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

# PROPOSAL

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

| | |
|---|---|
| CONTRACT ID | C205225 |
| WBS | 18314.1075015, 18314.1075016, 18314.1075017, 18314.1075018, 18314.1075019, 18314.1075020, 18314.1075021, 18314.1075022, 18314.1075023, 18314.1075025, 18314.1075026, 18314.1075027, 18314.1075028, 18314.1075029, 18314.1075030, 18314.1075035 |
| FEDERAL-AID NO. | HELENE |
| COUNTY | POLK |
| T.I.P NO. | |
| MILES | 1.157 |
| ROUTE NO. | US-176 |
| LOCATION | SITES 936-940, 942-944, 314, 316-321, 941: US-176 FROM 0.1 M N OF THOMPSON RD TO 0.8 M EAST OF BEAR CREEK LN. W03293 |
| TYPE OF WORK | GRADING, DRAINAGE, PAVING, AND RETAINING WALLS. |

**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 $40,000 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. C205225 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. **C205225** 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. **C205225** 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:
Jonathan H. Weathersbee
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06/19/2026

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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 **September 14, 2026**, 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 **May 13, 2030**.

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 **September 14, 2026**.

The completion date for this intermediate contract time is **November 14, 2029**.

The liquidated damages for this intermediate contract time are **Three Thousand Seven Hundred Dollars ($ 3,700.00)** 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. 10-15-13) 108 SP1 G14 E

The Contractor shall complete the required work of installing, maintaining and removing the traffic control devices for road closures and restoring traffic to the existing traffic pattern. The Contractor shall not stop traffic on **US 176** during the following time restrictions:

DAY AND TIME RESTRICTIONS

**Monday thru Friday, 6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM**

The maximum allowable time for PCB installation is **twenty (20)** minutes for **US 176**. The Contractor shall reopen the travel lanes to traffic until any resulting traffic queue is depleted.

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

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

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

**MANDATORY PRE-BID CONFERENCE (Prequalifying To Bid):**
(7-18-06) (Rev. 12-23-25) SPI 1-14A

In order for all prospective bidders to have an extensive knowledge of the project, all prospective bidders shall attend a mandatory pre-bid conference at 10:00 AM, Tuesday, June 30, 2026.

Location: On the project site – At the intersection of US 176
and Bear Creek Ln (just before the road closure barricades).

For any questions about the pre-bid conference, please contact:

Contact: Mike Patton
Ext-mdpatton@ncdot.gov
(828-400-9462)

The pre-bid conference will include a thorough discussion of the plans, contract pay items, special provisions, etc.

Only bidders who have attended and properly registered at the above scheduled pre-bid conference and who have met all other prequalification requirements will be considered prequalified to bid on this project. A bid received from a bidder who has not attended and properly registered at the above scheduled pre-bid conference will not be accepted and considered for award. There is not a virtual or call-in option for this mandatory pre-bid conference.

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

(A) The individual will ensure his name and all required information has been recorded on the official roster no later than 30 minutes after the above noted time for the beginning of the conference. Attendees can request that the names and their companies' names on the official roster be read aloud.

(B) The individual has written in the name and address of the company he or she represents.

(C) Only one company has been shown as being represented by the individual attending.

(D) The individual attending is an officer or permanent employee of the company they are representing.

Attendance at any prior pre-bid conference will not meet the requirement of this provision.

**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.

**NO MAJOR CONTRACT ITEMS:**
(2-19-02) (Rev. 8-21-07) 104 SP1 G31

None of the items included in this contract will be major items.

**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** |
|---|---|
| 63-67 | Guardrail |
| 70-76 | Signing |
| 93 | Long-Life Pavement Markings |
| 94 | Removable Tape |
| 99 | Permanent Pavement Markers |
| 100 | Utility Construction |
| 101-129, 131-133 | Erosion Control |
| 130 | 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 **$ 4.1012** 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 **$ 47.50** per hundredweight.
The bidding index for Category 2 Steel items is **$ 64.29** per hundredweight.
The bidding index for Category 3 Steel items is **$ 76.75** per hundredweight.
The bidding index for Category 4 Steel items is **$ 54.86** per hundredweight.
The bidding index for Category 5 Steel items is **$ 59.31** per hundredweight.
The bidding index for Category 6 Steel items is **$ 75.35** per hundredweight.
The bidding index for Category 7 Steel items is **$ 50.20** per hundredweight.

The bidding index represents a selling price of steel based on Fastmarkets data for the month of **May 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)**

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Project bid on September 17, 2019

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

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

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

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

The Steel Price Adjustment formula is as follows:

**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)**

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Project bid on December 18, 2018

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

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

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

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

The Steel Price Adjustment formula is as follows:

**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)**

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Project bid on July 16, 2020

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

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

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

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

The Steel Price Adjustment formula is as follows:

**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. 6-16-26) 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) |
|---|---|
| 2027 (7/01/26 - 6/30/27) | **33**% of Total Amount Bid |
| 2028 (7/01/27 - 6/30/28) | **34**% of Total Amount Bid |
| 2029 (7/01/28 - 6/30/29) | **27**% of Total Amount Bid |
| 2030 (7/01/29 - 6/30/30) | **6**% 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 B

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

**PORTABLE CONCRETE BARRIER - (Partial Payments for Materials):**
(7-1-95)(Rev. 1-16-24) 1170-4 SP1 G121

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

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

**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.

**COOPERATION BETWEEN CONTRACTORS:**
(7-1-95)(Rev. 1-16-24) 105-7 SP1 G133

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

Map #3 of the 2025CPT.14.12.10751, etc. (DN01109) is located adjacent to the off-site detour of this project. DN01109 is currently under construction and not anticipated to be completed prior to the letting of this project.

18314.1075011, etc. (DN01143) is located within the off-site detour of this project. DN01143 is currently under construction and not anticipated to be completed prior to the letting of this project.

Map #1 and #2 of the 2026CPT.14.10.20751 (DN01150) is located within the off-site detour of this project. DN01150 is currently under construction and not anticipated to be completed prior to the letting of this project.

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

**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 shall immediately notify the Engineer if Native American and / or human remains are encountered during ground disturbance, construction or demolition activities. The Engineer will then notify the Catawba Indian Nation.

The contractor's attention is directed to 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. The contractor shall be responsible for implementing the applicable conservation measures in the Programmatic Conference Report titled "Five Imperiled Bat Species in Western North Carolina".

# 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 |

## INSTALL CONDUIT (6”):

### Description

Install Conduit (6”) at locations shown on the plans and/or as directed by the Engineer.

### Materials

Refer to the NCDOT Standard Specifications.

| Item | Section |
|---|---|
| Select Materials | 1016 |

Use select materials for bedding material under conduits. 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**

Placement, shield and shoring, bedding, and backfilling of the utility conduits shall be in accordance with the Detail on Sheet 2A-2 with further reference of the Standard Specifications. Prior to backfilling, Contractor shall permit utility companies to inspect conduit(s) for acceptance. Contractor shall provide an initial notification to utility companies at least ten (10) days in advance of conduit installation. After the initial notification, the Contractor shall provide reasonable notification for periodic inspections before and during backfill operations. No spacers or snake trays are required. Contractor shall provide an initial notification to Riverstreet at least two (2) days in advance of guardrail installation at Site 316.

**Measurement and Payment**

Install Conduit (6") will be measured and paid in actual number of linear feet of 6" diameter conduit that has been incorporated into the completed and accepted work. The contract unit price for Install Conduit (6") will be the full compensation for all labor, tools equipment, and materials in accordance with this provision and as directed by the Engineer. Select materials used for bedding are incidental to the unit price for Install Conduit (6").

Payment will be made under:

| **Pay Item** | **Pay Unit** |
|---|---|
| Install Conduit (6") | Linear Feet |

**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 **$ 765.63** per ton.

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

Revise the *Standard Specifications* as follows:

**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".

**TEMPORARY SHORING:**
(2-20-07)(Rev. 1-16-24) SP11 R02

**Description**

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

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

(A) Cantilever and Braced Shoring

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

(B) Anchored Shoring

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

(C) Temporary MSE Walls

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

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

geogrid wall" as a temporary geosynthetic wall with geogrid reinforcement and "temporary geostrip wall" as a temporary geosynthetic wall with geostrip reinforcement.

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

(D) Embedment

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

(E) Positive Protection

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

**Materials**

Refer to the *Standard Specifications*.

| **Item** | **Section** |
|---|---|
| Concrete Barrier Materials | 1170-2 |
| Flowable Fill, Excavatable | 1000-7 |
| Geosynthetics | 1056 |
| Grout, Type 1 | 1003 |
| Portland Cement | 1024-1 |
| Portland Cement Concrete | 1000 |
| Select Materials | 1016 |
| Steel Beam Guardrail Materials | 862-2 |
| Steel Plates | 1072-2 |
| Steel Sheet Piles and H-Piles | 1084 |
| Untreated Timber | 1082-2 |
| Water | 1024-4 |
| Welded Wire Reinforcement | 1070-3 |

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

(A) Shoring Backfill

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

(B) Anchors

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

(1) Ground Anchors

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

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

(2) Helical Anchors

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

(3) Anchorages

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

(C) Temporary Walls

(1) Welded Wire Facing

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

(2) Geotextiles

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

(3) Geogrid and Geostrip Reinforcement

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

https://connect.ncdot.gov/resources/Geological/Pages/Products.aspx

Provide geogrids and geostrips with design strengths in accordance with the accepted submittals. Geogrids and geostrips are approved for short-term design strengths (3-year design life) in the machine direction (MD) and cross-machine direction (CD) based on material type. Define material type from the website above for shoring backfill as follows:

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

(4) Welded Wire Grid and Metallic Strip Reinforcement

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

**Preconstruction Requirements**

(A) Concrete Barrier

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

(B) Temporary Guardrail

Define "clear distance" behind temporary guardrail as the horizontal distance between guardrail posts and temporary shoring. At the Contractor's option or if clear distance for

cantilever, braced and anchored shoring is less than 4 feet, attach guardrail to traffic side of shoring as shown in the plans. Place ABC in clear distance and around guardrail posts instead of pavement. Do not use temporary guardrail above temporary walls.

(C) Temporary Shoring Designs

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

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

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

(1) Soil Parameters

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

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

(b)

| **Friction Angle ($\phi$)** | **Shoring Backfill** |
|---|---|
| 30° | A-2-4 Soil |
| 34° | Class II, Type 1 or Class III Select Material |
| 38° | Class V or VI Select Material |

(c) Cohesion (c) = 0 psf.

(2) Traffic Surcharge

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

(3) Cantilever, Braced and Anchored Shoring Designs

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

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

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

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

(4) Temporary Wall Designs

Use shoring backfill in the reinforced zone of temporary walls. Separation geotextiles are required between shoring backfill and backfill, natural ground or culverts along the sides of the reinforced zone perpendicular to the wall face. For Class V or VI select material in the reinforced zone, separation geotextiles are also required between shoring backfill and backfill or natural ground on top of and at the back of the reinforced zone.

Design temporary walls in accordance with the plans and Article 11.10 of the *AASHTO LRFD Bridge Design Specifications*. Embed temporary walls at least 18

inches except for walls on structures or rock as determined by the Engineer. Use a uniform reinforcement length throughout the wall height of at least 0.7H or 6 feet, whichever is longer. Extend the reinforced zone at least 6 inches beyond end of reinforcement. Do not locate the reinforced zone outside right-of-way or easement limits.

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

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

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

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

(D) Preconstruction Meeting

The Engineer may require a shoring preconstruction meeting to discuss the construction, inspection and testing of the temporary shoring. If required and if this meeting occurs before all shoring submittals have been accepted, additional preconstruction meetings may be required before beginning construction of temporary shoring without accepted submittals. The Resident, District or Bridge Maintenance Engineer, Area Construction Engineer, Geotechnical Operations Engineer, Contractor and Shoring Contractor Superintendent will attend preconstruction meetings.

**Construction Methods**

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

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

(A) Tolerances

Construct shoring with the following tolerances:

(1) Horizontal wires of welded wire facing are level in all directions,

(2) Shoring location is within 6 inches of horizontal and vertical alignment shown in the accepted submittals, and

(3) Shoring plumbness (batter) is not negative and within 2 degrees of vertical.

(B) Cantilever, Braced and Anchored Shoring Installation

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

(1) Pile Installation

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

Do not splice sheet piles. Use pile excavation to install drilled-in H-piles. After filling holes with concrete or Type 1 grout to the elevations shown in the accepted submittals, remove any fluids and fill remaining portions of holes with flowable fill. Cure concrete or grout at least 7 days before excavating.

Notify the Engineer if refusal is reached before pile excavation or driven piles attain the minimum required embedment. When this occurs, a revised design submittal may be required.

(2) Excavation

Excavate in front of piles from the top down in accordance with the accepted

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

(3) Anchor Installation

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

(a) Materials in accordance with this provision are required instead of materials conforming to Articles 6.4 and 6.5.3 of the AASHTO LRFD Specifications,

(b) Encapsulation-protected ground anchors in accordance with Article 6.4.1.2 of the AASHTO LRFD specifications are not required, and

(c) Corrosion protection for unbonded lengths of ground anchors and anchorage covers are not required.

(d) Mix and place neat cement grout in accordance with Subarticles 1003-5, 1003-6 and 1003-7 of the *Standard Specifications*. Measure grout temperature, density and flow during grouting with at least the same frequency grout cubes are made for compressive strength. Perform density and flow field tests in the presence of the Engineer in accordance with American National Standards Institute/American Petroleum Institute Recommended Practice 13B-1 (Section 4, Mud Balance) and ASTM C939 (Flow Cone), respectively.

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

(4) Anchor Testing

Proof test and lock-off anchors in accordance with the accepted submittals and Article 6.5.5 of the *AASHTO LRFD Bridge Construction Specifications* except for the acceptance criteria in Article 6.5.5.5. For the AASHTO LRFD specifications,

"ground anchor" refers to a ground or helical anchor and "tendon" refers to a bar, strand or shaft.

(a) Anchor Acceptance

Anchor acceptance is based in part on the following criteria.

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

(b) Anchor Test Results

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

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

(C) Temporary Wall Installation

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

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

Attach geostrip reinforcement to welded wire facing and wrap geotextile reinforcement and retention geotextiles behind welded wire facing as shown in the plans and accepted submittals. Cover geotextiles with at least 3" of shoring backfill. Overlap adjacent geotextile reinforcement and retention and separation geotextiles at least 18 inches with seams oriented perpendicular to the wall face. Hold geotextiles in place with wire staples or anchor pins as needed.

Place reinforcement within 3 inches of locations shown in the plans and accepted submittals. Before placing shoring backfill, pull geosynthetic reinforcement taut so it is

in tension and free of kinks, folds, wrinkles or creases. Install reinforcement with the direction shown in the plans and accepted submittals. For temporary wire walls with separate reinforcement and facing components, attach welded wire grid or metallic strip reinforcement to welded wire facing as shown in the accepted submittals. Do not splice or overlap reinforcement so seams are parallel to the wall face. Contact the Engineer when unanticipated existing or future obstructions such as foundations, pavements, pipes, inlets or utilities will interfere with reinforcement.

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

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

**Measurement and Payment**

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

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

No payment will be made for temporary shoring not shown in the plans or required by the Engineer including shoring for OSHA reasons or the Contractor’s convenience. No value engineering proposals will be accepted based solely on revising or eliminating shoring locations shown in the plans or estimated quantities shown in the bid item sheets as a result of actual field

measurements or site conditions.

PCB will be measured and paid in accordance with Article 1170-4 of the *Standard Specifications*. No additional payment will be made for anchoring PCB for temporary shoring. Costs for anchoring PCB will be incidental to temporary shoring.

Temporary guardrail will be measured and paid for in accordance with Article 862-6 of the *Standard Specifications*.

Payment will be made under:

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

**WORK ZONE INSTALLER:**

(7-20-21)(Rev. 4-21-26) 1101 SP11 R04

Revise the *Standard Specifications* as follows:

**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.

**TEMPORARY CRASH CUSHIONS:**

(4-21-26) 1089, 1160 SP11 R06

Revise the *Standard Specifications* as follows:

**Page 10-204, Subarticle 1089-8(A) General, lines 26-29**, delete the third and fourth paragraph.

**Page 10-204, Subarticle 1089-8(A) General, line 34**, delete the last sentence of the fifth paragraph.

**Page 11-14, Article 1160-2 MATERIALS, lines 32-35**, delete the second and third sentence of the first paragraph.

**Page 11-15, Article 1160-3 CONSTRUCTION METHODS**, add the following after line 1:

Use a redirective, non-gating temporary crash cushion when adequate space for the lateral displacement of the crash cushion is not available or as required in the TMP.

**Page 11-15, Article 1160-3 CONSTRUCTION METHODS, line 7**, add the following to the second paragraph:

Temporary crash cushion shall not be placed on an unpaved surface.

