.96
	" X ***" CS PIPE ARCH CULVERTS, **" THICK (83" X 57", 0.168")				
0042	0973100000-E	10.000	LF	$299.3400	$2,993.40
	" WELDED STEEL PIPE, **" THICK, GRADE B IN SOIL (24", 0.375")				
0043	0973100000-E	18.000	LF	$1,441.8200	$25,952.76
	" WELDED STEEL PIPE, **" THICK, GRADE B IN SOIL (36", 0.532")				
0044	0973300000-E	10.000	LF	$1,552.6600	$15,526.60
	" WELDED STEEL PIPE, **" THICK, GRADE B NOT IN SOIL (24", 0.375")				
0045	0973300000-E	18.000	LF	$1,893.4700	$34,082.46
	" WELDED STEEL PIPE, **" THICK, GRADE B NOT IN SOIL (36", 0.532")				
0046	0995000000-E	3121.000	LF	$30.1200	$94,004.52
	PIPE REMOVAL				
0047	0996000000-N	1.000	EA	$9,899.9400	$9,899.94
	PIPE CLEAN OUT				
0048	1099500000-E	1200.000	CY	$7.4800	$8,976.00

		SHALLOW UNDERCUT			
0049	1099700000-E	2400.000	TON	$50.4700	$121,128.00
		CLASS IV SUBGRADE STABILIZATION			
0050	1112000000-E	3600.000	SY	$7.0000	$25,200.00
		GEOTEXTILE FOR SUBGRADE STABILIZATION			
0051	1121000000-E	624.000	TON	$59.1900	$36,934.56
		AGGREGATE BASE COURSE			
0052	1220000000-E	1250.000	TON	$52.1400	$65,175.00
		INCIDENTAL STONE BASE			
0053	1245000000-E	2.100	SMI	$9,826.3300	$20,635.29
		SHOULDER RECONSTRUCTION			
0054	1260000000-E	200.000	TON	$44.8200	$8,964.00
		AGGREGATE SHOULDER BORROW			
0055	1330000000-E	2500.000	SY	$16.3200	$40,800.00
		INCIDENTAL MILLING			
0056	1491000000-E	8745.000	TON	$130.4700	$1,140,960.15
		ASPHALT CONC BASE COURSE, TYPE B25.0C			
0057	1523000000-E	7075.000	TON	$122.9600	$869,942.00
		ASPHALT CONC SURFACE COURSE, TYPE S9.5C			
0058	1575000000-E	880.000	TON	$749.3300	$659,410.40
		ASPHALT BINDER FOR PLANT MIX			
0059	1693000000-E	395.000	TON	$201.2900	$79,509.55
		ASPHALT PLANT MIX, PAVEMENT REPAIR			
0060	2022000000-E	537.600	CY	$45.1700	$24,283.39
		SUBDRAIN EXCAVATION			
0061	2026000000-E	2400.000	SY	$4.2900	$10,296.00
		GEOTEXTILE FOR SUBSURFACE DRAINS			
0062	2036000000-E	403.200	CY	$98.6700	$39,783.74
		SUBDRAIN COARSE AGGREGATE			
0063	2044000000-E	2400.000	LF	$20.7500	$49,800.00
		6" PERFORATED SUBDRAIN PIPE			
0064	2070000000-N	6.000	EA	$631.7500	$3,790.50
		SUBDRAIN PIPE OUTLET			
0065	2077000000-E	36.000	LF	$31.5900	$1,137.24
		6" OUTLET PIPE			
0066	2209000000-E	36.490	CY	$6,552.0600	$239,084.67
		ENDWALLS			
0067	2220000000-E	113.095	CY	$2,459.0800	$278,109.65
		REINFORCED ENDWALLS			
0068	2275000000-E	8.000	CY	$613.0600	$4,904.48
		FLOWABLE FILL			
0069	2286000000-N	16.000	EA	$3,912.7000	$62,603.20
		MASONRY DRAINAGE STRUCTURES			
0070	2308000000-E	48.700	LF	$796.9500	$38,811.47
		MASONRY DRAINAGE STRUCTURES			
0071	2367000000-N	8.000	EA	$1,138.9900	$9,111.92
		FRAME WITH TWO GRATES, STD 840.29			
0072	2396000000-N	4.000	EA	$4,042.9300	$16,171.72
		FRAME WITH COVER, STD 840.54			

0073	2407000000-N	4.000	EA	$1,468.5700	$5,874.28
	STEEL FRAME WITH TWO GRATES, STD 840.37				
0074	2556000000-E	60.000	LF	$56.1600	$3,369.60
	SHOULDER BERM GUTTER				
0075	2577000000-E	155.000	LF	$113.4100	$17,578.55
	CONCRETE EXPRESSWAY GUTTER				
0076	3030000000-E	4668.750	LF	$30.3300	$141,603.19
	STEEL BEAM GUARDRAIL				
0077	3045000000-E	1087.500	LF	$32.2700	$35,093.63
	STEEL BEAM GUARDRAIL, SHOP CURVED				
0078	3145000000-E	805.000	EA	$36.7900	$29,615.95
	EXTRA LENGTH GUARDRAIL POST (**' STEEL) (8')				
0079	3150000000-N	32.000	EA	$56.8000	$1,817.60
	ADDITIONAL GUARDRAIL POSTS				
0080	3180000000-N	2.000	EA	$3,420.8600	$6,841.72
	GUARDRAIL ANCHOR UNITS, TYPE ****** (B-77, SHOP CURVED)				
0081	3288000000-N	31.000	EA	$4,001.7600	$124,054.56
	GUARDRAIL END UNITS, TYPE TL-2				
0082	3317000000-N	6.000	EA	$3,356.3100	$20,137.86
	GUARDRAIL ANCHOR UNITS, TYPE B-77				
0083	3360000000-E	2622.000	LF	$1.2900	$3,382.38
	REMOVE EXISTING GUARDRAIL				
0084	3628000000-E	1482.000	TON	$109.7700	$162,679.14
	RIP RAP, CLASS I				
0085	3635000000-E	211.000	TON	$109.5900	$23,123.49
	RIP RAP, CLASS II				
0086	3649000000-E	77.000	TON	$115.8100	$8,917.37
	RIP RAP, CLASS B				
0087	3656000000-E	3052.000	SY	$1.6400	$5,005.28
	GEOTEXTILE FOR DRAINAGE				
0088	4072000000-E	133.000	LF	$9.4900	$1,262.17
	SUPPORTS, 3-LB STEEL U-CHANNEL				
0089	4102000000-N	12.000	EA	$213.0000	$2,556.00
	SIGN ERECTION, TYPE E				
0090	4155000000-N	11.000	EA	$6.4600	$71.06
	DISPOSAL OF SIGN SYSTEM, U-CHANNEL				
0091	4400000000-E	350.000	SF	$10.6500	$3,727.50
	WORK ZONE SIGNS (STATIONARY)				
0092	4405000000-E	477.000	SF	$11.1600	$5,323.32
	WORK ZONE SIGNS (PORTABLE)				
0093	4410000000-E	147.000	SF	$9.6800	$1,422.96
	WORK ZONE SIGNS (BARRICADE MOUNTED)				
0094	4445000000-E	144.000	LF	$23.2300	$3,345.12
	BARRICADES (TYPE III)				
0095	4455000000-N	576.000	DAY	$530.4100	$305,516.16
	FLAGGER				
0096	4516000000-N	249.000	EA	$42.6000	$10,607.40
	SKINNY DRUM				
0097	4810000000-E	69161.000	LF	$0.1400	$9,682.54