**CONES:**
(3-19-24) 1135 SP11 R35

Revise the *Standard Specifications* as follows:

**Page 11-11, Article 1135-3 CONSTRUCTION METHODS, lines 19-20,** delete the third sentence of the first paragraph, "Do not use cones in the upstream taper of lane or shoulder closures for multi-lane roadways.".

**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 steady 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.

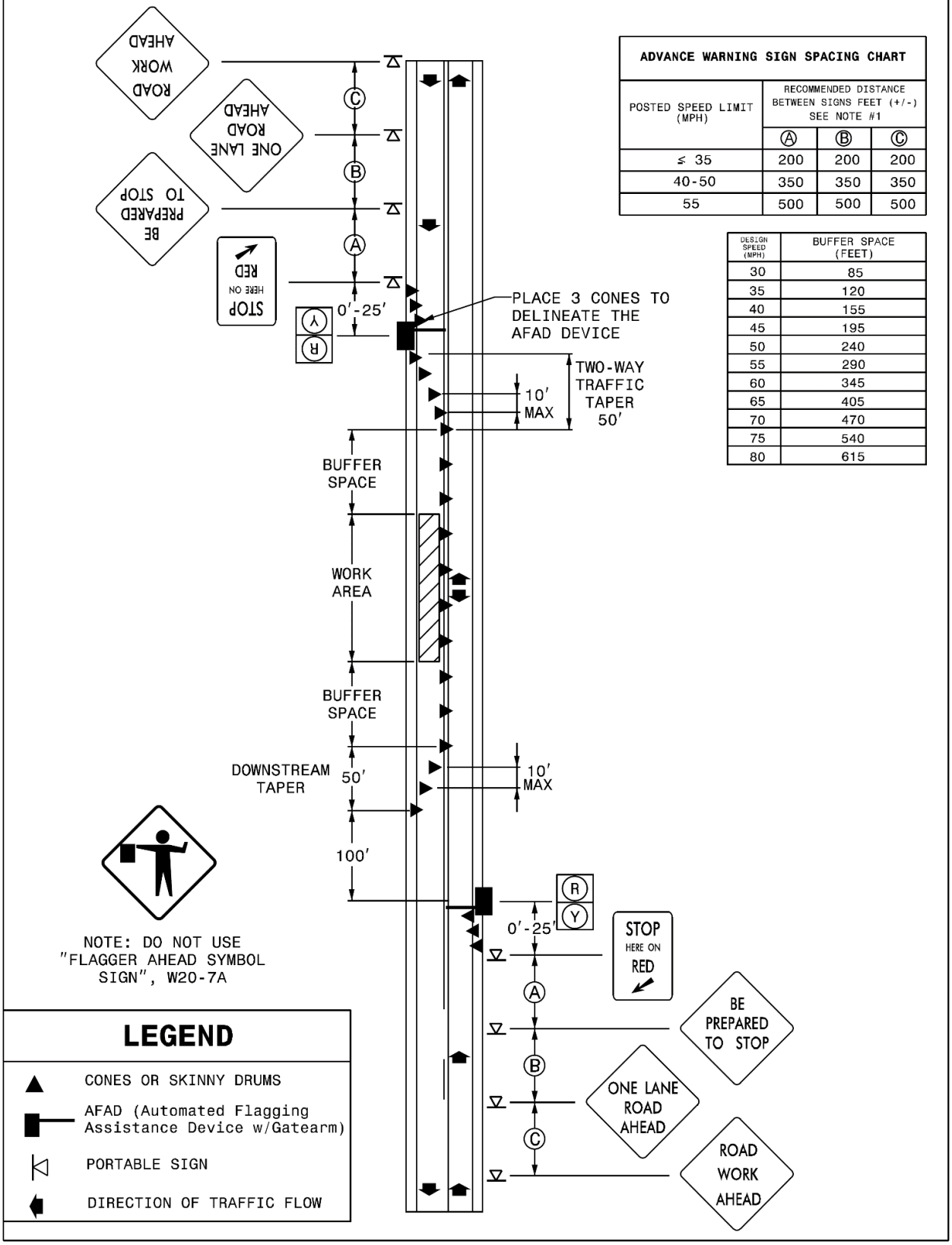
**Page 11-14, Article 1150-4, MEASUREMENT AND PAYMENT,** add the following after line 24:

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.

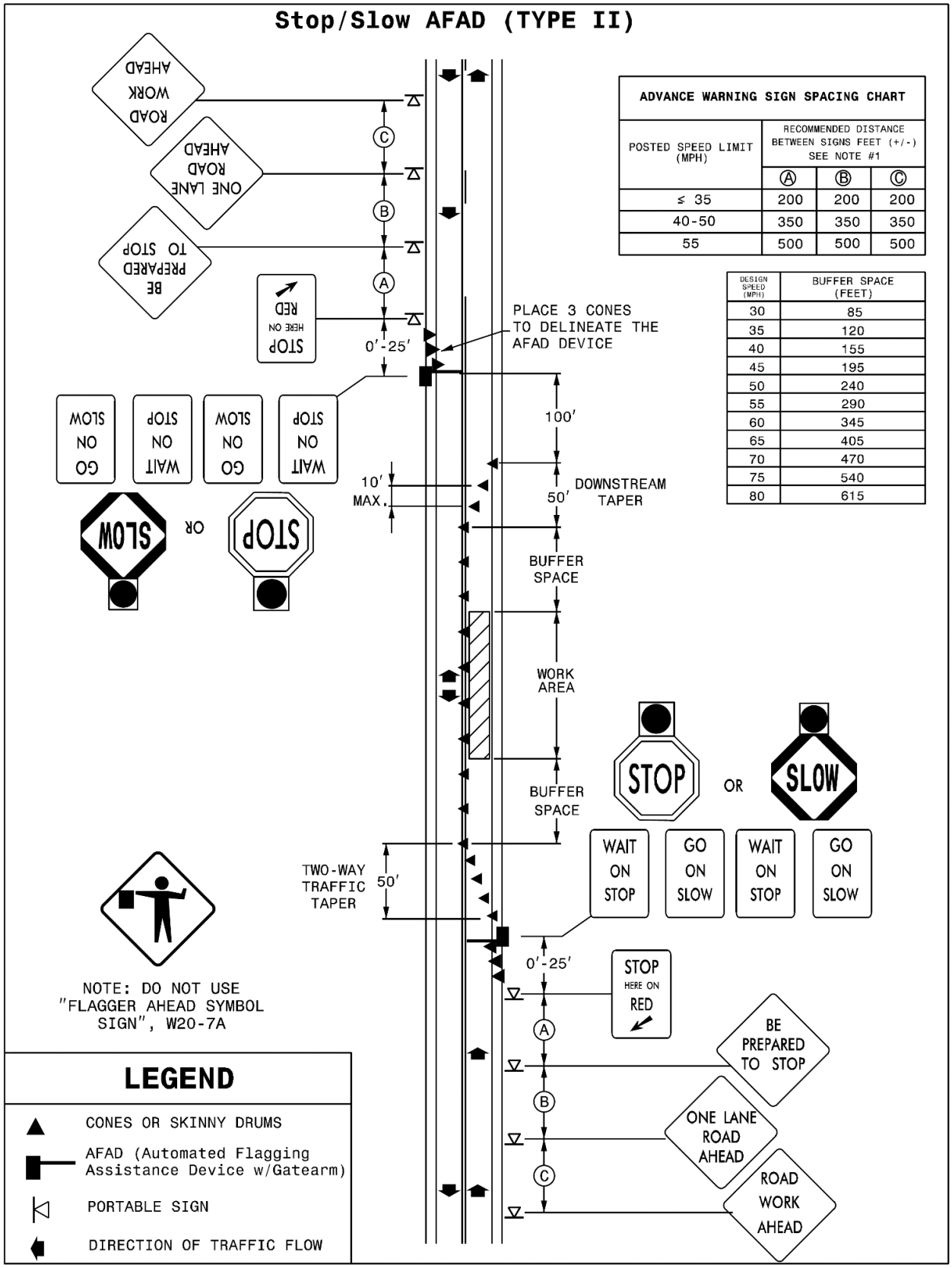
No separate measurement or payment will be made for AFAD or PTS unit operators, as the cost of such including their training and operational costs shall be included in the unit or lump sum price for *Flaggers* or *Temporary Traffic Control*. Such price and payment also includes the relocation, maintenance, 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 |




**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 |

**PORTABLE CONCRETE BARRIER:**

Revise the *Standard Specifications* as follows:

**Page 11-17, Subarticle 1170-3(A)(1) Portable Concrete Barrier,** after line 25, add the following:

For MASH approved F-Shape K-Wall, install anchorage transitions between unanchored portable concrete barrier and temporary crash cushions, and between unanchored portable concrete barrier and portable concrete barrier (anchored) as shown in the *Roadway Standard Drawings*, No. 1170.01.

**Page 11-19, Article 1170-4 MEASUREMENT AND PAYMENT, line 16,** after the second sentence of the first paragraph add the following:

Crash cushion to unanchored concrete requires a transition

**Page 11-19, Article 1170-4 MEASUREMENT AND PAYMENT, line 13,** delete and replace "*Portable Concrete Barrier (____)*" with "*Portable Concrete Barrier*".

**Page 11-19, Article 1170-4 MEASUREMENT AND PAYMENT, line 16,** after the second sentence of the first paragraph add the following:

As shown in the *Roadway Standard Drawings*, No. 1170.01, anchorage transition sections between *Portable Concrete Barrier* and *Temporary Crash Cushions* as found in Section 1160 will be measured and paid as *Portable Concrete Barrier*. No additional payment will be made for equipment, materials or labor to meet the anchorage transition requirements.

**Page 11-19, Article 1170-4 MEASUREMENT AND PAYMENT, line 16,** after the first paragraph add the following:

*Portable Concrete Barrier (Anchored)* will be measured and paid as the maximum number of linear feet furnished, satisfactorily installed, accepted by the Engineer, maintained and removed, at any one time during the life of the project, including anchorage transition sections between portable concrete barrier and portable concrete barrier (anchored) as shown in the Roadway Standard Drawings, No. 1170.01. Measurement will be made by counting the number of barrier units used and multiplying by the length of a unit.

**Page 11-19, Article 1170-4 MEASUREMENT AND PAYMENT, line 21,** delete and replace "*Remove and Reset Portable Concrete Barrier (____)*" with "*Remove and Reset Portable Concrete Barrier*".

**Page 11-19, Article 1170-4 MEASUREMENT AND PAYMENT, line 24,** after the second sentence of the third paragraph add the following:

As shown in the *Roadway Standard Drawings*, No. 1170.01, anchorage transition sections between *Portable Concrete Barrier* and *Temporary Crash Cushions* as found in Section 1160 will be measured and paid as *Remove and Reset Portable Concrete Barrier*. No additional payment will be made for equipment, materials or labor to meet the anchorage transition requirements.

**Page 11-19, Article 1170-4 MEASUREMENT AND PAYMENT, line 28,** after the third paragraph add the following:

*Remove and Reset Portable Concrete Barrier (Anchored)* will be measured and paid as the number of linear feet of barrier moved from one location on the project to another location on the project, including anchorage transition sections between portable concrete barrier and portable concrete barrier (anchored) as shown in the Roadway Standard Drawings, No. 1170.01. Measurement will be made by counting the number of barrier units moved during any one move and multiplying by the length of a unit. Where barrier units are moved more than once, each move will be measured separately. Whenever the Engineer directs the Contractor to move barrier units from an installed location to a stockpile either on or off the project and then back to another installed location, the complete move from the first installed location to the next installed location will be measured as 2 moves.

## PAVEMENT MARKINGS:

(5-19-26)(Rev. 6-16-26) 1087, 1205 SP12 R04

Revise the *Standard Specifications* as follows:

**Page 10-185, Subarticle 1087-2(A) Paint Composition, line 15**, replace "TT--P-1952" with "TT--P-1952, Type III".

**Page 10-185, Subarticle 1087-2(C) Thermoplastic Composition, lines 28-33**, replace the first through third paragraph and the table with the following:

### (C) Thermoplastic and Integrated Multipolymer (IMP) Composition

Use thermoplastic alkyd/maleic pavement markings composed of the materials in Table 1087-1A and integrated multipolymer markings composed of the materials in Table 1087-1B.

**TABLE 1087-1A**
**PHYSICAL PROPERTIES**
**OF THERMOPLASTIC PAVEMENT MARKINGS**

| Component | By Weight |
|---|---|
| Alkyd/Maleic Binder | 18.0% Min |
| Premixed Glass Beads (AASHTO M 247 – Type 3) | 40.0% Min |
| Titanium Dioxide Pigment (ASTM D476 Type 2) | 10.0% Min. (white)<br>1.5% Min. (yellow) |

**TABLE 1087-1B**
**PHYSICAL PROPERTIES**
**OF INTEGRATED MULTIPOLYMER (IMP) PAVEMENT MARKINGS**

| Component | By Weight |
|---|---|
| Binder | 21.0% Min |
| Premixed Glass Beads (AASHTO M 247 – Type 3) | 40.0% Min |
| Titanium Dioxide Pigment (ASTM D476 Type 2) | 10.0% Min. (white only) |
| Inert Filler | 15% Max white / 24% Max Yellow |

Use white material that does not contain anatase titanium dioxide pigment. Use yellow material that does not contain any intentionally added lead chromate.

Calcium carbonate and inert fillers may be used by the manufacturer, providing all other qualifications are met.

**Page 10-185, Subarticle 1087-2(C) Thermoplastic Composition, line 34**, replace "thermoplastic" with "material".

**Page 10-185, Subarticle 1087-2(C) Thermoplastic Composition, line 36**, replace "alkyd/maleic binder" with "binder".

**Page 10-185, Subarticle 1087-2(C) Thermoplastic Composition, line 38**, replace "maleic-modified glycerol of resin" with "rosin ester".

**Page 10-186, Subarticle 1087-2(C) Thermoplastic Composition,** insert the following paragraph after line 2:

The integrated multipolymer binder shall consist of a mixture of modified rosin ester, polyamide and a copolymer (e.g. EVA) with waxes and/or plasticizers. At least 3% of the total formulation weight shall be 100% polyamide. The binder shall contain no petroleum hydrocarbon resins.

**Page 10-186, Subarticle 1087-2(C) Thermoplastic Composition, lines 3, 6, 9 and 11**, replace "thermoplastic material" with "material".

**Page 10-186, Article 1087-3 COLOR, after line 27**, replace "Crystal: Color No. 17886 (White)" with "White: Color No. 17925".

**Page 10-186, Subarticle 1087-4(A) Composition, lines 31-34**, replace the second paragraph with the following:

Manufacture the beads from 100% recycled or virgin non-pigmented glass from a composition designed to be highly resistant to traffic wear and to the effects of weathering. All intermix and drop-on glass beads shall be manufactured using 100% North American recycled glass cullet, virgin North American glass or a combination of the two.

**Page 10-187, Subarticle 1087-4(C) Gradation & Roundness, lines 4-6**, replace the first paragraph and table with the following:

Use drop-on and intermixed glass beads in all pavement markings with at least 80% true spheres when tested in accordance with ASTM D1155. Drop-on glass beads for permanent pavement markings shall be high performance glass beads listed on the NCDOT APL. If otherwise specified, or at the direction of the Engineer, other drop-on reflective media may be used on permanent markings. Drop-on glass beads used on any interim or temporary pavement markings shall meet Table 1087-2.

**TABLE 1087-2**
**GLASS BEAD GRADATION REQUIREMENTS**

| Sieve Size | Gradation Requirements | |
|---|---|---|
| | **Minimum** | **Maximum** |
| Passing #20 | 95% | 100% |
| Retained on #30 | 5% | 20% |
| Retained on #50 | 40% | 80% |
| Retained on #80 | 15% | 50% |
| Passing #80 | 0% | 10% |
| Retained on #200 | 0% | 5% |

**Page 10-187, Article 1087-5 PACKAGING FOR SHIPMENT, line 31**, replace "Thermoplastic pavement marking materials" with "Thermoplastic and integrated multipolymer pavement marking materials".

**Page 10-188, Subarticle 1087-7(B) Thermoplastic Pavement Marking Material Composition, line 17**, replace **"(B) Thermoplastic Pavement Marking Material Composition**" with
"**(B) Thermoplastic and Integrated Multipolymer Pavement Marking Material Composition**".

**Page 10-188, Subarticle 1087-7(C) Flash Point, line 22**, replace "thermoplastic" with "thermoplastic and integrated multipolymer material".

**Page 10-188, Subarticle 1087-7(D) Requirements, line 25**, replace "thermoplastic material" with "thermoplastic and integrated multipolymer material".

**Page 10-189, Subarticle 1087-7(D), after line 15**, add the following:

(9) Tensile Elongation

The integrated multipolymer material shall have an elongation of at least 10% when tested in accordance with ASTM D638 (1"x 6", 0.25"/min).

(10) Abrasion Resistance

The integrated multipolymer material shall have no more than 0.40 g weight loss following taber abrasion with CS17 wheels for 1000 cycles with 1 kg weight per ASTM D4060.

**Page 10-189, Article 1087-8 MATERIAL CERTIFICATION, lines 22-23**, replace the third

paragraph with the following:

Reflective media not covered in this, or other specifications must meet AASHTO M 247 Type 3 or 4 and a NCDOT Type 2 Material Certification must be provided.

**Page 10-189, Article 1087-8 MATERIAL CERTIFICATION, after line 23**, add the following to the table:

| | |
|---|---|
| Integrated Multipolymer | Type 2 Material Certification and Type 3 Material Certification |

**Page 12-3, Subarticle 1205-3(F) Surface Preparation and Curing Compound Removal, line 8**, add the following as a second sentence of the first paragraph:

Only apply markings to dry clean surfaces.

**Page 12-4, Subarticle 1205-3(G)(1) General for all types of Pavement Markings, line 16**, replace the first sentence of the eighth paragraph with the following:

Protect the pavement markings until they are track free before exposing them to traffic.

**Page 12-4, Subarticle 1205-3(G)(1) General for all types of Pavement Markings, lines 22-24**, delete the second sentence of the tenth paragraph.

**Page 12-4, Subarticle 1205-3(G)(1) General for all types of Pavement Markings, after line 24**, replace "White: Color No. 17886" with "White: Color No. 17295".

**Page 12-5, Subarticle 1205-3(I) Removal of Pavement Markings, line 32**, add the following as the third sentence of the seventh paragraph:

Before applying integrated multipolymer (IMP) pavement markings over existing thermoplastic pavement markings, remove at least 85% of the oxidized existing thermoplastic.

**Page 12-5, Subarticle 1205-3(I) Removal of Pavement Markings, line 35**, replace "thermoplastic" with "thermoplastic or IMP".

**Page 12-6, Article 1205-4 THERMOPLASTIC, line 3**, replace "**1205-4 THERMOPLASTIC**" with **"1205-4THERMOPLASTIC AND INTEGRATED MULTIPOLYMER (IMP)".**

**Page 12-6, Subarticle 1205-4(A) Application Equipment, lines 7, 16, 20, 24, 25, 27 and 29**, delete "thermoplastic"

**Page 12-6, Subarticle 1205-4(B) Weather Limitations and Seasonal Limitations, line 38**, replace "thermoplastic pavement markings" with "thermoplastic or integrated multipolymer pavement markings".

**Page 12-6, Subarticle 1205-4(B) Weather Limitations and Seasonal Limitations, line 42**, delete "thermoplastic".

**Page 12-7, Subarticle 1205-4(C) Application, lines 2, 3, 10, 21 and 31**, delete "thermoplastic".

**Page 12-7, Subarticle 1205-4(C) Application, after line 17**, in Table 1205-2 MINIMUM REFLECTOMETER REQUIREMENTS FOR THERMOPLASTIC replace "Standard Glass Beads" with "High Performance Glass Beads" and for the Reflectivity of White replace "375 mcd/lux/$m^2$" with "425 mcd/lux/$m^2$" and Yellow replace "250 mcd/lux/$m^2$" with "325 mcd/lux/$m^2$"

**Page 12-7, Subarticle 1205-4(C) Application, line 23**, replace "thermoplastic pavement marking" with "final pavement marking".

**Page 12-7, Subarticle 1205-4(C) Application, after line 32**, replace "**TABLE 1205-3 THICKNESS REQUIREMENTS FOR THERMOPLASTIC**" with "**TABLE 1205-3 THICKNESS REQUIREMENTS FOR THERMOPLASTIC AND INTEGRATED MULTIPOLYMER**".

**Page 12-9, Subarticle 1205-5(C) Observation Period, before line 1**, replace "375 mcd/lux/$m^2$" with "425 mcd/lux/$m^2$" and replace "250 mcd/lux/$m^2$" with "325 mcd/lux/$m^2$".

**Page 12-11, Subarticle 1205-8(C) Application, lines 17-20**, replace the first paragraph with the following:

Final pavement marking application of paint shall be placed in 1 application of 30 mils wet each and consist of reflective media applied at a rate to immediately obtain the minimum retroreflective values.

**Page 12-11, Subarticle 1205-8(C) Application, line 26**, delete "15 mil".

**Page 12-11, Subarticle 1205-8(C) Application, after line 31**, replace Table 1205-6 with the following:

**TABLE 1205-6**
**REFLECTOMETER REQUIREMENTS**
**FOR PAINT**

| Item | Color | Reflectivity |
|---|---|---|
| Standard Glass Beads | White | 225 mcd/lux/$m^2$ |
| | Yellow | 200 mcd/lux/$m^2$ |
| High Performance Glass Beads | White | 425 mcd/lux/$m^2$ |
| | Yellow | 325 mcd/lux/$m^2$ |

**Page 12-12, Article 1205-10 MEASUREMENT AND PAYMENT, lines 5-7**, delete and replace the second sentence of the first paragraph with the following:

In addition, *Paint Pavement Marking Lines* will be paid per linear foot for each 15 mil application placed in accordance with Subarticle 1205-8(C) for temporary pavement markings during temporary traffic patterns.

**Page 12-12, Article 1205-10 MEASUREMENT AND PAYMENT, lines 12-14**, delete and replace the second sentence of the second paragraph with the following:

In addition, *Paint Pavement Marking Symbols* will be paid for each 15 mil application placed in accordance with Subarticle 1205-8(C) for temporary pavement markings during temporary traffic patterns.

**Page 12-12, Article 1205-10 MEASUREMENT AND PAYMENT, lines 17-19**, delete and replace the third sentence of the third paragraph with the following:

In addition, *Paint Pavement Marking Characters* will be paid for each 15 mil application placed in accordance with Subarticle 1205-8(C) for temporary pavement markings during temporary traffic patterns.

**Page 12-12, Article 1205-10 MEASUREMENT AND PAYMENT, lines 17-19**, replace the second sentence of the ninth paragraph with the following:

No direct payment will be made for the work involved in applying the lines, including but not limited to surface preparation, reapplication of molten pavement marking crossed by a vehicle, removal of all pavement marking materials spilled on the roadway surface, and repair of markings tracked by a vehicle.

**Page 12-13, Article 1205-10 MEASUREMENT AND PAYMENT, after line 12**, add the following to the pay item and pay unit list:

| **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 |

**COIR FIBER MAT:**

(9-16-25) 1629 SP16 R05

Revise the *Standard Specifications* as follows:

**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

Revise the *Standard Specifications* as follows:

**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<br>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<br>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<br>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<br>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
Creeping Red Fescue
Japanese Millet
Reed Canary Grass
Zoysia

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 5% inert matter; maximum 144 restricted noxious weed seed per pound.

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

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

(1-16-24)(Rev. 6-16-26) 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 1-18, Article 102-10 BID BOND OR BID DEPOSIT, line 26,** replace " Subarticle 102-8(A)(8)(b)" with "Subarticle 102-8(A)(12)(b)".

**Page 1-20, Subarticle 102-14(A) State Funded Projects, line 3,** replace "$30,000" with "$40,000".

**Page 1-20, Subarticle 102-14(B) Federal Aid Projects, line 7,** replace "$30,000" with "$40,000".

**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".

**Page 16-27, Article 1644-5 MEASUREMENT AND PAYMENT, line 31,** replace "Article 1630-4" with "Article 1630-3".

**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;<br>49 CFR Part 21;<br>23 CFR 200;<br>49 U.S.C. 5332(b);<br>49 U.S.C. 47123.<br>*(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.<br>*Note:* Sex under this program does not include sexual orientation. | Women and Men | 1973 Federal-Aid Highway Act;<br>49 U.S.C. 5332(b);<br>49 U.S.C. 47123. |
| Age | Persons of any age | 21-year-old person | Age Discrimination Act of 1975<br>49 U.S.C. 5332(b);<br>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;<br>Americans with Disabilities Act of 1990 |
| Religion (in the context of employment)<br>*(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;<br>23 CFR 230;<br>FHWA-1273 Required Contract Provisions.<br>*(49 U.S.C. 5332(b);*<br>*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.

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**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. 6-16-26) Z-10

## Description

The North Carolina Department of Transportation administers a custom version of the Federal On-the-Job Training (OJT) Program, commonly referred to as the Alternative OJT Program. All Contractors will be automatically placed in the Alternative OJT Program.

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.

On the Job Training shall meet the requirements of 23 CFR 230.107 (b), 23 USC – Section 140, this special provision and the NCDOT On-the-Job Training Program Manual.

## Minorities and Women

Developing, training and upgrading of minorities and women toward journeyman level status is a primary objective of this special 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 Unit, will assign annual training goals based on the Contractor's activity over the past three years' on federal projects with the Department. At the beginning of each year, all eligible Contractors 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 implement a self-imposed on-the-job training program for the calendar year. This agreement will specify the annual training goals agreed upon by both parties. The number of training assignments may range from 1 to 15 per Contractor per calendar year, unless a higher number is agreed to by the Contractor. The Contractor shall sign an agreement committing 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.

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 special 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 trainees in each occupation shall be in their first year of 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 at minimum 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 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 05/18/2026 NC86**

Z-086

Date: May 18, 2026

General Decision Number: NC20260086 05/18/2026 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 |
| 1 | 05/18/2026 |

SUNC2014-001 11/13/2014

| | Rates | Fringes |
|---|---|---|
| TRUCK DRIVER (GVWR of 26,001 Lbs or Greater) | 13.50 | |
| TRUCK DRIVER (GVWR of 26,000 Lbs or Less) | 11.72 | |
| POWER EQUIPMENT OPERATORS (Milling Machine) | 13.88 | |
| POWER EQUIPMENT OPERATORS (Mechanic) | 18.51 | |
| POWER EQUIPMENT OPERATORS (Tack Truck/Distributor Operator) | 14.67 | .06 |
| POWER EQUIPMENT OPERATORS (Slip Form Machine) | 20.79 | |
| POWER EQUIPMENT OPERATORS (Scraper Rough) | 11.53 | |
| POWER EQUIPMENT OPERATORS (Scraper Finish) | 13.87 | |
| POWER EQUIPMENT OPERATORS (Roller Other) | 11.75 | |
| POWER EQUIPMENT OPERATORS (Roller Asphalt Finish) | 14.98 | .04 |
| POWER EQUIPMENT OPERATORS (Roller Asphalt Breakdown) | 14.05 | .06 |
| POWER EQUIPMENT OPERATORS (Paver Asphalt) | 15.68 | .05 |
| POWER EQUIPMENT OPERATORS (Pavement Marking Equipment) | 13.33 | |
| POWER EQUIPMENT OPERATORS (Oiler/Greaser) | 14.98 | |
| POWER EQUIPMENT OPERATORS (Off-Road Hauler/Water Tanker) | 13.87 | |
| POWER EQUIPMENT OPERATORS (Material Transfer Vehicle (Shuttle Buggy)) | 17.39 | |
| POWER EQUIPMENT OPERATORS (Loader Greater Than 2 Cubic Yards) | 16.01 | |
| POWER EQUIPMENT OPERATORS (Loader 2 Cubic Yards or Less) | 13.38 | |
| POWER EQUIPMENT OPERATORS (Grader/Blade Rough) | 13.07 | |

| | Rates | Fringes |
|---|---|---|
| POWER EQUIPMENT OPERATORS (Grader/Blade Fine) | 19.24 | |
| POWER EQUIPMENT OPERATORS (Excavator Rough) | 13.10 | |
| POWER EQUIPMENT OPERATORS (Excavator Fine) | 16.11 | |
| POWER EQUIPMENT OPERATORS (Drill Operator Structure) | 20.92 | |
| POWER EQUIPMENT OPERATORS (Drill Operator Rock) | 15.25 | |
| POWER EQUIPMENT OPERATORS (Crane Rough/All-Terrain) | 21.25 | |
| POWER EQUIPMENT OPERATORS (Crane Other) | 19.59 | |
| POWER EQUIPMENT OPERATORS (Crane Boom Trucks) | 14.44 | .53 |
| POWER EQUIPMENT OPERATORS (Concrete Grinder/Groover) | 24.66 | |
| POWER EQUIPMENT OPERATORS (Bulldozer Rough) | 13.89 | |
| POWER EQUIPMENT OPERATORS (Bulldozer Fine) | 16.20 | |
| POWER EQUIPMENT OPERATORS (Asphalt Broom Tractor) | 11.00 | |
| PAINTER (Bridge) | 19.62 | |
| LABORER (Traffic Signal/Lighting Installer) | 15.85 | |
| LABORER (Pipelayer) | 12.22 | |
| LABORER (Guardrail/Fence Installer) | 13.43 | |
| LABORER (Common or General) | 10.68 | |
| LABORER (Cement Mason/Concrete Finisher Tender) | 12.26 | |
| LABORER (Carpenter Tender) | 10.00 | |
| LABORER (Asphalt Screed/Jackman) | 15.22 | |
| LABORER (Asphalt Raker and Spreader) | 12.23 | |
| IRONWORKER | 14.53 | |
| ELECTRICIAN (Telecommunications Technician) | 15.13 | |
| ELECTRICIAN (Electrician) | 19.19 | 2.39 |
| CEMENT MASON/CONCRETE FINISHER | 14.10 | |
| CARPENTER | 12.54 | |
| BLASTER | 21.83 | |

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 $13.65 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract from May 11, 2026, through December 31, 2026. 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

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## PROJECT SPECIAL PROVISIONS

## GEOTECHNICAL


| | |
|---|---|
| SOIL NAIL RETAINING WALLS (SPECIAL) | GT-1.1 - GT-1.12 |
| MICROPILE GRADE BEAM (SPECIAL) | GT-2.1 - GT-2.9 |
| ROCK EMBANKMENTS (SPECIAL) | GT-3.1 - GT-3.2 |
| STANDARD SHORING (1-16-24) | GT-4.1 - GT-4.4 |
| WIRE FORM EMBANKMENT (SPECIAL) | GT-5.1 - GT-5.2 |
| RETAINING WALLS (SPECIAL) | GT-6.1 - GT-6.22 |

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## SOIL NAIL RETAINING WALLS (SPECIAL)

### 1.0 GENERAL

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

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

### 2.0 MATERIALS

Refer to the *Standard Specifications*.

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

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

Provide Type 6 material certifications for retaining wall materials.

Provide Type 5 grout for soil nails.

A. Temporary Wall

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

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

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strength.

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

B. Soil Nails

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

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

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

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

## 3.0 PRECONSTRUCTION REQUIREMENTS

A. Temporary Walls Designs

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

B. Soil Nail Wall Designs

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

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

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

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

Design soil nails that meet the following unless otherwise approved:

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

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

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

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

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

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

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

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

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

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

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

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

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

C. Soil Nail Wall Construction Plan

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

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

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

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

D. Preconstruction Meeting

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

## 4.0 CONSTRUCTION METHODS

A. Temporary Wall

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

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B. Soil Nail Wall

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

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

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

Install temporary walls to support construction equipment.

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

1. Excavation

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

a. Heights not to exceed vertical nail spacing,

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

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

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

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

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

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

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

C. Soil Nails

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

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

1. Drilling

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

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

2. Steel Bars

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

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

3. Grouting

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

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

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

4. Nail Heads

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

D. Wall Drainage Systems

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

E. Shotcrete

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

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

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

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

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

F. Leveling Pads and Concrete Facing

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

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

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

G. Construction Records

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

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

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

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

## 5.0 NAIL TESTING

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

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

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

A. Test Equipment

Use the following equipment to test nails:

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

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

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

B. Test Nails

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

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

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

C. Nail Tests

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

D. Test Nail Acceptance

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

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

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

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

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

## 6.0 MEASUREMENT AND PAYMENT

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

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

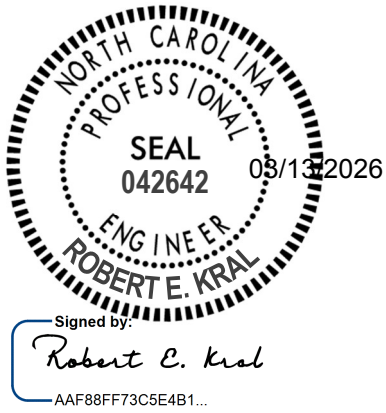
The contract unit price for *Soil Nail Retaining Walls* will be full compensation for providing designs, submittals, labor, tools, equipment and soil nail wall materials, excavating, hauling and removing excavated materials, installing soil nails, grouting, shotcreting and supplying wall drainage systems,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

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

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

Payment will be made under:

| **Pay Item** | **Pay Unit** |
|---|---|
| Soil Nail Retaining Wall | Square Feet |



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## MICROPILE GRADE BEAM (SPECIAL)

### 1.0 GENERAL

This project includes construction of an array of micropiles connected to a grade beam, 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, knee wall, footing, or leveling course.

### 2.0 MATERIALS

Refer to the *Standard Specifications*.

| Item | Section |
|---|---|
| Reinforcing Steel | 1070 |
| Portland Cement Concrete, Class A | 1000 |

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.