		PAINT PAVEMENT MARKING LINES (4")			
0098	4890000000-E	69161.000	LF	$1.7400	$120,340.14
	GENERIC PAVEMENT MARKING ITEM INTEGRATED MULTIPOLYMER PAVEMENT MARKING LINES (4", 90 MILS)				
0099	6000000000-E	35265.000	LF	$3.2200	$113,553.30
	TEMPORARY SILT FENCE				
0100	6006000000-E	1920.000	TON	$68.6500	$131,808.00
	STONE FOR EROSION CONTROL, CLASS A				
0101	6009000000-E	6030.000	TON	$68.6500	$413,959.50
	STONE FOR EROSION CONTROL, CLASS B				
0102	6012000000-E	2905.000	TON	$67.2100	$195,245.05
	SEDIMENT CONTROL STONE				
0103	6015000000-E	19.500	ACR	$1,678.1600	$32,724.12
	TEMPORARY MULCHING				
0104	6018000000-E	1100.000	LB	$5.1700	$5,687.00
	SEED FOR TEMPORARY SEEDING				
0105	6021000000-E	5.500	TON	$1,936.3300	$10,649.82
	FERTILIZER FOR TEMPORARY SEEDING				
0106	6024000000-E	855.000	LF	$37.1500	$31,763.25
	TEMPORARY SLOPE DRAINS				
0107	6029000000-E	21780.000	LF	$2.2600	$49,222.80
	SAFETY FENCE				
0108	6030000000-E	12130.000	CY	$28.6000	$346,918.00
	SILT EXCAVATION				
0109	6036000000-E	62520.000	SY	$2.2600	$141,295.20
	MATTING FOR EROSION CONTROL				
0110	6037000000-E	1910.000	SY	$5.1700	$9,874.70
	COIR FIBER MAT				
0111	6042000000-E	4900.000	LF	$12.9100	$63,259.00
	1/4" HARDWARE CLOTH				
0112	6070000000-N	48.000	EA	$2,099.2900	$100,765.92
	SPECIAL STILLING BASINS				
0113	6071002000-E	1425.000	LB	$12.9100	$18,396.75
	FLOCCULANT				
0114	6071012000-E	190.000	LF	$11.6200	$2,207.80
	COIR FIBER WATTLE				
0115	6084000000-E	18.000	ACR	$2,839.9600	$51,119.28
	SEEDING & MULCHING				
0116	6087000000-E	9.000	ACR	$322.7200	$2,904.48
	MOWING				
0117	6090000000-E	250.000	LB	$7.7500	$1,937.50
	SEED FOR REPAIR SEEDING				
0118	6093000000-E	0.500	TON	$1,936.3300	$968.17
	FERTILIZER FOR REPAIR SEEDING				
0119	6096000000-E	350.000	LB	$7.7500	$2,712.50
	SEED FOR SUPPLEMENTAL SEEDING				
0120	6108000000-E	10.250	TON	$1,936.3300	$19,847.38
	FERTILIZER TOPDRESSING				
0121	6111000000-E	980.000	LF	$233.6800	$229,006.40

	IMPERVIOUS DIKE				
0122	6114500000-N	20.000	MHR	$96.8200	$1,936.40
	SPECIALIZED HAND MOWING				
0123	6117000000-N	200.000	EA	$258.1800	$51,636.00
	RESPONSE FOR EROSION CONTROL				
0124	6117500000-N	6.000	EA	$2,061.3000	$12,367.80
	CONCRETE WASHOUT STRUCTURE				
0125	6123000000-E	1.500	ACR	$5,163.5600	$7,745.34
	REFORESTATION				
0126	6132000000-N	72.000	EA	$392.5100	$28,260.72
	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION CLEANOUT				
0127	6132000000-N	24.000	EA	$375.4400	$9,010.56
	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION, TYPE 1				
0128	6132000000-N	30.000	EA	$1,432.9400	$42,988.20
	GENERIC EROSION CONTROL ITEM PREFABRICATED CONCRETE WASHOUT				
0129	6141000000-E	30.000	SY	$5.1700	$155.10
	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT, TYPE 1				
0130	6141000000-E	507.000	SY	$6.4600	$3,275.22
	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT, TYPE 2				
0131	6141000000-E	95.000	SY	$7.7500	$736.25
	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT, TYPE 3				
0132	6141000000-E	35.000	SY	$7.7500	$271.25
	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT, TYPE 4				
0133	8802015110-N	15.000	EA	$774.5300	$11,617.95
	SOIL NAIL PROOF TESTS				
0134	8834000000-N	15.000	EA	$671.2600	$10,068.90
	GENERIC RETAINING WALL ITEM SUPPLEMENTAL SOIL NAILS				
0135	8848000000-E	2160.000	SY	$316.2700	$683,143.20
	GENERIC RETAINING WALL ITEM WIRE MESH SLOPE STABILIZATION				
Section 0001 Total					$16,530,356.20

Section 0003
WALL ITEMS

0136	8839000000-E	700.000	LF	$2,453.9500	$1,717,765.00
AA1	GENERIC RETAINING WALL ITEM LOAD TRANSFER PLATFORM				
0137	8847000000-E	7920.000	SF	$545.6800	$4,321,785.60
AA1	GENERIC RETAINING WALL ITEM SHORED MSE RETAINING WALL				
0138	8839000000-E	350.000	LF		
AA2	GENERIC RETAINING WALL ITEM LOAD TRANSFER PLATFORM				
0139	8847000000-E	6140.000	SF		
AA2	GENERIC RETAINING WALL ITEM ANCHORED SHEET PILE RETAINING WALLS				
0140	8847000000-E	3740.000	SF		
AA2	GENERIC RETAINING WALL ITEM SHORED MSE RETAINING WALL				
Section 0003 Total					$6,039,550.60

Section 0004

STRUCTURE ITEMS

0141	8084000000-N	1.000	LS	$34,422.4100	$34,422.41
	FOUNDATION EXCAVATION FOR END BENT NO ** AT STATION ******** (2, 54+06.16 -L4-)				
0142	8161000000-E	845.000	SF	$10.7800	$9,109.10
	GROOVING BRIDGE FLOORS				
0143	8182000000-E	47.600	CY	$1,524.1400	$72,549.06
	CLASS A CONCRETE (BRIDGE)				
0144	8217000000-E	2857.000	LB	$9.9700	$28,484.29
	REINFORCING STEEL (BRIDGE)				
0145	8590000000-E	155.000	TON	$122.8800	$19,046.40
	RIP RAP, CLASS ** (II)				
0146	8608000000-E	440.000	TON	$126.2300	$55,541.20
	RIP RAP CLASS II (2'-0" THICK)				
0147	8622000000-E	650.000	SY	$7.4700	$4,855.50
	GEOTEXTILE FOR DRAINAGE				
0148	8664000000-E	9.000	CF	$644.8100	$5,803.29
	SHOTCRETE REPAIRS				
0149	8860000000-N	1.000	LS	$18,244.4800	$18,244.48
	GENERIC STRUCTURE ITEM PARTIAL REMOVAL OF EXISTING STRUCTURE				
0150	8860000000-N	1.000	LS	$239,957.3700	$239,957.37
	GENERIC STRUCTURE ITEM PRECAST APPROACH SLABS				
0151	8860000000-N	1.000	LS	$16,269.1700	$16,269.17
	GENERIC STRUCTURE ITEM STREAMBANK RESTORATION				
0152	8867000000-E	90.000	LF	$139.8200	$12,583.80
	GENERIC STRUCTURE ITEM FOAM JOINT SEALS FOR PRESERVATION				
0153	8867000000-E	38.000	LF	$907.3000	$34,477.40
	GENERIC STRUCTURE ITEM TIMBER BRIDGE RAIL SYSTEM				
0154	8881000000-E	20.000	CY	$270.0500	$5,401.00
	GENERIC STRUCTURE ITEM FLOWABLE FILL (STRUCTURES)				
0155	8882000000-E	21.800	CF	$1,298.1800	$28,300.32
	GENERIC STRUCTURE ITEM ELASTOMERIC CONCRETE FOR PRESERVATION				
0156	8892000000-E	43.500	SF	$398.4900	$17,334.32
	GENERIC STRUCTURE ITEM BRIDGE JOINT DEMOLITION				
Section 0004 Total					$602,379.11
Item Total					$23,172,285.91

ELECTRONIC BID SUBMISSION

By submitting this bid electronically, I hereby acknowledge that all requirements included in the hard copy proposal, addendum, amendments, plans, standard specifications, supplemental specifications and special provisions are part of the bid and contract. Further, I acknowledge that I have read, understand, accept, acknowledge and agree to comply with all statements in this electronic bid.

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NON-COLLUSION, DEBARMENT AND GIFT BAN CERTIFICATION

The prequalified bidder declares (or certifies, verifies, or states) under penalty of perjury under the laws of the United States that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the prequalified bidder has not been convicted of violating N.C.G.S. §133-24 within the last three years, and that the prequalified bidder intends to do the work with his own bonafide employees or subcontractors and will not bid for the benefit of another contractor.

By submitting this non-collusion, debarment and gift ban certification, the Contractor is attesting his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. §133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

DEBARMENT CERTIFICATION OF PREQUALIFIED BIDDER

Conditions for certification:

1. The prequalified bidder shall provide immediate written notice to the Department if at any time the bidder learns that his certification was erroneous when he submitted his debarment certification or explanation that is file with the Department, or has become erroneous because of changed circumstances.

2. The terms covered transaction, debarred, suspended, ineligible, lower tier

covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded, as used in this provision, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. A copy of the Federal Rules requiring this certification and detailing the definitions and coverages may be obtained from the Contract Officer of the Department.

3. The prequalified bidder agrees by submitting this form, that he will not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in NCDOT contracts, unless authorized by the Department.

4. For Federal Aid projects, the prequalified bidder further agrees that by submitting this form he will include the Federal- Aid Provision titled Required Contract Provisions Federal-Aid Construction Contract (Form FHWA PR 1273) provided by the Department, without subsequent modification, in all lower tier covered transactions.

5. The prequalified bidder may rely upon a certification of a participant in a lower tier covered transaction that he is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless he knows that the certification is erroneous. The bidder may decide the method and frequency by which he will determine the eligibility of his subcontractors.

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

7. Except as authorized in paragraph 6 herein, the Department may terminate any contract if the bidder knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available by the Federal Government.

DEBARMENT CERTIFICATION

The prequalified bidder certifies to the best of his knowledge and belief, that he and his principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or

commission of embezzlement, theft, forgery, bribery, falsification or destruction of records; making false statements; or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph b. of this certification; and

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

e. Will submit a revised Debarment Certification immediately if his status changes and will show in his bid proposal an explanation for the change in status.

If the prequalified bidder cannot certify that he is not debarred, he shall provide an explanation with this submittal. An explanation will not necessarily result in denial of participation in a contract.

Failure to submit a non-collusion and debarment certification will result in the prequalified bidder’s bid being considered non-responsive.

EXPLANATION:

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Award Limits on Multiple Projects

By answering YES to this statement, the bidder acknowleges that they are using the award limits on multiple projects? **Yes** ○ **No** ◉

A bidder who desires to bid on more than one project on which bids are to be opened on the same date, and who also desires to avoid receiving an award of more projects than he is equipped to handle, may bid on any number of projects but may limit the total amount of work awarded to him on selected projects by completing the AWARD LIMITS ON MULTIPLE PROJECTS.

The Award Limits on Multiple Projects must be filled in on each project bid for which the Bidder desires protection.

It is the desire of the Bidder to be awarded contracts, the value of which

will not exceed a total of for those

projects indicated herein, for which bids will be opened on (MM/DD/YY)

The Award Limits shall apply to the following projects:

Contract Number
County

Contract Number
County

Contract Number
County

Contract Number
County

Contract Number
County

Contract Number
County

It is agreed that if I am (we are) the low Bidder(s) on indicated projects, the total value of which is more than the above stipulated award limits, the Board of Transportation will award me (us) projects from among those indicated

that have a total value not to exceed the award limit and will result in the lowest total bids to the Department of Transportation.

THIS PROPOSAL CONTAINS THE FOLLOWING ERRORS/WARNINGS (IF ANY)

This Bid contains 0 amendment files

Electronic Bid Submission

By submitting this bid electronically, I hereby acknowledge that all requirements included in the hard copy proposal, addendum, amendments, plans, standard specifications, supplemental specifications and special provisions are part of the bid and contract. Further, I acknowledge that I have read, understand, accept, acknowledge and agree to comply with all statements in this electronic bid.

I hereby certify that I have the authority to submit this bid.