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Use Class A concrete for cast-in-place concrete footing that meets Article 450-2 of the *Standard Specifications*.

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

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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

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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 concrete in accordance with Article 420-7 of the *Standard Specifications*, except for the following. The concrete 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 concrete 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).

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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 cast-in-place concrete 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.

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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

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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

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determine if results are satisfactory within 7 days of receiving the report.

## 6.0 MICROPILE ACCEPTANCE

Micropile acceptance is based in part on the following criteria.

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

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

## 7.0 MEASUREMENT AND PAYMENT

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

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

The contract unit prices for *Micropile Grade Beam* will also include all costs associated with demonstration micropiles, micropile verification tests, and micropile proof tests. No separate payment will be made for these items. Grout up to twice the theoretical drill hole volume is included in the retaining wall unit prices. Grout in excess of this volume will be paid as extra work in accordance with Article 104-7 of the *Standard Specifications*. No additional compensation will be made for unacceptable demonstration micropiles, repeated load tests, overexcavation, unstable excavations, additional concrete, or drilling through harder than anticipated materials. All such costs are considered incidental to the work and are fully

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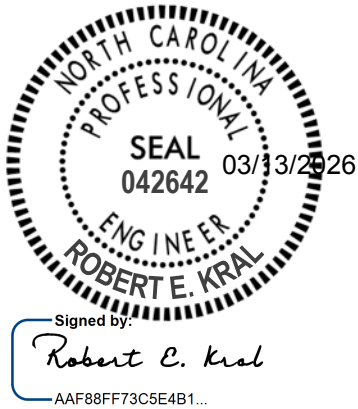
covered by the unit price for *Micropile Grade Beam*.

Payment will be made under:

| **Pay Item** | **Pay Unit** |
|---|---|
| Micropile Grade Beam | Linear Feet |



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**ROCK EMBANKMENTS** **(SPECIAL)**

**Description**

Construct rock embankments in accordance with the contract. Rock embankments are required to construct embankments in water at locations shown in the plans and as directed.

**Materials**

Refer to Division 10 of the *Standard Specifications*.

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

Provide Class VII select material for rock embankments. Use 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*. 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 Class A and B rip rap and No. 57 stone to top 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.

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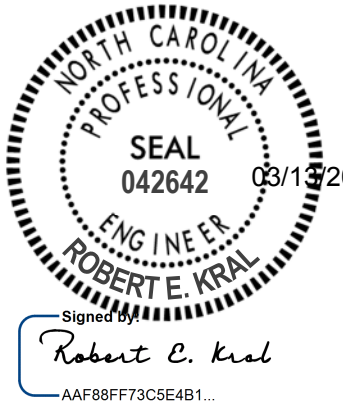
Payment will be made under:

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

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

### Description

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

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

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

### Materials

Refer to the *Standard Specifications*.

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

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

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

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**(A) Shoring Backfill**

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

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

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

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

**(B) Standard Temporary Walls**

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

(1) Geotextile Reinforcement

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

(2) Geogrid Reinforcement

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

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

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

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**Preconstruction Requirements**

**(A) Concrete Barrier**

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

**(B) Temporary Guardrail**

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

**(C) Standard Shoring Selection Forms**

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

**Construction Methods**

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

**(A) Standard Temporary Shoring Installation**

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

**(B) Standard Temporary Walls Installation**

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

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

**Measurement and Payment**

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

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**WIRE FORM EMBANKMENT:** **(SPECIAL)**

**Description**

Wire form embankment includes constructing a reinforced slope by placing wire basket forms, geotextiles and backfill materials as shown in the plans. The embankment is protected against scour by installing shot rock plating

Construct the embankment based on actual elevations and dimensions in accordance with the contract and details.

**Materials**

Refer to the *Standard Specifications*.

| Item | Section |
|---|---|
| Geotextile for Wire Form Embankment, Type 5a | 1056 |
| Welded Wire Reinforcement | 1070-3 |
| Select Material | 1016 |
| Borrow Materials | 1018 |

For wire basket forms, use welded wire reinforcement for welded wire facing, struts and wires with the dimensions and minimum wire sizes shown in the details. Geotextile for Wire Form Embankment shall meet the requirements of Type 5a geotextile and placed according to the plans.

Use a mix of shot rock approximating Class VII Select Material with the following gradation modification 60% measuring 3-4 ft along one axis, 30% measuring 6”-19” along one axis, and 10% measuring 2”-6” along one axis to construct the Shot Rock Plating.

Borrow for Wire Form Embankment shall consist of approved embankment backfill material incorporated within the wire form embankment, including suitable on-site excavated material reused in the work and/or suitable borrow material furnished in accordance with Section 1018.

**Preconstruction Meeting**

Prior to ordering materials or beginning construction, the Resident Engineer will schedule a meeting with the Contractor, Installer, Resident Engineer, and Geotechnical Operations to review the site, embankment details and answer any questions.

**Construction Methods**

Begin construction at the farthest downstream point and work up stream. Work is to be continuous along the stream bank without skipping areas. Establish the proposed toe of shot rock plating along the stream and then identify where the toe of the shot rock plating will be embedded. Excavate along the proposed toe of the embankment stabilization as shown on the plans to embed shot rock plating to the limits as shown on plans. Install the geotextile into the bottom of the excavation and leave a tail of geotextile for the lowest bench of wire forms, as shown. Place shot rock plating on the geotextile below the stream channel.

Excavate as required for the wire form embankment. Store excavated materials for reuse. Limit the maximum particle size to 6 inches for use of on-site materials. Install the welded wire baskets and geotextile as shown in the plans. Place the borrow and excavated materials in 8-10 inch lifts. Compact the backfill with an 8 to 10 ton roller, except use a plate compactor within 4 feet of the wire form face. Make minimum of 4 passes in each direction during compaction. Due to the variability in the backfill materials some larger rocks may require additional finer fill materials to

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be placed around them to allow adequate compaction. Any rocks or other, inorganic, solid objects that are larger than 6” shall be set aside and incorporated into the rock plating.

Bury geotextiles along the top of the slopes and embed geotextiles at toe of slopes as shown on the plans. All geotextiles shall be continuous down slopes. However, if the roll length is too short, overlap the ends of geotextiles at least 5 ft with the upper layer over the lower as shown on the plans.

Overlap adjacent geotextiles along slopes at least 18” as shown on the plans. The underlying geotextile must be located downstream of the overlying geotextile to prevent failure during high flow. Use wire staples as needed to hold geotextiles in place until covered. Do not displace or damage geotextiles while placing shot rock plating.

**Measurement and Payment**

*Wire Form Embankments* will be paid for using the contract pay items and units shown below for items that have been incorporated into the completed and accepted work.

*Wire Basket Forms* will be measured and paid based upon the actual number of wire basket forms incorporated into the completed and accepted work.

*Geotextile for Wire Form Embankment, Type 5a* will be measured and paid as the total square yards of geotextile incorporated into the completed and accepted work. No measurement will be made for overlapping geotextiles. The contract unit price will be full compensation for providing, transporting and installing geotextiles.

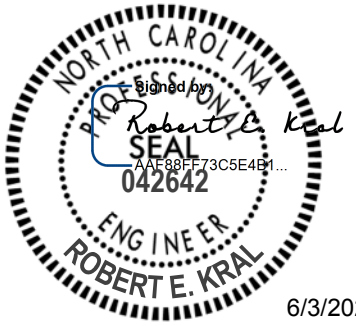
*Borrow for Wire Form Embankment* will be measured and paid as the actual number of cubic yards of approved materials incorporated into the completed and accepted work.

*Shot Rock Plating* will be measured and paid in tons of shot rock incorporated into the completed and accepted work. The contract unit price for *Shot Rock Plating* does not include compensation for undercutting for embedded rock plating. This excavation will be considered incidental to the contract.

The contract unit price for *Wire Form Embankments* will be full compensation for providing materials, placing geotextiles, installing wire staples, backfilling and compacting, and placing shot rock plating and supplying all labor, tools, equipment and incidentals necessary for construction. Hauling and removing excavated materials will be incidental. No payment will be made for embankment not required by the Engineer. No value engineering proposals will be accepted.

Payment will be made under:

| **Pay Item** | **Pay Unit** |
|---|---|
| Wire Basket Forms | Each |
| Geotextile for Wire Form Embankment, Type 5a | Square Yard |
| Borrow for Wire Form Embankment | Cubic Yard |
| Shot Rock Plating | Ton |



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**RETAINING WALLS** **(SPECIAL)**

## 1.0 GENERAL

**This special provision applies only to Retaining Walls, Site #944, Site #943, Site #942, Site #939, Site #938, Site #937, and Site #936 identified in the contract documents and shown in the plans. Refer to the plans and other applicable special provisions for work at other sites within the contract.**

Design and construct retaining walls consisting of regularly spaced soil nails connected to a reinforced shotcrete facing or other accepted retaining wall system in accordance with the contract documents. Soil nails shall consist of steel or hollow bars grouted within drilled holes inclined below horizontal. Design and construct the retaining walls, temporary MSE walls, micropile-supported grade beams, rock embankments, and partially grouted rock fill in accordance with the contract documents, accepted submittals, and actual field conditions.

Use a prequalified Anchored Wall Contractor for all soil nail wall work. Temporary MSE walls shall consist of geotextile reinforcement wrapped behind welded wire facing and shall support construction activities associated with the permanent wall installation. Temporary MSE walls may be required to facilitate construction of permanent soil nail walls.

Construct rock embankments and partially grouted rock fill at the locations shown in the plans. Partially grouted rock fill shall be used to improve erosion resistance, scour resistance, and long-term durability adjacent to streams and rivers.

## 2.0 MATERIALS

Refer to the *Standard Specifications*.

| Item | Section |
|---|---|
| Portland Cement Concrete, Class A | 1000 |
| Shotcrete | 1002 |
| Grout | 1003 |
| Select Materials | 1016 |
| Borrow Materials | 1018 |
| Portland Cement | 1024-1 |
| Joint Materials | 1028 |
| Masonry | 1040 |
| Rip Rap Materials | 1042 |
| Geotextile for Temporary Wall | 1056 |
| Geotextile for Rock Embankments, Type 2 | 1056 |
| Welded Wire Reinforcement | 1070 |
| Reinforcing Steel | 1070 |
| Steel Plates | 1072-2 |
| Welded Stud Shear Connectors | 1072-6 |

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

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Provide Type 6 material certifications for retaining wall materials.

Provide Type 5 grout for soil nails.

A. Temporary Wall

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

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

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

B. Soil Nails

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

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

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

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

C. Micropile Supported Grade Beam and Knee Wall

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.*

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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 Class A concrete for cast-in-place concrete footings and grade beams that meets Article 450-2 of the *Standard Specifications*.

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.

D. Rock Embankments

Provide Class VII select material for rock embankments. Use 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.

## 3.0 PRECONSTRUCTION REQUIREMENTS

A. Temporary Wall Designs

Design temporary walls to support soil nail wall construction equipment and other construction loading in accordance with the plans and Article 11.10 of the AASHTO LRFD Bridge Design Specifications. Use geotextile properties approved by the

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Department or default values in accordance with the AASHTO LRFD specifications. Use geosynthetic properties for the direction reinforcement will be installed, a 3-year design life and the shoring backfill type in the reinforced zone. Submit PDF working drawings and design calculations for temporary walls with the soil nail wall submittal.

B. Soil Nail Wall Designs

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

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

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

Design soil nails that meet the following unless otherwise approved:

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

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

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

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

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pads. Provide aggregate shoulder drains and outlet components in accordance with Roadway Standard Drawing No. 816.02.

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

Design shotcrete and concrete facing in accordance with the plans and Article 11.12.6.2 of the *AASHTO LRFD Bridge Design Specifications*. Use shotcrete and concrete facing with the dimensions shown in the plans and attach facing to nail heads with welded stud shear connectors. When concrete barrier rail is required above soil nail walls, use concrete barrier rail with moment slab as shown in the plans.

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

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

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

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

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

When designing soil nail walls with computer software other than Snail, use bi-linear (or tri-linear, as applicable) search surfaces intended to reproduce Snail results. Factors of

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safety and $T_{maxsn}$ and $L_P$ values are acceptable if they are within 5% of the factors of safety and $T_{maxsn}$ and $L_P$ values calculated by the Engineer using the computer software Slide2 manufactured by Rocscience, Inc.

C. Soil Nail Wall Construction Plan

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

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

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

D. Micropile Supported Grade Beam and Knee Wall Design

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. Submit at least 30 days before starting micropile construction.

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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 Shored 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.

E. Micropile Installation and Testing Plan

Submit at least 30 days before starting micropile construction. Do not begin micropile construction until the installation and testing plan is accepted.

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;

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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.

F. Alternative Retaining Walls Design

At the Contractor's option, alternate retaining wall systems may be submitted for consideration in lieu of the retaining wall systems shown in the plans. Alternate retaining wall systems shall be designed by a Design Engineer licensed in the State of North Carolina and experienced in the design of retaining wall systems in similar subsurface conditions.

Alternate retaining wall systems shall be designed to satisfy the same loading conditions, geometry constraints, performance criteria, durability requirements, and design life requirements shown in the plans and specified herein. The proposed system shall not adversely impact adjacent structures, utilities, drainage features, streams, rivers, wetlands, and other jurisdictional features, permitted impact limits, right-of-way, constructability, maintenance of traffic, erosion control measures, or project phasing. Alternate retaining wall systems shall conform to the limits and conditions of permits included in the contract documents unless otherwise approved by the Engineer.

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Submit complete working drawings, design calculations, construction procedures, and applicable material specifications sealed by the Design Engineer for review and acceptance in accordance with Article 105-2 of the Standard Specifications. Include global stability, internal stability, external stability, settlement, drainage, and structural evaluations, as applicable to the proposed wall system.

Acceptance of an alternate retaining wall system does not relieve the Contractor of responsibility for the adequacy, performance, constructability, or long-term stability of the proposed system.

No additional compensation or extension of contract time will be allowed for alternate retaining wall systems submitted by the Contractor.

G. Preconstruction Meeting

Hold a preconstruction meeting prior to beginning retaining wall construction to discuss construction procedures, inspection requirements, monitoring, testing, sequencing, and accepted submittals. If required submittals have not been accepted at the time of the meeting, additional meetings may be required.

The micropile preconstruction meeting may be combined with the retaining wall preconstruction meeting provided all required personnel are present and all applicable micropile installation, monitoring, and testing requirements are discussed. Schedule the meeting after the Micropile Subcontractor has mobilized to the site.

Attendees for the preconstruction meeting shall include the Resident or Bridge Maintenance Engineer, Bridge Construction Engineer, Geotechnical Operations Engineer, Contractor, applicable retaining wall subcontractor superintendent, project manager, Design Engineer for the retaining wall system, and other personnel requested by the Engineer.

## 4.0 CONSTRUCTION METHODS

A. Temporary Wall

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

B. Soil Nail Wall

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

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

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

Install temporary walls to support construction equipment.

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

1. Excavation

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

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

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

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

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

   Do not excavate the next lift until nail installations and testing and shotcrete application for the current lift are accepted and grout and shotcrete for the current lift have cured at least 3 days and 1 day, respectively.

C. Soil Nails

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

Control drilling and grouting to prevent excessive ground movements, damaging structures and pavements or fracturing rock and soil formations. If ground heave or subsidence occurs, suspend soil nail wall construction and take corrective action to

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minimize movement. If property damage occurs, make repairs with an approved method and a revised soil nail wall design or construction plan may be required.

1. Drilling

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

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

2. Steel Bars

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

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

3. Grouting

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

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

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

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4. Nail Heads

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

D. Wall Drainage Systems

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

E. Shotcrete

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

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

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

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

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F. Leveling Pads and Shotcrete Facing

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

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

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

G. Micropiles

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 concrete in accordance with Article 420-7 of the Standard Specifications, except for the following. The concrete 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 concrete 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.

1. 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.

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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.

2. 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

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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.

H. Micropile Footing

Construct reinforced cast-in-place concrete footings and grade beams in accordance with Section 420 of the *Standard Specifications* and the accepted submittals. For surfaces exposed to weather, finish surfaces with a crown or slope to freely shed water.

I. Rock Embankments

Construct rock embankments in accordance with the slopes, dimensions and elevations shown in the plans and Section 235 of the Standard Specifications. 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 Class A and B rip rap and No. 57 stone to top 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.

J. Partially Grouted Rock Fill

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

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

When grout will be delivered into the rock fill by pumping, provide a minimum 3 cubic foot container on site to calibrate grout delivery rates prior to beginning grouting

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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.

K. Construction Records

1. Soil Nail Wall

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.

2. Micropile Supported Grade Beam and Knee Wall

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

a. Names of Micropile Subcontractor, Superintendent, Drill Rig Operator, Project Manager and Design Engineer;

b. Site description, county, Department's contract, TIP and WBS element number;

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c. Micropile location and identifier and required resistance;

d. Micropile diameters, length and tip elevation and top of micropile and ground surface elevations;

e. Reinforcement and casing types, grades or yield strength, sizes and elevations;

f. Date and time drilling begins and ends, reinforcement is placed, grout is mixed and arrives on-site and grout placement begins and ends;

g. Grout level, pressure, volume, temperature, flow and density records;

h. Ground and surface water conditions and elevations;

i. Weather conditions including air temperature at time of grout placement; and

j. 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.