Signature _____

Agency _____

Date _____

Signature _____

Agency _____

Date _____

Signature _____

Agency _____

Date _____

Attachments

Failure to complete and attach the Fuel Usage Factor Adjustment Form will result in using 2.90 gallons per ton as the Fuel Usage Factor for Diesel for the asphalt items included on the form. The contractor will not be permitted to change the option after the bids are submitted.

NOTE: The maximum upload limit is 5 MB. ☐ Verify

Contract Item Sheets For C205178

Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
			ROADWAY ITEMS			
0001	0000100000-N	800	MOBILIZATION	LUMP SUM	1,147,058.03	1,147,058.03
0002	0000400000-N	801	CONSTRUCTION SURVEYING	LUMP SUM	333,695.05	333,695.05
0003	0043000000-N	226	GRADING	LUMP SUM	1,903,828.81	1,903,828.81
0004	0050000000-E	226	SUPPLEMENTARY CLEARING & GRUBBING	3 ACR	30,233.26	90,699.78
0005	0057000000-E	226	UNDERCUT EXCAVATION	4,800 CY	33.02	158,496.00
0006	0134000000-E	240	DRAINAGE DITCH EXCAVATION	2,922 CY	24.42	71,355.24
0007	0195000000-E	265	SELECT GRANULAR MATERIAL	4,800 CY	106.59	511,632.00
0008	0196000000-E	270	GEOTEXTILE FOR SOIL STABILIZATION	4,800 SY	1.64	7,872.00
0009	0220000000-E	SP	ROCK EMBANKMENTS	22,100 TON	89.96	1,988,116.00
0010	0222000000-E	SP	GEOTEXTILE FOR ROCK EMBANKMENTS	10,400 SY	8.06	83,824.00
0011	0223000000-E	275	ROCK PLATING	5,480 SY	87.07	477,143.60
0012	0234000000-E	SP	GENERIC GRADING ITEM GROUT FOR ROCK FILL	1,215 CY	645.45	784,221.75
0013	0248000000-N	SP	GENERIC GRADING ITEM TYPE 1 BRIDGE APPROACH FILL, STATION 23+64.00 -L2-	LUMP SUM	69,705.93	69,705.93
0014	0318000000-E	300	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	446.47 TON	69.99	31,248.44
0015	0321000000-E	300	FOUNDATION CONDITIONING GEOTEXTILE	1,404 SY	3.55	4,984.20
0016	0335200000-E	305	15" DRAINAGE PIPE	492 LF	95.40	46,936.80
0017	0335300000-E	305	18" DRAINAGE PIPE	188 LF	114.46	21,518.48
0018	0335400000-E	305	24" DRAINAGE PIPE	436 LF	136.12	59,348.32
0019	0448600000-E	310	36" RC PIPE CULVERTS, CLASS IV	24 LF	266.29	6,390.96
0020	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (18", 0.079")	188 LF	105.13	19,764.44
0021	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (24", 0.079")	752 LF	149.00	112,048.00
0022	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (30", 0.109")	268 LF	189.46	50,775.28

Contract Item Sheets For C205178

Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
			ROADWAY ITEMS			
0023	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (36", 0.079")	232 LF	188.85	43,813.20
0024	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (36", 0.109")	152 LF	223.83	34,022.16
0025	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (42", 0.109")	64 LF	246.03	15,745.92
0026	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (54", 0.138")	68 LF	367.73	25,005.64
0027	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (60", 0.138")	160 LF	439.36	70,297.60
0028	0576000000-E	310	**" CS PIPE CULVERTS, *****" THICK (66", 0.138")	68 LF	354.55	24,109.40
0029	0582000000-E	310	15" CS PIPE CULVERTS, 0.064" THICK	32 LF	100.63	3,220.16
0030	0588000000-E	310	18" CS PIPE CULVERTS, 0.064" THICK	212 LF	105.07	22,274.84
0031	0636000000-E	310	**" CS PIPE ELBOWS, *****" THICK (15", 0.064")	2 EA	1,902.96	3,805.92
0032	0636000000-E	310	**" CS PIPE ELBOWS, *****" THICK (18", 0.064")	2 EA	2,104.63	4,209.26
0033	0636000000-E	310	**" CS PIPE ELBOWS, *****" THICK (24", 0.079")	4 EA	4,461.36	17,845.44
0034	0636000000-E	310	**" CS PIPE ELBOWS, *****" THICK (36", 0.079")	2 EA	3,618.28	7,236.56
0035	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (112" X 75", 0.168")	52 LF	1,346.53	70,019.56
0036	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (35" X 24", 0.079")	144 LF	151.41	21,803.04
0037	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (49" X 33", 0.079")	80 LF	200.87	16,069.60
0038	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (57" X 38", 0.109")	132 LF	294.57	38,883.24
0039	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (64" X 43", 0.109")	176 LF	374.30	65,876.80
0040	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (71" X 47", 0.138")	192 LF	513.70	98,630.40
0041	0654000000-E	310	***" X ***" CS PIPE ARCH CULVERTS, *****" THICK (83" X 57", 0.168")	44 LF	837.59	36,853.96

Contract Item Sheets For C205178

Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
			ROADWAY ITEMS			
0042	0973100000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B IN SOIL (24", 0.375")	10 LF	299.34	2,993.40
0043	0973100000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B IN SOIL (36", 0.532")	18 LF	1,441.82	25,952.76
0044	0973300000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B NOT IN SOIL (24", 0.375")	10 LF	1,552.66	15,526.60
0045	0973300000-E	330	**" WELDED STEEL PIPE, ****" THICK, GRADE B NOT IN SOIL (36", 0.532")	18 LF	1,893.47	34,082.46
0046	0995000000-E	340	PIPE REMOVAL	3,121 LF	30.12	94,004.52
0047	0996000000-N	350	PIPE CLEAN OUT	1 EA	9,899.94	9,899.94
0048	1099500000-E	505	SHALLOW UNDERCUT	1,200 CY	7.48	8,976.00
0049	1099700000-E	505	CLASS IV SUBGRADE STABILIZATION	2,400 TON	50.47	121,128.00
0050	1112000000-E	505	GEOTEXTILE FOR SUBGRADE STABILIZATION	3,600 SY	7.00	25,200.00
0051	1121000000-E	520	AGGREGATE BASE COURSE	624 TON	59.19	36,934.56
0052	1220000000-E	545	INCIDENTAL STONE BASE	1,250 TON	52.14	65,175.00
0053	1245000000-E	SP	SHOULDER RECONSTRUCTION	2.1 SMI	9,826.33	20,635.29
0054	1260000000-E	SP	AGGREGATE SHOULDER BORROW	200 TON	44.82	8,964.00
0055	1330000000-E	607	INCIDENTAL MILLING	2,500 SY	16.32	40,800.00
0056	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	8,745 TON	130.47	1,140,960.15
0057	1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	7,075 TON	122.96	869,942.00
0058	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	880 TON	749.33	659,410.40
0059	1693000000-E	654	ASPHALT PLANT MIX, PAVEMENT REPAIR	395 TON	201.29	79,509.55
0060	2022000000-E	815	SUBDRAIN EXCAVATION	537.6 CY	45.17	24,283.39
0061	2026000000-E	815	GEOTEXTILE FOR SUBSURFACE DRAINS	2,400 SY	4.29	10,296.00

Contract Item Sheets For C205178

Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
			ROADWAY ITEMS			
0062	2036000000-E	815	SUBDRAIN COARSE AGGREGATE	403.2 CY	98.67	39,783.74
0063	2044000000-E	815	6" PERFORATED SUBDRAIN PIPE	2,400 LF	20.75	49,800.00
0064	2070000000-N	815	SUBDRAIN PIPE OUTLET	6 EA	631.75	3,790.50
0065	2077000000-E	815	6" OUTLET PIPE	36 LF	31.59	1,137.24
0066	2209000000-E	838	ENDWALLS	36.49 CY	6,552.06	239,084.67
0067	2220000000-E	838	REINFORCED ENDWALLS	113.1 CY	2,459.08	278,109.65
0068	2275000000-E	SP	FLOWABLE FILL	8 CY	613.06	4,904.48
0069	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	16 EA	3,912.70	62,603.20
0070	2308000000-E	840	MASONRY DRAINAGE STRUCTURES	48.7 LF	796.95	38,811.47
0071	2367000000-N	840	FRAME WITH TWO GRATES, STD 840.29	8 EA	1,138.99	9,111.92
0072	2396000000-N	840	FRAME WITH COVER, STD 840.54	4 EA	4,042.93	16,171.72
0073	2407000000-N	840	STEEL FRAME WITH TWO GRATES, STD 840.37	4 EA	1,468.57	5,874.28
0074	2556000000-E	846	SHOULDER BERM GUTTER	60 LF	56.16	3,369.60
0075	2577000000-E	846	CONCRETE EXPRESSWAY GUTTER	155 LF	113.41	17,578.55
0076	3030000000-E	862	STEEL BEAM GUARDRAIL	4,668.75 LF	30.33	141,603.19
0077	3045000000-E	862	STEEL BEAM GUARDRAIL, SHOP CURVED	1,087.5 LF	32.27	35,093.63
0078	3145000000-E	862	EXTRA LENGTH GUARDRAIL POST (**' STEEL) (8')	805 EA	36.79	29,615.95
0079	3150000000-N	862	ADDITIONAL GUARDRAIL POSTS	32 EA	56.80	1,817.60
0080	3180000000-N	862	GUARDRAIL ANCHOR UNITS, TYPE ****** (B-77, SHOP CURVED)	2 EA	3,420.86	6,841.72
0081	3288000000-N	862	GUARDRAIL END UNITS, TYPE TL-2	31 EA	4,001.76	124,054.56
0082	3317000000-N	862	GUARDRAIL ANCHOR UNITS, TYPE B-77	6 EA	3,356.31	20,137.86

Contract Item Sheets For C205178

Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
			ROADWAY ITEMS			
0083	3360000000-E	863	REMOVE EXISTING GUARDRAIL	2,622 LF	1.29	3,382.38
0084	3628000000-E	876	RIP RAP, CLASS I	1,482 TON	109.77	162,679.14
0085	3635000000-E	876	RIP RAP, CLASS II	211 TON	109.59	23,123.49
0086	3649000000-E	876	RIP RAP, CLASS B	77 TON	115.81	8,917.37
0087	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	3,052 SY	1.64	5,005.28
0088	4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	133 LF	9.49	1,262.17
0089	4102000000-N	904	SIGN ERECTION, TYPE E	12 EA	213.00	2,556.00
0090	4155000000-N	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	11 EA	6.46	71.06
0091	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	350 SF	10.65	3,727.50
0092	4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	477 SF	11.16	5,323.32
0093	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	147 SF	9.68	1,422.96
0094	4445000000-E	1145	BARRICADES (TYPE III)	144 LF	23.23	3,345.12
0095	4455000000-N	1150	FLAGGER	576 DAY	530.41	305,516.16
0096	4516000000-N	1180	SKINNY DRUM	249 EA	42.60	10,607.40
0097	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	69,161 LF	0.14	9,682.54
0098	4890000000-E	SP	GENERIC PAVEMENT MARKING ITEM INTEGRATED MULTIPOLYMER PAVEMENT MARKING LINES (4", 90 MILS)	69,161 LF	1.74	120,340.14
0099	6000000000-E	1605	TEMPORARY SILT FENCE	35,265 LF	3.22	113,553.30
0100	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	1,920 TON	68.65	131,808.00
0101	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	6,030 TON	68.65	413,959.50
0102	6012000000-E	1610	SEDIMENT CONTROL STONE	2,905 TON	67.21	195,245.05
0103	6015000000-E	1615	TEMPORARY MULCHING	19.5 ACR	1,678.16	32,724.12

Contract Item Sheets For C205178

Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
			ROADWAY ITEMS			
0104	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	1,100 LB	5.17	5,687.00
0105	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEEDING	5.5 TON	1,936.33	10,649.82
0106	6024000000-E	1622	TEMPORARY SLOPE DRAINS	855 LF	37.15	31,763.25
0107	6029000000-E	SP	SAFETY FENCE	21,780 LF	2.26	49,222.80
0108	6030000000-E	1630	SILT EXCAVATION	12,130 CY	28.60	346,918.00
0109	6036000000-E	1631	MATTING FOR EROSION CONTROL	62,520 SY	2.26	141,295.20
0110	6037000000-E	1629	COIR FIBER MAT	1,910 SY	5.17	9,874.70
0111	6042000000-E	1632	1/4" HARDWARE CLOTH	4,900 LF	12.91	63,259.00
0112	6070000000-N	1639	SPECIAL STILLING BASINS	48 EA	2,099.29	100,765.92
0113	6071002000-E	1642	FLOCCULANT	1,425 LB	12.91	18,396.75
0114	6071012000-E	1642	COIR FIBER WATTLE	190 LF	11.62	2,207.80
0115	6084000000-E	1660	SEEDING & MULCHING	18 ACR	2,839.96	51,119.28
0116	6087000000-E	1660	MOWING	9 ACR	322.72	2,904.48
0117	6090000000-E	1661	SEED FOR REPAIR SEEDING	250 LB	7.75	1,937.50
0118	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	0.5 TON	1,936.33	968.17
0119	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	350 LB	7.75	2,712.50
0120	6108000000-E	1665	FERTILIZER TOPDRESSING	10.25 TON	1,936.33	19,847.38
0121	6111000000-E	SP	IMPERVIOUS DIKE	980 LF	233.68	229,006.40
0122	6114500000-N	1667	SPECIALIZED HAND MOWING	20 MHR	96.82	1,936.40
0123	6117000000-N	1675	RESPONSE FOR EROSION CONTROL	200 EA	258.18	51,636.00
0124	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	6 EA	2,061.30	12,367.80
0125	6123000000-E	1670	REFORESTATION	1.5 ACR	5,163.56	7,745.34