L. Alternative Retaining Walls

Construction methods for alternate retaining wall systems shall be in accordance with the accepted submittals and applicable portions of the *Standard Specifications*.

## 5.0 TESTING

A. Soil Nails

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

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

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

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1. Test Equipment

   Use the following equipment to test nails:

   d. Two dial gauges with rigid supports,

   e. Hydraulic jack and pressure gauge,

   f. Jacking block or reaction frame and

   g. 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.

2. 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.

3. Nail Tests

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

4. Test Nail Acceptance

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

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

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

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

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

B. Micropiles

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

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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.

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1. Micropile Acceptance

   Micropile acceptance is based in part on the following criteria.

   a. 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).

   b. 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.

   c. 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.

   d. 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.

## 6.0 MEASUREMENT AND PAYMENT

*Retaining Walls* will be measured and paid as a lump sum for each site. The contract lump sum price shall include full compensation for all labor, materials, tools, equipment, design, submittals, excavation, hauling, backfill, placement and compaction of backfill, temporary shoring and support of excavation, installation, grouting, shotcreting, testing, monitoring, drainage systems, leveling pads, concrete facing, brick veneer (if required), temporary walls, micropile-supported grade beams, rock embankments, partially grouted rock fill, and all incidentals necessary to complete the work in accordance with the plans and specifications.

The lump sum price shall also include all costs associated with soil nail verification and proof testing, demonstration micropiles, micropile verification and proof testing, monitoring and recording, drilling through any material encountered, furnishing and installing reinforcement and casings, footing construction, geotextiles, rip rap, grout placement, stream protection measures, and furnishing, hauling, placement, and compaction of any required off-site backfill material unless otherwise noted in the contract.

No additional payment will be made and no extension of contract time will be allowed for repairing property damage, overexcavation, unstable excavations, temporary shoring, unacceptable test nails or micropiles, repeated load tests, additional shotcrete or concrete facing thickness, drilling through harder than anticipated materials, groundwater control, backfill replacement, or grout quantities up to twice the theoretical drill hole volume. All such costs, including corrective measures, remediation, and incidental work necessary to

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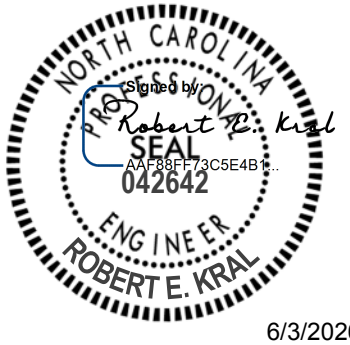
complete the retaining wall systems in accordance with the plans and specifications, shall be considered incidental to the contract lump sum price for Retaining Walls.

Items such as ditches, fences, handrails, barriers, and guardrails associated with the retaining walls will be paid for under their respective contract items.

Payment will be made under:

| **Pay Item** | **Pay Unit** |
|---|---|
| Retaining Walls, Site #944 | Lump Sum |
| Retaining Walls, Site #943 | Lump Sum |
| Retaining Walls, Site #942 | Lump Sum |
| Retaining Walls, Site #939 | Lump Sum |
| Retaining Walls, Site #938 | Lump Sum |
| Retaining Walls, Site #937 | Lump Sum |
| Retaining Walls, Site #936 | Lump Sum |




6/3/2026

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# SN-1

W03293 Polk County
11/20/2025

## Signing and Delineation
## Project Special Provisions
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12/2/2025

Docusign Envelope ID: 885320A1-B6ED-4729-A8B5-8379CD2A0588

# SN-2

W03293 Polk County
11/20/2025

**SNOWPLOWABLE DELINEATION:**
(10-15-24) 1253 SP12 R53

## Description

Furnish, install and maintain **Polycarbonate H-shaped Markers** for snowplowable delineation.

## Materials

Refer to Division 10 of the *Standard Specifications*.

| Item | Section |
|---|---|
| Epoxy | 1081 |
| Pavement Markings | 1087 |
| Snowplowable Pavement Markers | 1086-3 |

Any snowplowable pavement delineation shall conform to the applicable requirements of Sections 1086, 1087, and 1081 of the *Standards and Specifications.* Use snowplowable delineation markers and markings listed on the NCDOT APL. Any treatment that requires pavement cutting or milling shall be installed within 7 calendar days of the pavement cutting or milling operation.

## Construction Methods

### (A) General

For any snowplowable delineation, prior to installation, by brushing, blow cleaning, vacuuming or other suitable means, ensure that all materials and the pavement surface are free of dirt, grease, dust, oil, moisture, mud, grass, or any other material that would prevent adhesion to the pavement by brushing blow cleaning, or vacuuming. If required, apply a primer per manufactures recommendations to pavement surfaces before applying pavement marking material.

Install snowplowable delineation per manufacturers specifications every 80 feet. Make sure pavement markers are oriented to traffic correctly and pavement markings are applied in a uniform thickness. Do not apply markings over longitudinal joints. Protect the pavement markings until they are tack free. Apply applicable Sections 1205 and 1250 of the *Standards Specifications*.

If damage occurs during installation the effected treatments shall be corrected or replaced. This work shall be considered incidental to the installation of the marking or marker.

### (B) Polycarbonate H-shaped Markers

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

Install polycarbonate H-shaped markers castings into slots sawcut into the pavement. Make slots in the pavement to exactly duplicate the shape of the casting of the polycarbonate H-shaped markers.

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

Protect the polycarbonate H-shaped markers until the epoxy has initially cured and is track free.

**(C) Reflector Replacement**

In the event that a reflector is damaged, replace the damaged reflector by using adhesives and methods recommended by the manufacturer of the markers and approved by the Engineer. This work is considered incidental if damage occurs during the initial installation of the marker housings and maintenance of initial polycarbonate H-shaped markers or inlaid cradle markers specified in this section.

If during reflector replacement it is discovered that the housing is missing or broken this will be paid as *Polycarbonate H-shaped Markers.* Missing housings shall be replaced. Broken housings shall be removed and replaced. In both cases the slot for the housings shall be properly prepared prior to installing the new housing; patch the existing marker slots as directed by the Engineer and install the new marker approximately one foot before or after the patch. Removal of broken housings and preparation of slots will be considered incidental to the work of replacing housings.

**Maintenance**

Maintain all installed snowplowable delineation before acceptance by the Engineer.

**Measurement and Payment**

*Polycarbonate H-shaped Markers* will be measured and paid as the actual number of polycarbonate H-shaped markers satisfactorily placed and accepted by the Engineer.

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# SN-4

W03293 Polk County
11/20/2025

*Replace Snowplowable Pavement Marker Reflector* will be measured and paid in accordance with Article 1253-5.

Payment will be made under:

| **Pay Item** | **Pay Unit** |
|---|---|
| Polycarbonate H-shaped Markers | Each |

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# TC-1

W03293 Polk County
11/19/2025

## WORK ZONE TRAFFIC CONTROL
## Project Special Provisions
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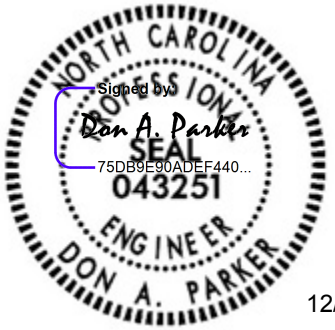


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# TC-2

W03293 Polk County
11/19/2025

**TEMPORARY PORTABLE TRAFFIC SIGNAL SYSTEM:**
(07-14-15)

**Description**

Furnish, install, place in operation, repair, maintain, relocate, and remove temporary portable traffic signal system for traffic maintenance during construction along US 176. The temporary portable traffic signals will require a system that is coordinated to maintain safe and efficient traffic operations during construction operations. The Temporary Portable Traffic Signal System shall be designed such that all devices operate and communicate as a system.

A separate Temporary Portable Traffic Signal System is required for sites 314, 317, 319, 320 and 944.

At sites 314, 317, 319, and 320, the required system shall contain two trailer mounted portable traffic signal units along US 176.

At site 944, the system shall contain two trailer mounted Portable Traffic Signals units along US 176 that communicate and operate with the four Driveway Units.

**Materials**

Provide:

At sites 314, 317, 319, 320, and 944, provide (2) Portable Traffic Signals (PTS). Each shall be self-contained trailer mounted units with two 12” signal heads per trailer. One signal head shall be mounted on an overhead mast arm capable of extending over the travel lane. The other signal shall be mounted on a vertical upright.

At site 944, also provide four (4) Driveway Signals (DS) portable trailer mount driveway signal system, each with 1 signal head per trailer per the specification contained herein.

All signal units must be on the NCDOT Approved Products List.

**Portable Trailer Mount Driveway Signal System (DS)**

**General**

The Portable Trailer Mount Driveway Signal System (DS) shall consist of a signal trailer with 1 – 12” retractable signal head per trailer. The signal head shall be mounted in the horizontal position.

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# TC-3

W03293 Polk County
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## (DS) Trailer Requirements

Each (DS) trailer shall be equipped with 8-deep cycle batteries and a 110-volt charger in a lockable weather proof compartment. Batteries shall be capable of a minimum of 21 days of continuous operation at temperatures at or above (50º F) without charging. The trailer shall also be equipped with a solar charging system to facilitate continuous operation for a minimum of 45 days based on temperatures of (50° F) or greater. The (DS) Trailer shall be painted highway safety orange. Each Trailer shall be clearly identified with the manufacturer, serial number and emergency phone number.

## Signal Head / Display Requirements

The (DS) Trailer shall be equipped with one signal head containing one 12" diameter, Red circular, LED indication, with two 8-inch diameter Yellow Arrow LED indications mounted on either side of the red circular indication. Signal Heads shall be mounted on a retractable vertical upright and equipped with a manual hand crank.

LED indications shall conform to "Vehicle Traffic Control Signal Heads." Signal heads shall be equipped with visors which extend beyond the signal head a minimum of 8 inches. The signal heads shall have the ability to accommodate back plates. The signal head shall be mounted to a vertical upright at a minimum height of 9' measured from the bottom of the green indication to the road surface.

## Signage for Driveway Signal Unit

The trailer shall be able to accommodate a minimum of two rigid signs, either 24" x 30" or 30" x 30". The signs shall display, "No Turn On Red," and "Turn Only In Direction Of Arrow." Other sign legends may be used, as directed by the engineer.

## Communication Requirements

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

## Fault Mode Requirements

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# TC-4



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

**Remote Monitoring System**

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

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

**Implementation**

Prior to installation, a public notification must be provided to all dwellings that will be utilizing the DS. This can be done with a “flyer, mailer, or door hanger” as described in **Attachment 1**.

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

**Measurement and Payment**

For Site 314, the Temporary Portable Traffic Signal System will be measured as the (2) trailer mounted units (PTS) furnished, installed, operated, removed and accepted.

For Site 317, the Temporary Portable Traffic Signal System will be measured as the (2) trailer mounted units (PTS) furnished, installed, operated, removed, and accepted.

For Site 319, the Temporary Portable Traffic Signal System will be measured as the (2) trailer mounted units (PTS) furnished, installed, operated, removed, and accepted.

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For Site 320, the Temporary Portable Traffic Signal System will be measured as the (2) trailer mounted units (PTS) furnished, installed, operated, removed, and accepted.

For site 944, the Temporary Portable Traffic Signal System will be measured as the two (2) trailer mounted units (PTS) and the four (4) driveway units (DS) furnished, installed, operated, removed and accepted.

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

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

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

| **Pay Item** | **Pay Unit** |
|---|---|
| Temporary Portable Traffic Signal System | Each |

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# TC-6

W03293 Polk County
11/19/2025

**Attachment 1 (Applies to Site 944 only):**
**Public Notice**

Soon, the traffic pattern on US 176 will change from a Two Lane Road, to a One Lane Road to accommodate slope repair and retaining wall construction. Temporary traffic signals will be placed on either end of the "One Lane Rd" traffic pattern. To allow you safe access to US 176, a temporary signal device will be placed within sight of the end of your road or driveway. This signal will indicate which direction the traffic is flowing with a flashing yellow arrow. The direction the arrow is flashing is the direction you may safely turn on to US 176. The signal will also include a Red Light, which, like any Red Light, indicates that you must STOP, until there is an arrow flashing in the direction you wish to turn.

Thank you for your patience while the construction in your area is underway. Please enter the work zone safely and stay alert to the signs and signals as you proceed.

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# TC-7

W03293
11/19/2025

Polk County

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PROJECT SPECIAL PROVISIONS
Utilities by Others

TELICS

1598 Westbrook Plaza Dr, Suite 202
Winston-Salem, NC 27103

**General:**

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

A) Duke Energy – Power (Distribution)
B) MCNC – Communications
C) Duke Fiber – Communications
D) River Street – 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, or the Contractor. The contractor will work around utilities to remain in place. All utilities are shown on the plans from the best available information.

A mandatory Utility Kickoff Preconstruction meeting with the roadway contractor, select utility owners, and NCDOT will be held for Contractor project clarity.

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

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PROJECT SPECIAL PROVISIONS
Utilities by Others

TELICS

1598 Westbrook Plaza Dr, Suite 202
Winston-Salem, NC 27103

**Utilities Requiring Adjustments:**

Utility relocations are shown on the Utilities by Others Plans.

A) Duke Energy – Distribution Power

1) Duke Energy's relocation work is pending. Duke's poles and OH facilities are reflected within the 300 Site Series on UO-5 through UO-7. Duke's poles and OH facilities are reflected within the 900 Site Series on UO-8 only.
2) Duke Energy's proposed relocation consists of new distribution poles and OH facilities. Anticipated start around August 10, 2026, and completed by September 11, 2026.
3) Duke Energy has no anticipated UG relocation within the project corridor.
4) Contact person for Duke Energy is Bob Mabry (828) 698-2055, bob.mabry@duke-energy.com.

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PROJECT SPECIAL PROVISIONS
Utilities by Others

TELICS

1598 Westbrook Plaza Dr, Suite 202
Winston-Salem, NC 27103

B) MCNC – Communications

1) MCNC's proposed OH relocation work has already commenced. MCNC's poles and OH facilities are reflected within the 900 Site Series only on UO-9 through UO-13. MCNC poles have been set and temporary conduit hung where proposed permanent conduit runs will be placed by the roadway contractor in MCNC's proposed UG relocation.
2) MCNC's proposed UG relocation has already commenced and will consist of a temporary build out through temporary 2" proposed conduit already placed by MCNC. Full coordination with the roadway contractor in the field will be required. MCNC's proposed UG relocation is reflected on UO-9 through UO-11.
3) MCNC will provide proposed 6" conduits in 20' sticks with glue in (2) separate locations through the project corridor for the roadway contractor to install per "Detail of Utility Conduit Installation" on sheet UO-3. MCNC will provide Mule Tape or equivalent. (18k minimal strength)
4) Periodic inspections shall be performed during installation and a final acceptance test implemented by pulling a mandrel through each conduit twice, once the entire run at each location is installed.
5) The first pull will establish path consistency through the proposed conduits. The second pull back will place Mule Tape of equivalent (18k minimal strength) to be left in place for future use. Full coordination with the roadway contractor in the field will be required.
6) The permanent build back will commence upon roadway contractor placing (2) 6" conduits in (2) separate locations through the project corridor.
7) MCNC will provide and place proposed handholes at ends of 6" conduits placed by the roadway contractor. Full coordination with the roadway contractor in the field will be required.
8) MCNC will establish riser specification at proposed MCNC poles where applicable for permanent build back.
9) Contact person for MCNC is Daniel Honeycutt (704) 301-9421, dhoneycutt@mcnc.com.