Contract Item Sheets For C205178

Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
			ROADWAY ITEMS			
0126	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION CLEANOUT	72 EA	392.51	28,260.72
0127	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION, TYPE 1	24 EA	375.44	9,010.56
0128	6132000000-N	SP	GENERIC EROSION CONTROL ITEM PREFABRICATED CONCRETE WASHOUT	30 EA	1,432.94	42,988.20
0129	6141000000-E	SP	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT, TYPE 1	30 SY	5.17	155.10
0130	6141000000-E	SP	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT, TYPE 2	507 SY	6.46	3,275.22
0131	6141000000-E	SP	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT, TYPE 3	95 SY	7.75	736.25
0132	6141000000-E	SP	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT, TYPE 4	35 SY	7.75	271.25
0133	8802015110-N	SP	SOIL NAIL PROOF TESTS	15 EA	774.53	11,617.95
0134	8834000000-N	SP	GENERIC RETAINING WALL ITEM SUPPLEMENTAL SOIL NAILS	15 EA	671.26	10,068.90
0135	8848000000-E	SP	GENERIC RETAINING WALL ITEM WIRE MESH SLOPE STABILIZATION	2,160 SY	316.27	683,143.20

Contract Item Sheets For C205178

Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
			WALL ITEMS			
			******* BEGIN SCHEDULE AA******* ******* (2 ALTERNATES) *******			
0136 AA1	8839000000-E	SP	GENERIC RETAINING WALL ITEM LOAD TRANSFER PLATFORM	700 LF		1,717,765.00
0137 AA1	8847000000-E	SP	GENERIC RETAINING WALL ITEM SHORED MSE RETAINING WALL	7,920 SF		4,321,785.60
			*** OR ***			
0138 AA2	8839000000-E	SP	GENERIC RETAINING WALL ITEM LOAD TRANSFER PLATFORM	350 LF		
0139 AA2	8847000000-E	SP	GENERIC RETAINING WALL ITEM ANCHORED SHEET PILE RETAINING WALLS	6,140 SF		
0140 AA2	8847000000-E	SP	GENERIC RETAINING WALL ITEM SHORED MSE RETAINING WALL	3,740 SF		
			*** END SCHEDULE AA***			

Contract Item Sheets For C205178

Line #	ItemNumber	Sec #	Description	Quantity Unit	Unit Bid Price	Amount Bid
			STRUCTURE ITEMS			
0141	8084000000-N	410	FOUNDATION EXCAVATION FOR END BENT NO ** AT STATION ******** (2, 54+06.16 -L4-)	LUMP SUM	34,422.41	34,422.41
0142	8161000000-E	420	GROOVING BRIDGE FLOORS	845 SF	10.78	9,109.10
0143	8182000000-E	420	CLASS A CONCRETE (BRIDGE)	47.6 CY	1,524.14	72,549.06
0144	8217000000-E	425	REINFORCING STEEL (BRIDGE)	2,857 LB	9.97	28,484.29
0145	8590000000-E	876	RIP RAP, CLASS ** (II)	155 TON	122.88	19,046.40
0146	8608000000-E	876	RIP RAP CLASS II (2'-0" THICK)	440 TON	126.23	55,541.20
0147	8622000000-E	876	GEOTEXTILE FOR DRAINAGE	650 SY	7.47	4,855.50
0148	8664000000-E	SP	SHOTCRETE REPAIRS	9 CF	644.81	5,803.29
0149	8860000000-N	SP	GENERIC STRUCTURE ITEM PARTIAL REMOVAL OF EXISTING STRUCTURE	LUMP SUM	18,244.48	18,244.48
0150	8860000000-N	SP	GENERIC STRUCTURE ITEM PRECAST APPROACH SLABS	LUMP SUM	239,957.37	239,957.37
0151	8860000000-N	SP	GENERIC STRUCTURE ITEM STREAMBANK RESTORATION	LUMP SUM	16,269.17	16,269.17
0152	8867000000-E	SP	GENERIC STRUCTURE ITEM FOAM JOINT SEALS FOR PRESERVATION	90 LF	139.82	12,583.80
0153	8867000000-E	SP	GENERIC STRUCTURE ITEM TIMBER BRIDGE RAIL SYSTEM	38 LF	907.30	34,477.40
0154	8881000000-E	SP	GENERIC STRUCTURE ITEM FLOWABLE FILL (STRUCTURES)	20 CY	270.05	5,401.00
0155	8882000000-E	SP	GENERIC STRUCTURE ITEM ELASTOMERIC CONCRETE FOR PRESERVATION	21.8 CF	1,298.18	28,300.32
0156	8892000000-E	SP	GENERIC STRUCTURE ITEM BRIDGE JOINT DEMOLITION	43.5 SF	398.49	17,334.32
				TOTAL AMOUNT OF BID FOR ENTIRE PROJECT		**$23,172,285.91**

Contract No. C205178

County Polk

Rev. 10-31-24

EXECUTION OF CONTRACT
NON-COLLUSION, DEBARMENT AND GIFT BAN CERTIFICATION

CORPORATION

The Contractor declares (or certifies, verifies, or states) under penalty of perjury under the laws of the United States that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this Contract, that the Contractor has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the Contractor intends to do the work with its own bona fide employees or subcontractors and did not bid for the benefit of another contractor.

By submitting this Execution of Contract, non-collusion, debarment and gift ban certification, the Contractor is certifying his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF CONTRACTOR

Site Development Corporation

Full name of Corporation

P.O. Box 397, Cliffside, NC 28024

Address as prequalified

Attest James Johnson

Signature of **Secretary, ~~Assistant Secretary~~**

Select appropriate title

By Donald A. Southards

Signature of **President, ~~Vice-President, Assistant Vice-President~~**

Select appropriate title

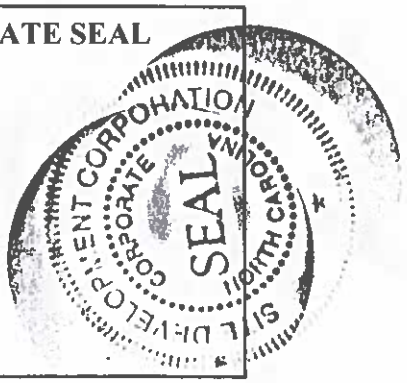
James K. Johnson

Print or type Signer's name

Donald A. Southards

Print or type Signer's name

CORPORATE SEAL



Contract No. C205178

County Polk

Rev. 10-31-24

DEBARMENT CERTIFICATION

Conditions for certification:

1. The prequalified bidder shall provide immediate written notice to the Department if at any time the bidder learns that his certification was erroneous when he submitted his debarment certification or explanation filed with the Department, or has become erroneous because of changed circumstances.