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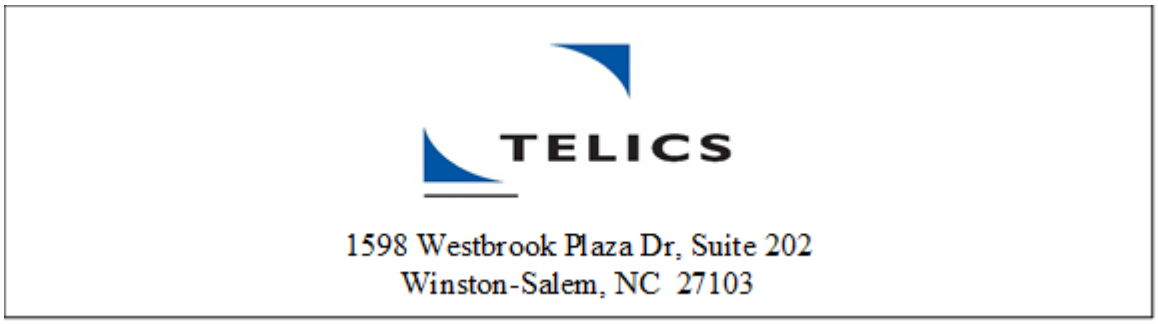
PROJECT SPECIAL PROVISIONS
Utilities by Others




C) Duke Fiber – Communications

1) Duke Fiber's relocation work is pending. All Duke Fiber's proposed facilities will be UG placement. Duke Fiber's proposed UG relocation will consist of relocation with the 300 Series Sites and 900 Series Sites.
2) Duke Fiber's proposed UG relocation within Site Series 300 is reflected at site 317/318 on UO-5. Duke Fiber to place (2) handholes and bore new cable.
3) Duke Fiber's proposed UG relocation within Site Series 900 will be coincide with MCNC's proposed relocation. Duke Fiber's proposed UG relocation within the 900 Series Sites is reflected on UO-9 through UO-11.
4) Duke Fiber's proposed UG relocation will consist of a temporary build out through temporary 2" proposed conduit already placed by MCNC.
5) Duke Fiber's proposed permanent UG build back will commence upon roadway contractor placing (2) 6" conduits in (2) separate locations through the project corridor.
6) Duke Fiber will provide and place proposed handholes at ends of 6" conduits placed by the roadway contractor. Full coordination with the roadway contractor in the field will be required.
7) Duke Fiber will establish riser specification at proposed MCNC poles where applicable for permanent build back.
8) Contact person for Duke Fiber is Lucas Sipe (704) 517-1563, lucas.sipe@duke-energy.com.

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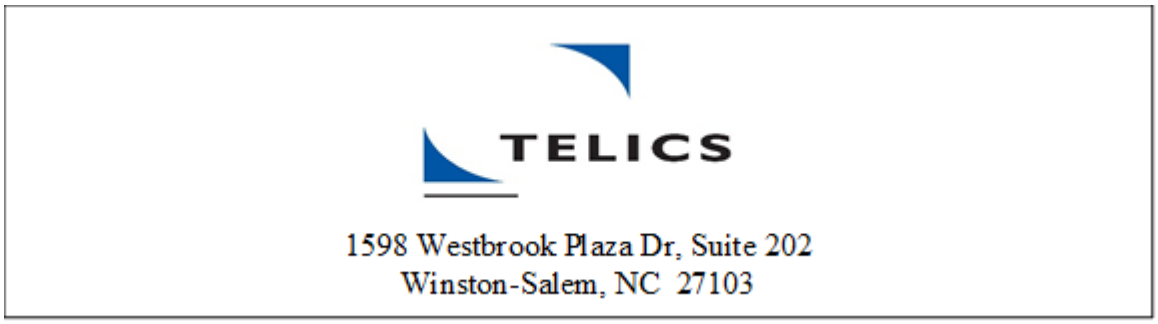
PROJECT SPECIAL PROVISIONS
Utilities by Others




D) Riverstreet – Communications

1) Riverstreet's relocation work is pending. All Riverstreet's proposed facilities will be UG placement. Riverstreet's proposed UG relocation will consist of relocation with the 300 Series Sites only.
2) Riverstreet's first proposed UG relocation within Site Series 300 is reflected at site 316 on UO-4. Riverstreet will expose and adjust existing facilities as roadway contractor is present to place the proposed guardrail. Full coordination with the roadway contractor in the field will be required.
3) Riverstreet's final proposed UG relocation within Site Series 300 is reflected at site 317/318 on UO-5. Riverstreet to place (1) handhole and bore new cable.
4) Riverstreet's anticipated start around July 20, 2026, and completed by July 31, 2026.
5) Contact person for Riverstreet is Jacob Smith (336) 973-7100 – Ext. 1403, jacobsmith@myriverstreet.net.

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**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 |

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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 |

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| | | | |
|---|---|---|---|
| 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 | |

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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.

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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.

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## 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

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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.

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(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

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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.

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**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*.

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**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.

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**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.

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(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 |

**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

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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.

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**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.

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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.

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**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 |

Docusign Envelope ID: 70D55B70-5917-4427-988B-A4212989B8AF



**LITTER REMOVAL (MOWING AREAS ONLY):**
(07-19-22) (Rev 8-25-25)

**Description**

This work consists of the pickup, removal, and disposal of litter from roadsides within the construction project prior to mowing operations.

**Construction Methods**

Provide labor, equipment and materials necessary for the pickup and removal of litter from non-construction sources and the disposal of same into state approved landfills. The Contractor shall abide by all ordinances, laws and regulations regarding disposal of litter and recycling of eligible materials. Wastes generated from construction activities shall be managed as provided elsewhere in the contract. Litter items may consist of any item not considered normal to the right-of-way, including but not limited to, varied sizes of bottles, cans, paper, tires, tire pieces, lumber, vehicle parts, building supplies, metals, household furnishings, cardboard, plastics, ladders, brush and other items not considered normal to the right of way. Litter removal shall be performed in designated areas within five days prior to any mowing operations and as directed. Designated areas shall include vegetated medians and shoulders within the project limits including all interchange ramps and other areas to be mown. Designated areas may be omitted for litter removal by the Engineer due to safety concerns.

The Contractor shall provide adequate personnel and materials to collect and remove litter. The Contractor shall be responsible for locating and utilizing approved local landfills and recycling facilities. Refer to Section 107-25 of the *Standard Specifications* for potential hazardous materials. All collected litter shall be containerized immediately and kept off the traveled portions of the roadway, shoulders, and rights-of-way (including paved shoulders). All collected litter that is small enough to be placed in a bag shall be bagged immediately. All collected litter that is too large for a bag shall be placed into a vehicle. Extended storage or stockpiling of collected litter and recyclables will not be permitted.

The Contractor's personnel shall dispose of any litter in a landfill approved by North Carolina Division of Waste Management. The Contractor will not be allowed to use NCDOT accounts at the landfills/recycling centers nor be allowed to dispose of the litter in NCDOT trash containers on any NCDOT property.

The Contractor shall report online the number of bags of litter and any recycling on the NCDOT Litter Management Website on the date of the pickup at the following website:

https://apps.ncdot.gov/LM

An access code ('Pickup Key') for the online reporting portal may be obtained via emailing the Roadside Environmental Unit Litter Management Section at ncdot.clr@ncdot.gov. The Contractor shall request access to the litter removal reporting website prior to starting initial litter collection operations.

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**Measurement and Payment**

The quantity of litter removal to be performed will be affected by the actual conditions that occur during construction of the project. The quantity of litter removal may be increased, decreased, or eliminated entirely as directed. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

*Manual Litter Removal* will be measured and paid as the actual number of man hours each worker spends picking up litter. Such price and payment will be full compensation for all litter removal work covered by *Litter Removal*, including, but not limited to, furnishing all materials, labor, equipment, transport, reporting, and incidentals necessary to accomplish the work.

*Litter Disposal* will be measured and paid for by the actual number of tons of litter collected and properly disposed of at a state approved landfill. Such price and payment will be full compensation for all fees, labor, transport, and incidentals necessary to dispose of collected litter associated with *Litter Removal*.

All traffic control necessary to provide a safe work area for *Litter Removal* shall be paid for as specified elsewhere in the contract.

Payment will be made under:

| Pay Item | Pay Unit |
|---|---|
| Manual Litter Removal | MHR |
| Litter Disposal | TON |

**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.

Docusign Envelope ID: 70D55B70-5917-4427-988B-A4212989B8AF



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.

Docusign Envelope ID: 70D55B70-5917-4427-988B-A4212989B8AF



Payment will be made under:

| **Pay Item** | **Pay Unit** |
|---|---|
| Fabric Insert Inlet Protection, Type __ | Each |
| Fabric Insert Inlet Protection Cleanout | Each |

## PROJECT SPECIAL PROVISION

(10-18-95) (Rev. 10-15-24) Z-1

## PERMITS

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

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

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

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

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

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

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

# P-2

STATE OF NORTH CAROLINA
## DEPARTMENT OF TRANSPORTATION

JOSH STEIN
GOVERNOR

DANIEL H. JOHNSON
SECRETARY

June 4, 2026

MEMORANDUM TO: Division Construction Units
Contract Standards and Development Unit

FROM: Patrick J Beedlove, Division PDEA Engineer
Division Environmental Unit

SUBJECT: Environmental Permits for the roadway repairs to U.S. 176, Sites 300s and 900s in Polk County, Division 14.
**WBS Number: DF18314.1075023 W03293**

Please find enclosed the following permits for this project:

| Agency | Permit Type | Permit Expiration |
|---|---|---|
| US Army Corps of Engineers<br>Section 404 Clean Water Act Permit | Nationwide Permit 3<br>Action ID: SAW-2025-02133<br>dated May 13, 2026. | March 14, 2031 |
| NC Division of Water Resources<br>Section 401 Water Quality Certification | Individual Water Quality Certification<br>Project ID: 20251554<br>Certification # WQC008504<br>dated December 16, 2025. | *expires with above permit* |

Work is authorized by the above referenced permit provided it is accomplished in strict accordance with the permitted plans.

The Environmental Coordination and Permitting Group or the Division Environmental Office must be consulted if any deviation from the permit(s) is required.

The General Conditions and Certifications for Nationwide and Regional Permits can be referenced at:
https://xfer.services.ncdot.gov/pdea/EnvironmentalPermits/_General_Conditions_and_Certifications/

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

*Telephone:* ((828) 488-0902
*Customer Service:* 1-877-368-4968
*Website:* www.ncdot.gov

*Location:*
253 WEBSTER ROAD
SYLVA NC 28779

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT
WILMINGTON REGULATORY OFFICE
69 DARLINGTON AVENUE
WILMINGTON NORTH CAROLINA 28403

May 13, 2026

Regulatory Division
SAW-2025-02133

Sent Via email: pjbreedlove@ncdot.gov

North Carolina Department of Transportation
Patrick Breedlove
345 Toot Hollow Road
Bryson City, NC 28713

Dear Mr. Breedlove:

This letter is in response to the Pre-Construction Notification (PCN) you submitted to the Wilmington District, WRDA/Transportation Branch on November 18, 2025, for a Department of the Army Nationwide permit (NWP) verification. This project has been assigned the file number SAW-2025-02133 and is known as Hurricane Helene / DF18314.1075023 W03293 / Sites 300s and 900s / US 176 . This file number should be referenced in all correspondence concerning this project.

A review of the information provided indicates that the proposed work would include post Helene repairs to US 176 and will result in the temporary impact to 2,592 lf of stream channel and the permanent impact to 854 lf of stream channel. Specific impacts are shown in the table below. The project is located along US 176 starting near the intersection of Thompson Road with US 176 and terminating approximately 0.8 miles east of the intersection of Bear Creek Lane and US 176 in Saluda, Polk County, North Carolina, at Latitude 35.221950 and Longitude -82.301150.

| Site Number | Impact Category | Permanent Impacts | Temporary Impacts | Permit Number/ Impact Description |
|---|---|---|---|---|
| **Site 5A SC** | **De-watering** | | 38’ (0.003 AC) | NWP 3 – De-watering |
| **Site 5A SD** | **De-watering** | | 7’ (0.001 AC) | NWP 3 – De-watering |
| **Site 5B SC** | **Bank Stabilization/De-watering** | 10’ (0.001 AC) | 26’ (0.002 AC) | NWP 3 – Bank Stabilization and De-watering |
| **Site 6A SE** | **De-watering** | | 12’ (0.001 AC) | NWP 3 – De-watering |
| **Site 6B SE** | **Bank Stabilization/De-watering** | 11’ (0.001 AC) | 15’ (0.001 AC) | NWP 3 – Bank Stabilization and De-watering |
| **Site 6C SG** | **De-watering** | | 11’ (0.003 AC) | NWP 3 – De-watering |
| **Site 7A SH** | **Bank Stabilization/De-watering** | 8’ (0.001 AC) | 12’ (0.001 AC) | NWP 3 – Bank Stabilization and De-watering |
| **Site 8A NPR[1]** | **Bank Stabilization** | 161’ (0.053 AC) | | NWP 3 – Bank Stabilization |

| | | | | |
|---|---|---|---|---|
| **Site 8B NPR[2]** | **De-watering/Causeway** | | 222’ (0.109 AC) | NWP 3 – Dewatering/Causeway |
| **Site 8B Bear Creek** | **De-watering** | | 93’ (0.034 AC) | NWP 3 – De-watering |
| **Site 9A NPR[1]** | **Bank Stabilization** | 102’ (0.016 AC) | | NWP 3 – Bank Stabilization |
| **Site 9A NPR[2]** | **De-watering/Causeway** | | 329’ (0.171 AC) | NWP 3 – Dewatering/Causeway |
| **Site 9B SJ** | **De-watering** | | 25’ (0.002 AC) | NWP 3 – De-watering |
| **Site 9C NPR[1]** | **Bank Stabilization** | 7’ (0.001 AC) | | NWP 3 – Bank Stabilization |
| **Site 9C NPR[2]** | **De-watering/Causeway** | | 257’ (0.098 AC) | NWP 3 – Dewatering/Causeway |
| **Site 9D SK** | **Bank Stabilization** | 17’ (0.001 AC) | | NWP 3 – Bank Stabilization |
| **Site 9D SL** | **De-watering** | | 23’ (0.002 AC) | NWP 3 - Dewatering |
| **Site 10A NPR[1]** | **Bank Stabilization** | 21’ (0.001 AC) | | NWP 3 – Bank stabilization |
| **Site 10A NPR[2]** | **De-watering/Causeway** | | 115’ (0.025 AC) | NWP 3 – Dewatering/Causeway |
| **Site 10B SO** | **De-watering** | | 17’ (0.001 AC) | NWP 3 – Dewatering |
| **Site 11A NPR[1]** | **Bank Stabilization** | 356’ (0.049 AC) | | NWP 3 – Bank stabilization |
| **Site 11A NPR[2]** | **De-watering/Causeway** | | 967’ (0.422 AC) | NWP 3 – Dewatering/Causeway |
| **Site 11B SP[3]** | **Fill/Dewatering** | 31’ (0.002 AC) | 16’ (0.001 AC) | NWP 3 – Fill and De-watering |
| **Site 11C SQ[3]** | **Fill/Dewatering** | 30’ (0.002 AC) | 13’ (0.001 AC) | NWP 3 – Fill and De-watering |
| **Site 11D SR[3]** | **Fill/Dewatering** | 51’ (0.004 AC) | 14’ (0.001 AC) | NWP 3 – Fill and De-watering |
| **Site 12A NPR[1]** | **Bank stabilization** | 49’ (0.009 AC) | | NWP 3 – Bank stabilization |
| **Site 12A NPR[2]** | **De-watering/Causeway** | | 355’ (0.099 AC) | NWP 3 – Dewatering/Causeway |
| **Site 12B ST** | **De-watering** | | 25’ (0.002 AC) | NWP 3 – Dewatering |
| | **Total** | **854’ (0.141 AC)** | **2,592’ (0.980 AC)** | |

*The information above is provided in accordance with the “U.S. Army Corps of Engineers, Wilmington District’s Information for Hurricane Helene Recovery and Repair Work Conducted by the North Carolina Department of Transportation in Waters of the U.S.” dated February 10, 2025.*

[1] Bank stabilization along the North Pacolet River (NPR) is returning the river as near as possible to its pre-Helene location, thereby allowing US 176 to be repaired in its pre-Helene location

[2] A construction causeway is required in the NPR due to the lack of workspace from US 176. Less than 50% of the flow way will be blocked by the causeway.

[3] Due to the steep slope and bank stabilization, the sections of SP, SQ and SR between US 176 and the NPR will be piped in a culvert along US 176, to outlet into the NPR at Sta. 29+00.

We have determined that the proposed work is authorized by NWP 3 pursuant to authorities under Section 404 of the Clean Water Act (33 U.S.C § 1344). The proposed work must be accomplished in strict accordance with the general permit conditions, any regional conditions, the special conditions listed in this letter, the application materials, and the enclosed plans. If the extent of the project area and/or nature of the authorized impacts to waters are modified, a revised PCN must be submitted to this office for written approval before work is initiated. Any violation of permit conditions or deviation from your submitted plans may subject the permittee to enforcement action.

This verification is valid until **March 15, 2031**, unless prior to this date the subject NWP(s) is suspended, revoked, or is modified such that the activity no longer complies with the terms and conditions of this NWP. If you commence or are under contract to commence this activity before the date that the relevant NWP is modified or revoked, you will have 12 months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this NWP.

Project Specific Special Conditions:

1. 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, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that are specified in the PBO/PCO. The USFWS adopted the PBO/PCO as the Programmatic Biological Opinion (PBO) for the effects of this action on September 4, 2025. Your authorization under this Corps permit is conditional upon your compliance with all the mandatory terms and conditions associated with incidental take of the PBO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the PBO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its PBO, and with the ESA.

2. Per the NC Wildlife Resources Commission's correspondence dated November 20, 2025, River channel disturbance beyond the footprints of the proposed causeways/work pads must be avoided. The riverbed should not be disturbed under workpads, or if necessary, these areas should be restored using the pre-existing riverbed materials, and scattered boulders placed along the wall faces. Additionally, the NCWRC requests the addition of scattered boulders along the wall faces to further mitigate habitat impacts and provide some channel roughness**.**

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

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

Sincerely,

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

Docusign Envelope ID: 7A0BC1B3-4151-425C-ACC4-2A4EF9DC66A5

JOSH STEIN
*Governor*
D. REID WILSON
*Secretary*
RICHARD E. ROGERS, JR.
*Director*

NORTH CAROLINA
*Environmental Quality*

December 16, 2025

DWR # 20251554
Polk County

North Carolina Department of Transportation
Attn: Patrick Breedlove
345 Toot Hollow Road
Bryson City, North Carolina, 28713

Delivered via email to: pjbreedlove@ncdot.gov

**Subject:** **Approval of Individual 401 Water Quality Certification**
US 176 Sites 300s and 900s Helene Repairs, WBS# DF18314.1075023
W03293

**Location:** 35.22194855 / 82.30115174

Dear Mr. Breedlove:

Attached hereto is a copy of Certification No. WQC008504 issued to Mr. Patrick Breedlove and The North Carolina Department of Transportation (NCDOT) dated December 16, 2025. This approval is for the purpose and design described in your application.

This Water Quality Certification does not relieve the Permittee of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

Upon the presentation of proper credentials, the Division of Water Resources (Division) may inspect the property.

This Water Quality Certification shall expire on the same day as the expiration date of the corresponding Section 404 Permit that is current at the time this Certification is issued. The conditions shall remain in effect for the life of the project, regardless of the expiration date of this Water Quality Certification.

Non-compliance with or violation of the conditions herein set forth may result in revocation of this Water Quality Certification for the project and may also result in criminal and/or civil penalties. This approval and its conditions are final and binding unless contested [G.S. 143-215.5].

The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.

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

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

Dan Hirschman, General Counsel
Department of Environmental Quality
1601 Mail Service Center
Raleigh, NC 27699-1601

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

This letter completes the Division's review under Section 401 of the Clean Water Act and 15A NCAC 02H .0500. Please contact Amy Annino at 828-296-4668 or amy.annino@deq.nc.gov if you have any questions or concerns.

Sincerely,

Signed by:
Faith Hardin
3185423002EA45E...
Faith Hardin, Supervisor
401 & Buffer Transportation Permitting Branch

Electronic cc: Crystal Amschler, US Army Corps of Engineers, Asheville Field Office
Patrick Breedlove, Division 14 PDEA Engineer
Chad Plemmons, NCDOT Division 14
Kevin Mitchell, NCDOT Division 14
Holland Youngman, US Fish and Wildlife Service
Dave McHenry, NC Wildlife Resources Commission
Transportation Permitting Branch Electronic file

Filename: 20251554_US 176 Sites 300s and 900s, Helene Repairs_Approval.docx

**NORTH CAROLINA 401 WATER QUALITY CERTIFICATION**

**CERTIFICATION** #WQC008504 is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to North Carolina's Regulations in 15 NCAC 02H .0500 and 15A NCAC 02B .0200, to Mr. Patrick Breedlove and the North Carolina Department of Transportation, who have authorization for the impacts listed below, as described within your application received by the N.C. Division of Water Resources (Division) on November 18, 2025, and subsequent information on December 10, 2025, December 16, 2025, and by Public Notice issued by the Division on November 18, 2025, and within the *Reasonable Period of Time* pursuant to 40 CFR Part 121.6.

The State of North Carolina certifies that this activity will comply with water quality requirements and the applicable portions of Sections 301, 302, 303, 306, 307 of the Public Laws 92-500 and PL 95-217 if conducted in accordance with the application, the supporting documentation, and conditions hereinafter set forth.

The following impacts are hereby approved. No other impacts are approved, including incidental impacts. [15A NCAC 02H .0506(b)]

**Stream Impacts in the Broad River Basin**

| Site | Permanent Fill in Intermittent Stream (linear ft) | Temporary Fill in Intermittent Stream (linear ft) | Permanent Fill in Perennial Stream (linear ft) | Temporary Fill in Perennial Stream (linear ft) | Total Stream Impact (linear ft) | Stream Impacts Requiring Mitigation (linear ft) |
|---|---|---|---|---|---|---|
| S1 | - | - | - | 38 | 38 | 0 |
| S2 | - | -- | - | 7 | 7 | 0 |
| S3 | - | - | 10 | - | 10 | 0 |
| S4 | - | - | - | 26 | 26 | 0 |
| S5 | - | - | - | 12 | 12 | 0 |
| S6 | - | - | 11 | - | 11 | 0 |
| S7 | - | - | - | 15 | 15 | 0 |
| S8 | - | - | - | 11 | 11 | 0 |
| S9 | - | - | 8 | - | 8 | 0 |
| S10 | - | - | - | 12 | 12 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| S11 | - | - | 161 | - | 161 | 0 |
| S12 | - | - | - | 222 | 222 | 0 |
| S13 | - | - | - | 93 | 93 | 0 |
| S14 | - | - | 102 | - | 102 | 0 |
| S15 | - | - | - | 329 | 329 | 0 |
| S16 | - | - | - | 25 | 25 | 0 |
| S17 | - | - | 7 | - | 7 | 0 |
| S18 | - | - | - | 257 | 257 | 0 |
| S19 | - | - | 17 | - | 17 | 0 |
| S20 | - | - | - | 23 | 23 | 0 |
| S21 | - | - | 21 | - | 21 | 0 |
| S22 | - | - | - | 115 | 115 | 0 |
| S23 | - | - | - | 17 | 17 | 0 |
| S24 | - | - | 356 | - | 356 | 0 |
| S25 | - | - | - | 967 | 967 | 0 |
| S26 | - | - | 31 | - | 31 | 0 |
| S27 | - | - | - | 16 | 16 | 0 |
| S28 | - | - | 30 | - | 30 | 0 |
| S29 | - | - | - | 13 | 13 | 0 |
| S30 | - | - | 51 | - | 51 | 0 |
| S31 | - | - | - | 14 | 14 | 0 |
| S32 | - | - | 49 | - | 49 | 0 |
| S33 | - | - | - | 355 | 355 | 0 |
| S34 | - | - | - | 25 | 25 | 0 |
| ***Total*** | - | - | *854 | 2,592 | 3,446 | 0 |

*Permanent impact, not permanent loss. Impacts consist of fill material in original footprint and bank stabilization. Mitigation not required.

**Total Stream Impact for Project: 854 linear feet Permanent and 2,592 linear feet Temporary**

This approval requires you to follow the conditions listed in the Certification below.

CONDITIONS OF CERTIFICATION [15A NCAC 02H .0507(c)]:

Project Specific Conditions

1. The NCDOT Division Environmental Officer or Environmental Assistant will conduct a pre-construction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand the potential issues with stream and pipe alignment at the permitted site. NCDWR staff shall be invited to the pre-construction meeting. [15A NCAC 02H.0506(b)(2) and (b)(3)]

2. The permittee shall use Design Standards in Sensitive Watersheds in areas draining to Trout waters. [15A NCAC 4B.0124(a)-(e)]

3. NCDOT shall be in compliance with the NCS00250 issued to the NCDOT, including the applicable requirements of the NCG01000. Please note the extra protections for the sensitive watersheds.

4. Any material used to construct the temporary causeway and permanent bank stabilization within the North Pacolet River shall be of a size and density to prevent movement by wave, current action, or stream flows, and shall consist of clean rock or masonry material free of debris or toxic pollutants. Rip rap shall not be installed in the streambed except in specific areas required for velocity control and to ensure structural integrity of bank stabilization measures. [15A NCAC 02H .0506(b); 15A NCAC 02H .0507(c); 15A NCAC 02B .0201]

5. The post-construction removal of any temporary structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species. [15A NCAC 02H .0506(b)(2)]

**General Conditions**

1. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control

measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]

2. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. [15A NCAC 02B.0200]

3. For all streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species. [15A NCAC 02H.0506(b)(2)]

4. During the construction of the project, no staging of equipment of any kind is permitted in waters of the state or protected riparian buffers. [15A NCAC 02H.0506(b)(2)]

5. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions. [15A NCAC 02H.0506(b)(2)]

6. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H.0506(b)(2)]

7. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

8. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water. [15A NCAC 02H.0506(b)(3) and (c)(3)]

9. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream. [15A NCAC 02H.0506(b)(3)]

10. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. [15A NCAC 02H.0506(b)(3)]

11. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. [15A NCAC 02H.0506(b)(3)]

12. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]

13. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B.0200]

14. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. [15A NCAC 02H.0506(b)(2)]

15. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

16. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization, including all non-commercial borrow and waste sites associated with the project, shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]

17. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B.0506(b)(2)]

18. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer (or whomever is the authorized agent if a non-NCDOT project) shall complete and return the "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0507]

19. Native riparian vegetation (i.e., herbaceous, trees, and shrubs native to your geographic region)

must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. [15A NCAC 02B.0506(b)(2)]

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

21. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within jurisdictional wetlands. [15A NCAC 2H.0506; 15A NCAC 2H.0507]

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

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

23. Sediment and erosion control measures shall not be placed in wetlands or surface waters without prior approval from DWR. [15A NCAC 02H.0506(b)(3)]

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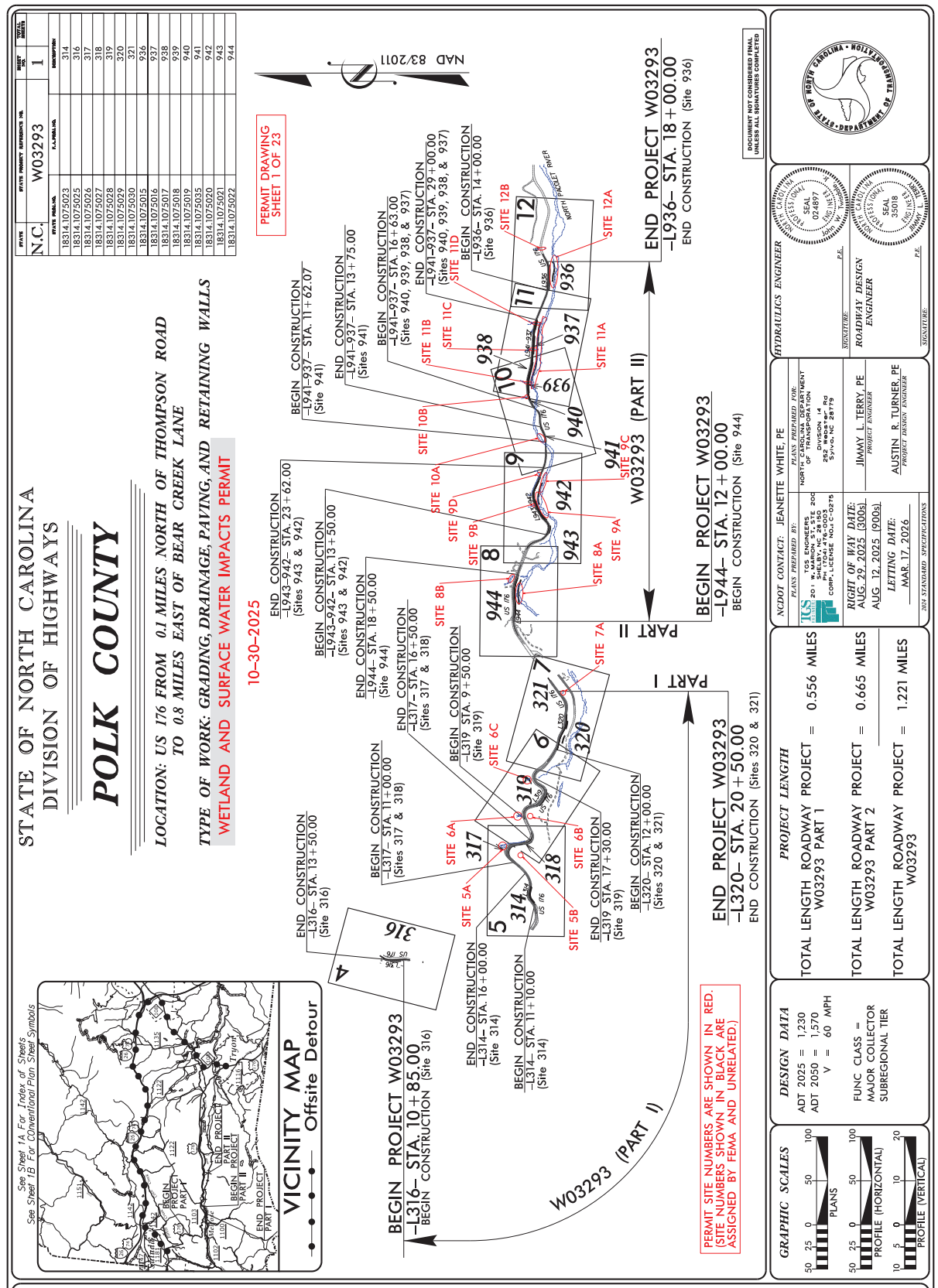
This Water Quality Certification shall expire on the same day as the expiration date of the corresponding Section 404 Permit that is current at the time this Certification is issued. The conditions shall remain in effect for the life of the project, regardless of the expiration date of this Water Quality Certification.

This, the 16th day of December 2025

Signed by:
Faith Hardin
3185423002EA45E...
Faith Hardin, Supervisor
401 & Buffer Transportation Permitting Branch