2. The terms *covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal,* and *voluntarily excluded,* as used in this provision, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. A copy of the Federal Rules requiring this certification and detailing the definitions and coverages may be obtained from the Contract Officer of the Department.

3. The prequalified bidder agrees by submitting this form, that he will not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in NCDOT contracts, unless authorized by the Department.

4. For Federal Aid projects, the prequalified bidder further agrees that by submitting this form he will include the Federal-Aid Provision titled *Required Contract Provisions Federal-Aid Construction Contract (Form FHWA PR* 1273) provided by the Department, without subsequent modification, in all lower tier covered transactions.

5. The prequalified bidder may rely upon a certification of a participant in a lower tier covered transaction that he is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless he knows that the certification is erroneous. The bidder may decide the method and frequency by which he will determine the eligibility of his subcontractors.

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

7. Except as authorized in paragraph 6 herein, the Department may terminate any contract if the bidder knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available by the Federal Government.

Contract No. C205178

County Polk

Rev. 10-31-24

DEBARMENT CERTIFICATION

The prequalified bidder certifies to the best of his knowledge and belief, that he and his principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records; making false statements; or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph b. of this certification; and

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

e. Will submit a revised Debarment Certification immediately if his status changes and will show in his bid proposal an explanation for the change in status.

If the prequalified bidder cannot certify that he is not debarred, he shall provide an explanation with this submittal. An explanation will not necessarily result in denial of participation in a contract.

Failure to submit a non-collusion and debarment certification will result in the prequalified bidder's bid being considered non-responsive.

☐ Check here if an explanation is attached to this certification.

Contract No. **C205178**

County (ies): **Polk**

ACCEPTED BY THE
DEPARTMENT OF TRANSPORTATION

Signed by:
Wiley W Jones III
E7574A291DB3475...
Contract Officer

06/04/2026
Date

Execution of Contract and Bonds
Approved as to Form:

Signed by:
Colin Justice
1889E4C5ADF14AE...
Attorney General

06/03/2026
Date

Contract No. C205178
County POLK

Rev. 10-31-24

Bond No. SURU2210010985

CONTRACT PAYMENT BOND

Date of Payment Bond Execution	May 8, 2026
Name of Principal Contractor	Site Development Corporation
Name of Surety:	Ascot Surety & Casualty Company
Name of Contracting Body:	**North Carolina Department of Transportation**
	Raleigh, North Carolina
Amount of Bond:	$23,172,285.91
Contract ID No.:	C205178
County Name:	Polk

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL CONTRACTOR (hereafter, PRINCIPAL) and SURETY above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the Contracting Body, numbered as shown above and hereto attached:

NOW THEREFORE, if the principal shall promptly make payment to all persons supplying labor and material in the prosecution of the work provided for in said contract, and any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

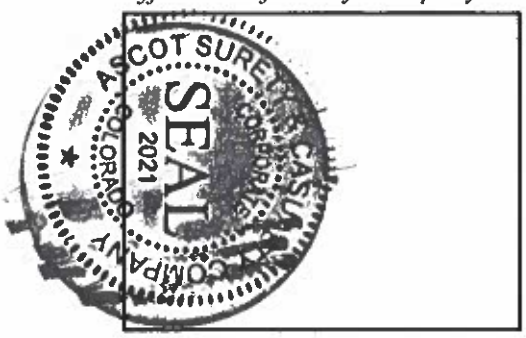
Contract No. C205178

County POLK

Rev. 10-31-24

CONTRACT PAYMENT BOND

Affix Seal of Surety Company



Ascot Surety & Casualty Company 30279

Print or type Surety Company Name NAIC #

By Lavonne Sherrod

Print, stamp or type name of Attorney-in-Fact

Lavonne Sherrod

Signature of Attorney-in-Fact

Leanne Hammons

Signature of Witness

Leanne Hammons

Print or type Signer's name

1900 Winston Road, Suite 100 Knoxville, TN 37919

Address of Attorney-in-Fact

Contract No. C205178

County Polk

Rev. 10-31-24

CONTRACT PAYMENT BOND

CORPORATION

SIGNATURE OF CONTRACTOR (Principal)

Site Development Corporation

Full name of Corporation

P.O.Box 397 Cliffside, NC 28024

Address as prequalified

By Donald A. Southards

Signature of President, ~~Vice President, Assistant Vice President~~

Select appropriate title

SITE DEVELOPMENT CORPORATION SEAL NORTH CAROLINA

Affix Corporate Seal

Donald A. Southards

Print or type Signer's name

Attest James Johnson

Signature of ~~Secretary, Assistant Secretary~~

Select appropriate title

James Johnson

Print or type Signer's name

Contract No. C205178
County POLK

Rev. 10-31-24

Bond No. SURU2210010985

CONTRACT PERFORMANCE BOND

Date of Performance Bond Execution:	May 8, 2026
Name of Principal Contractor:	Site Development Corporation
Name of Surety:	Ascot Surety & Casualty Company
Name of Contracting Body:	**North Carolina Department of Transportation**
	Raleigh, North Carolina
Amount of Bond:	$23,172,285.91
Contract ID No.:	C205178
County Name:	Polk

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL CONTRACTOR (hereafter, PRINCIPAL) and SURETY above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the Contracting Body, numbered as shown above and hereto attached:

NOW THEREFORE, if the principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Contracting Body, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

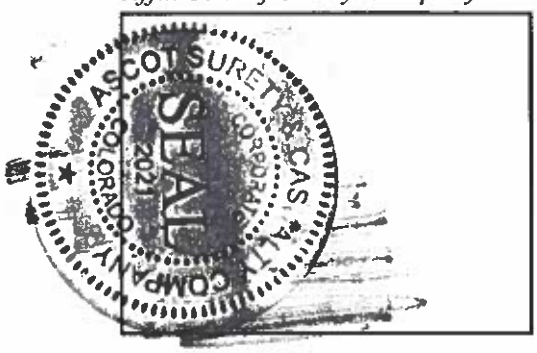
Contract No. C205178

County POLK

Rev. 10-31-24

CONTRACT PERFORMANCE BOND

Affix Seal of Surety Company



Ascot Surety & Casualty Company 30279

Print or type Surety Company Name NAIC #

By Lavonne Sherrod

Print, stamp or type name of Attorney-in-Fact

Lavonne Sherrod

Signature of Attorney-in-Fact

Leanne Hammons

Signature of Witness

Leanne Hammons

Print or type Signer's name

1900 Winston Road, Suite 100 Knoxville, TN 37919

Address of Attorney-in-Fact

Contract No. C205178

County POLK

Rev. 10-31-24

CONTRACT PERFORMANCE BOND

CORPORATION

SIGNATURE OF CONTRACTOR (Principal)

Site Development Corporation

Full name of Corporation

P.O. Box 397 Cliffside, NC 28024

Address as prequalified

By Donald A. Southards

Signature of President, ~~Vice President, Assistant Vice President~~

Select appropriate title

SITE DEVELOPMENT CORPORATION SEAL NORTH CAROLINA

Affix Corporate Seal

Donald A. Southards

Print or type Signer's name

Attest James Johnson

Signature of Secretary, ~~Assistant Secretary~~

Select appropriate title

James Johnson

Print or type Signer's name

Contract No. C205178
County POLK

Rev. 10-31-24

CONTRACT PERFORMANCE BOND

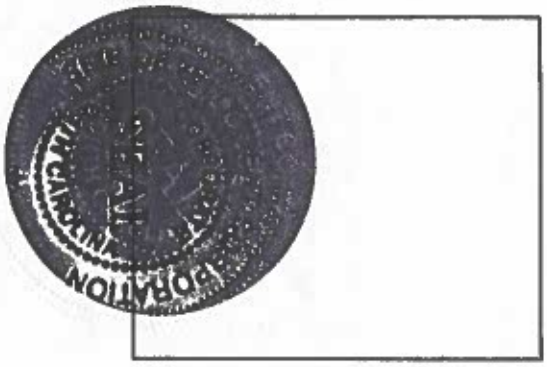
CORPORATION

SIGNATURE OF CONTRACTOR (Principal)

Site Development Corporation
Full name of Corporation

P.O. Box 397 Cliffside, NC 28024
Address as prequalified

By Donald A. Southards
Signature of President, ~~Vice President, Assistant Vice President~~
Select appropriate title



Affix Corporate Seal

Donald A. Southards
Print or type Signer's name

Attest James Johnson
Signature of Secretary, ~~Assistant Secretary~~
Select appropriate title

James Johnson
Print or type Signer's name

Ascot Surety & Casualty Company
Ascot Insurance Company
1020 Highland Colony Parkway, Suite 700
Ridgeland, MS 39157

Power of Attorney

KNOW ALL MEN BY THE PRESENTS:
That **Ascot Surety & Casualty Company** and **Ascot Insurance Company**, each a corporation organized and existing under the laws of the State of Colorado (the "Companies"), do hereby constitute and appoint:

Charles Martin, Lavonne Sherrod, Leanne Hammons and Megan Ford

of Knoxville, TN (city, state) and each its true and lawful Attorney(s)-In-Fact, with full authority to sign, execute, seal, acknowledge and deliver for, and on its behalf, and as its act and deed any place within the United States, or, if the following line is filled in, only within the area and up to the amount therein designated, any and all bonds, undertakings, recognizances, and other contracts of indemnity or writings obligatory in the nature thereof, issued in the course of its surety business, and to bond the Companies as follows:

Any such obligations in the United States not to exceed $100,000,000.00.

The Companies hereby ratify and confirm all and whatsoever said Attorney(s)-in-fact may lawfully do in the premises by virtue of these presents. These appointments are made under and by authority Resolutions adopted by the Board of Directors of the Companies, which resolutions are still in effect:

RESOLVED, that any of the Chief Executive Office, the Chief Operating Officer or the Chief Underwriting Officer, acting in conjunction with the head of the surety business line for the Corporation (each an Authorized Individual" and, collectively, the Authorized Individuals"), are authorized to jointly appoint one or more attorneys-in-fact to represent and act for and on behalf of the Corporation in the transaction of the Corporation's surety business to execute (under the common seal of the Corporation if appropriate) bonds, undertakings, recognizances and other contracts of indemnity and writings obligatory in the nature thereof;
RESOLVED, that in conjunction with the Corporation's transaction of surety business the signatures and attestations of the Authorized Individuals and the seal of the Corporation be affixed to any such Power of Attorney or to any certificate relating thereto (electronic or otherwise) by facsimile and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seals (electronic or otherwise) shall be valid and bonding upon the Corporation when so affixed with respect to any bond, undertaking, recognizance or tother contract of indemnity or writing obligatory in the nature thereof;
RESOLVED, that in connection with the Corporation's transaction of surety business, the facsimile electronic or mechanically reproduced signature of any Authorized Individual, whether made heretofore or hereafter, whenever appearing upon a copy of any Power of Attorney of the Corporation, with signatures affixed as next above noted, shall be valid and binding upon the Corporation with the same force and effect as though manually affixed.

IN WITNESS WHEREOF, the Companies have caused these presents with the respective corporate seals and to be executed by the individuals named below who are duly authorized and empowered to execute the Power of Attorney on the Companies' behalf, this 13th day of March 2025.

ASCOT SURETY & CASUALTY COMPANY
ASCOT INSURANCE COMPANY

Matthew Conrad Kramer (Chief Executive Officer)

Tara North (Executive Vice President, Surety)

STATE OF CONNECTICUT)
COUNTY OF FAIRFIELD) ss.

On this 13th day of March 2025, before me came the above named Chief Executive Officer of each Ascot Surety & Casualty Company and Ascot Insurance Company and the head of the surety business line for each of Ascot Surety & Casualty Company and Ascot Insurance Company, to me personally known to be the individuals described herein, and acknowledged that the seals affixed to the preceding instrument and the corporate seals of each Ascot Surety & Casualty Company and Ascot Insurance Company, and that the said corporate seals and signatures were duly affixed and subscribed to said instrument by the authority and direction of said Companies.

KSENIA E. GUSEVA
NOTARY PUBLIC
STATE OF CONNECTICUT
My Commission Expires June 30, 2029

Notary Public Ksenia E Guseva
My commission expires on June 30, 2029

I, the undersigned Secretary of the Company, do hereby certify that the foregoing excerpts of the Resolution adopted by the Board of Directors of the Companies, and the Power of Attorney issued pursuant thereto, are true and correct, and further certify that both the Resolution and the Power of Attorney are still in full force and effect.

This Certificate may be signed by facsimile under and by the authority of the following resolution of the Board of Directors of the Companies.

RESOLVED, that in connection with the Corporation's transaction of surety business the signatures and attestations of the Authorized Individuals and the seal of the Corporation be affixed to any such Power of Attorney or to any certificate relating thereto (electronic or otherwise) by facsimile and any such Power of Attorney of certificate bearing such facsimile signatures or facsimile seal (electronic or otherwise) shall be valid and binding upon the Corporation when so affixed with respect to any bond, undertaking, recognizances or other contract of indemnity or writing obligatory in the nature thereof;

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Companies, this 8th day of May, 2026

ASCOT SURETY & CASUALTY COMPANY
ASCOT INSURANCE COMPANY

John Gill, Secretary