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10/30/2025
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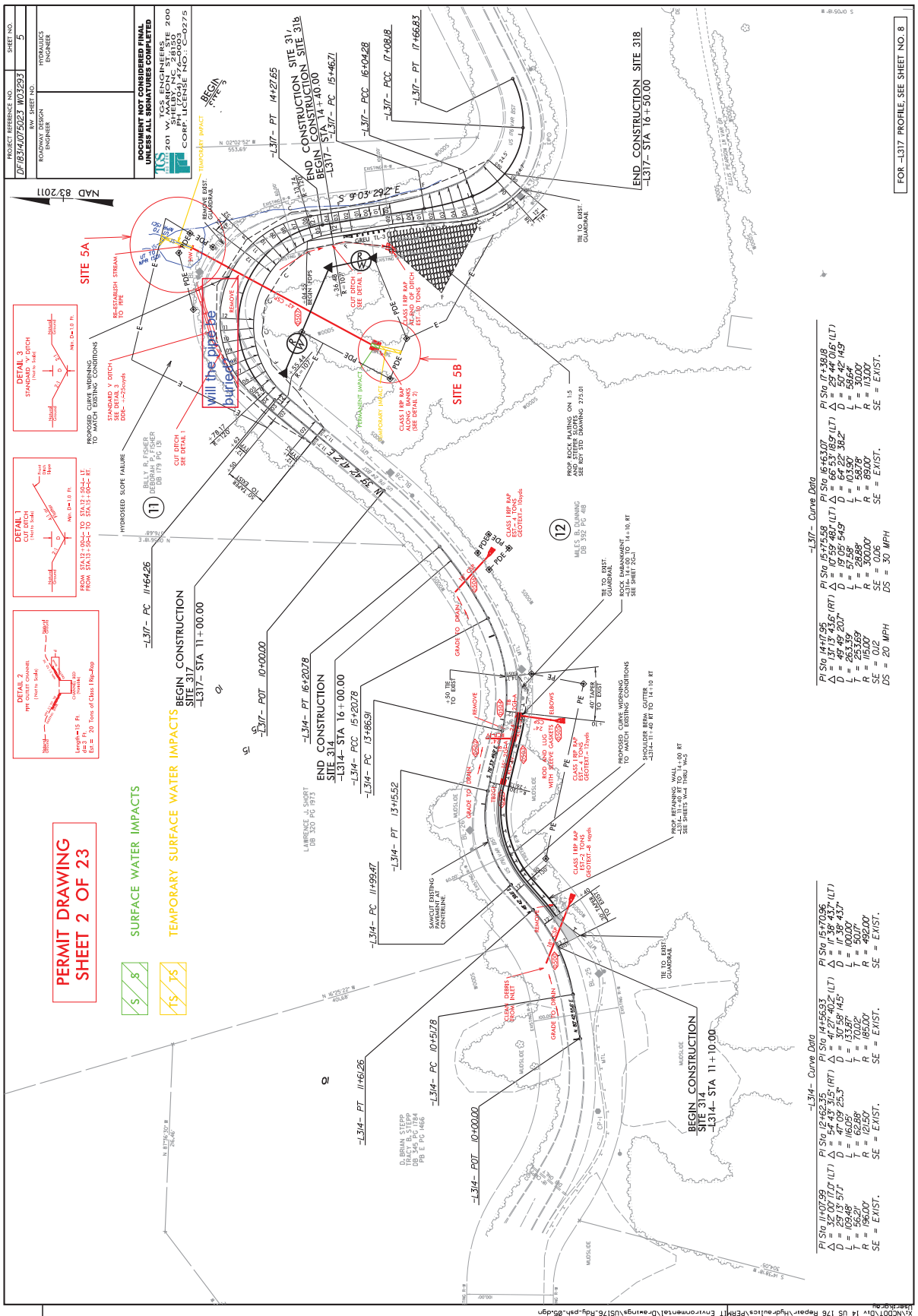
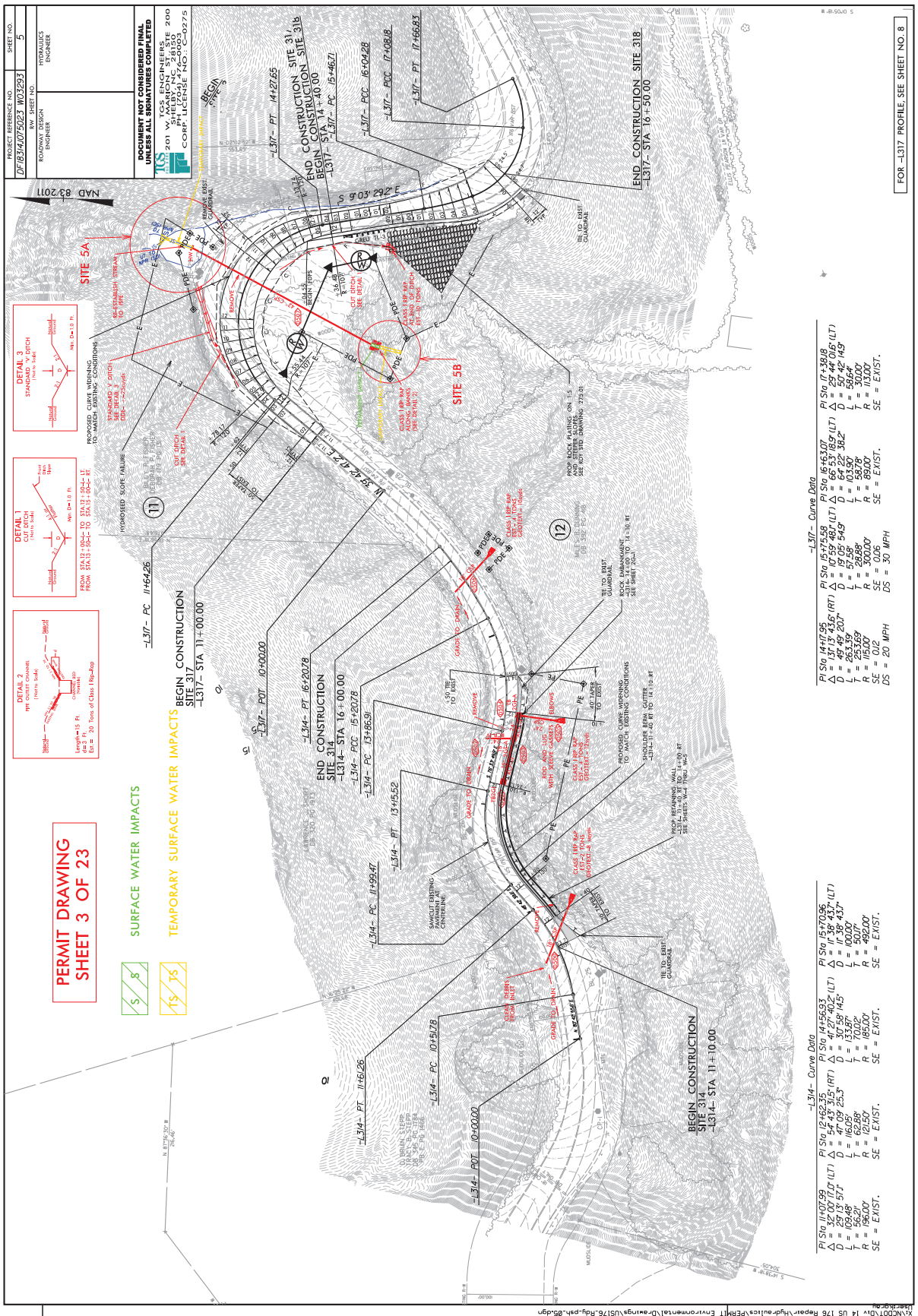
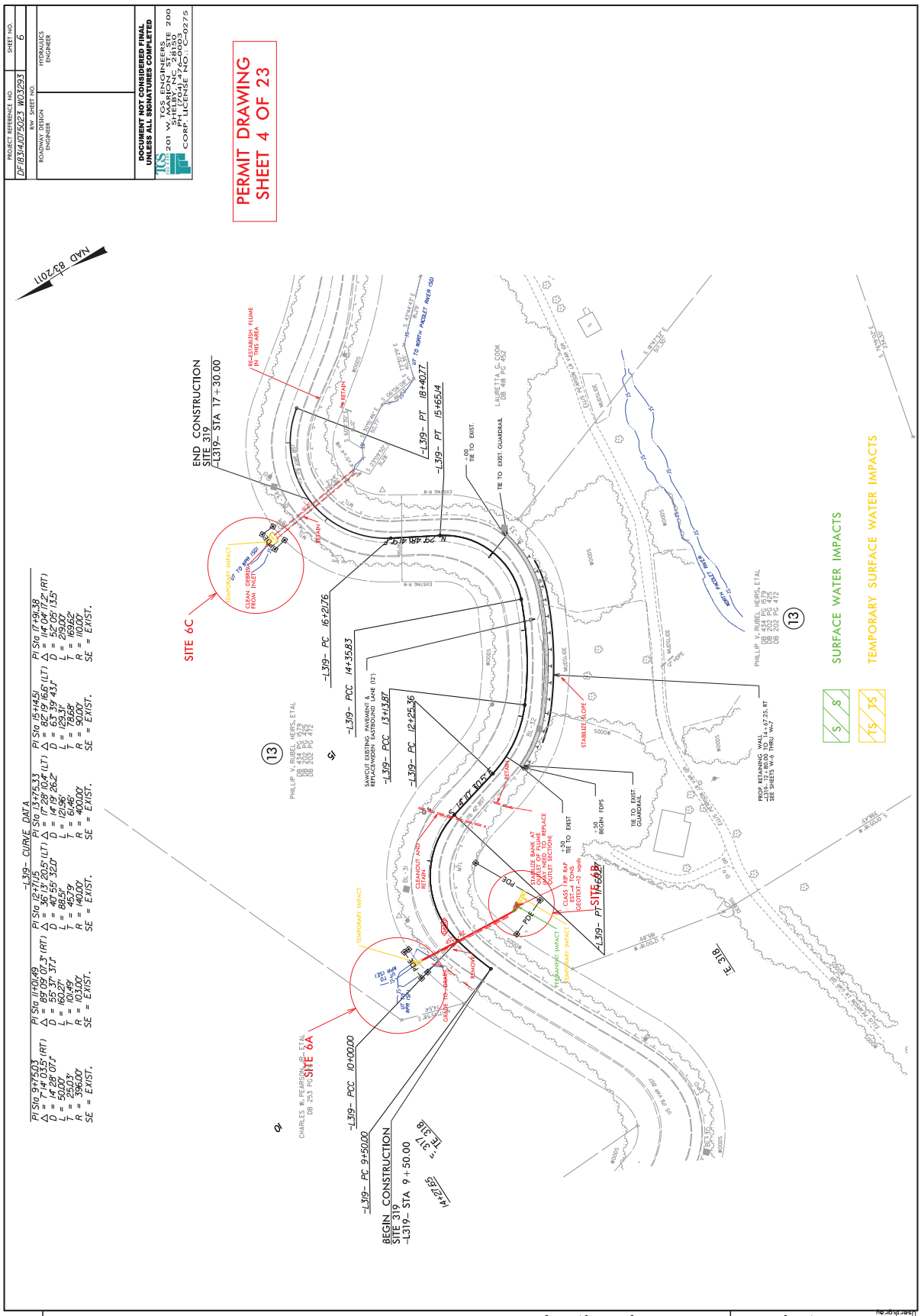

PERMIT DRAWING
SHEET 2 OF 23
SURFACE WATER IMPACTS
TEMPORARY SURFACE WATER IMPACTS
SITE 5A
SITE 5B
BEGIN CONSTRUCTION SITE 317
-L317- STA 11+00.00
END CONSTRUCTION SITE 316
-L317- STA 16+50.00
BEGIN CONSTRUCTION SITE 314
-L314- STA 11+10.00
END CONSTRUCTION SITE 314
-L314- STA 16+00.00
END CONSTRUCTION SITE 315
-L317- STA 14+40.00
-L317- PC 11+64.26
-L317- POT 10+00.00
-L317- PT 14+27.65
-L317- PCC 16+04.28
-L317- PT 17+66.83
-L314- PC 11+46.26
-L314- POT 10+00.00
-L314- PT 11+99.47
-L314- PC 13+15.52
-L314- PCC 15+20.78
-L314- PT 16+20.78
Will the pipe be buried?
DETAIL 1 CUT DITCH
DETAIL 2 RIP RAP OUTLET CHANNEL
DETAIL 3 STANDARD "V" DITCH
-L317- Curve Data
-L314- Curve Data
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MARION STREET SUITE 200
SHELBY, NC 28150
PH: 704.487.1200
CORP. LICENSE NO: C-0275
PROJECT REFERENCE NO. DF8314/075023 WO3293
SHEET NO. 5
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83/2011
FOR -L317 PROFILE, SEE SHEET NO. 8
REVISIONS

# P-18


PERMIT DRAWING
SHEET 3 OF 23
SURFACE WATER IMPACTS
TEMPORARY SURFACE WATER IMPACTS
SITE 5A
SITE 5B
BEGIN CONSTRUCTION SITE 317
-L317- STA 11+00.00
END CONSTRUCTION SITE 318
-L317- STA 16+50.00
BEGIN CONSTRUCTION SITE 314
-L314- STA 11+10.00
END CONSTRUCTION SITE 314
-L314- STA 16+00.00
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MARION STREET, SUITE 200
SHELBY, NC 28150
PH: 704.487.1200
CORP. LICENSE NO. C-0275
PROJECT REFERENCE NO. DF8314075023 WBS293
SHEET NO. 5
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83/2011
FOR -L317 PROFILE, SEE SHEET NO. 8
REVISIONS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PROJECT REFERENCE NO.
DF1831/075023 WO3293
SHEET NO.
6
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MARION ST. SUITE 200
SHELBY, NC 28150
PHONE: 704-487-1055
CORP. LICENSE NO: C-0275
NAD 83/2011
SITE 6C
SITE 6A
END CONSTRUCTION
SITE 319
-L319- STA 17+30.00
BEGIN CONSTRUCTION
SITE 319
-L319- STA 9+50.00
-L319- PC 9+50.00
-L319- PT 11+68.68
-L319- PC 10+00.00
-L319- PC 12+25.36
-L319- PC 13+13.87
-L319- PC 14+35.83
-L319- PC 16+21.76
-L319- PT 15+65.44
-L319- PT 18+40.77
-L319- CURVE DATA
PI Sta 9+75.03
Δ = 7°14'03.5" (RT)
D = 14°28'07.1"
L = 25.03'
R = 396.00'
SE = EXIST.
PI Sta 11+01.49
Δ = 89°09'07.3" (RT)
D = 160.27'
L = 101.49'
R = 103.00'
SE = EXIST.
PI Sta 12+71.15
Δ = 36°13'20.5" (LT)
D = 48.85'
L = 45.79'
R = 140.00'
SE = EXIST.
PI Sta 13+75.33
Δ = 17°28'10.4" (LT)
D = 14°19'
L = 61.46'
R = 400.00'
SE = EXIST.
PI Sta 15+14.51
Δ = 82°19'16.6 (LT)
D = 63.39'
L = 129.68'
R = 90.00'
SE = EXIST.
PI Sta 17+90.38
Δ = 114°04'11.2" (RT)
D = 52.05'
L = 169.62'
R = 110.00'
SE = EXIST.
SURFACE WATER IMPACTS
TEMPORARY SURFACE WATER IMPACTS
REVISIONS
10/20/2025
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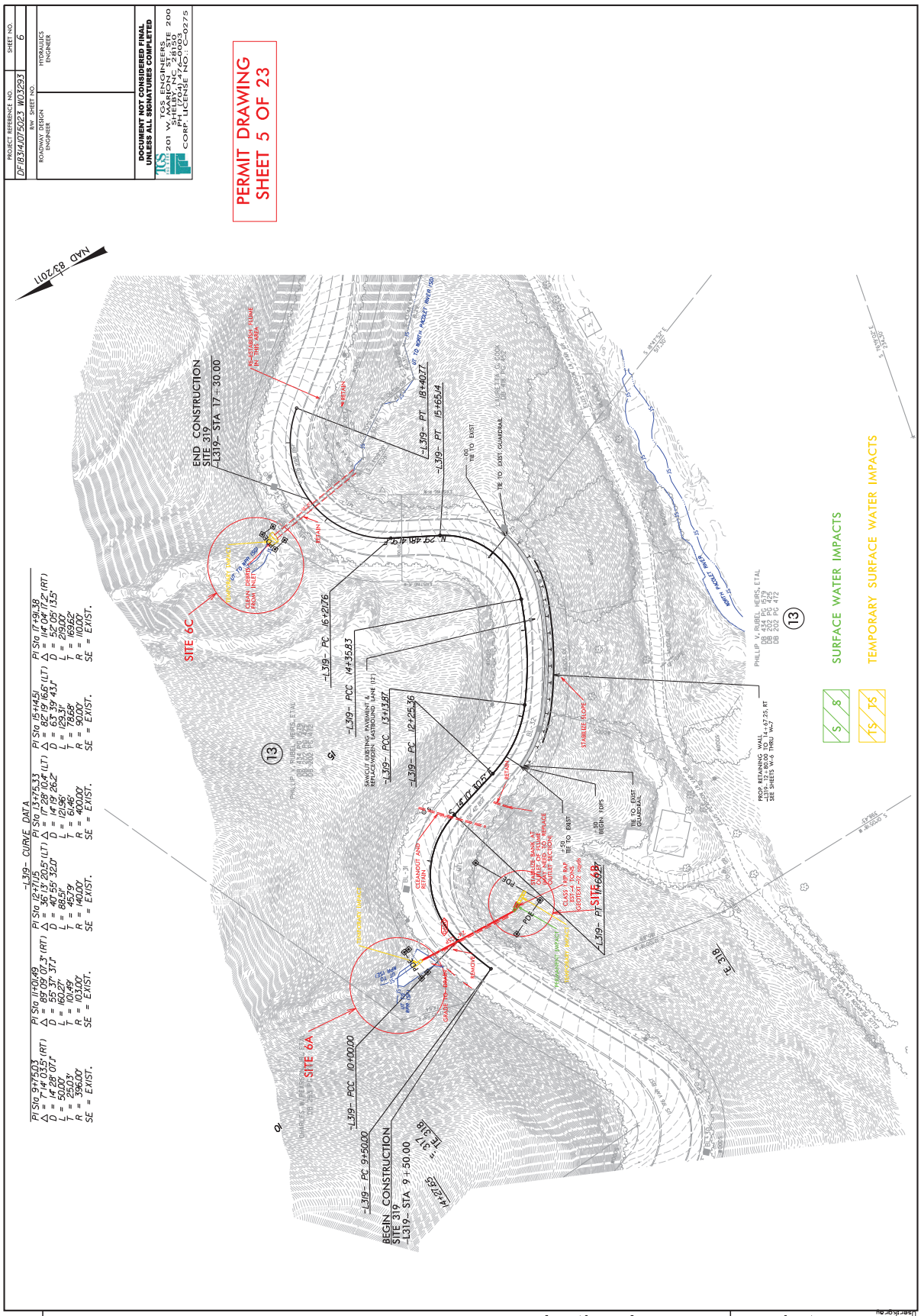
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PROJECT REFERENCE NO. DF1831/075023 WO3293
SHEET NO. 6
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MARION ST. SUITE 200
SHELBY, NC 28150
PHONE 704-477-2005
CORP. LICENSE NO. C-0275
NAD 83/2011
-L319- CURVE DATA
PI Sta 9+75.03
Δ = 7°14'03.5" (RT)
D = 14°28'07.1"
L = 25.03'
R = 396.00'
SE = EXIST.
PI Sta 11+01.49
Δ = 89°09'07.3" (RT)
D = 160.27'
L = 101.49'
R = 103.00'
SE = EXIST.
PI Sta 12+71.15
Δ = 36°13'20.5" (LT)
D = 48.85'
L = 45.79'
R = 140.00'
SE = EXIST.
PI Sta 13+75.33
Δ = 17°28'10.4" (LT)
D = 14°19'
L = 61.46'
R = 400.00'
SE = EXIST.
PI Sta 15+14.51
Δ = 82°19'16.6 (LT)
D = 63.39'
L = 79.68'
R = 90.00'
SE = EXIST.
PI Sta 17+90.38
Δ = 114°04'11.2" (RT)
D = 52.05'
L = 169.62'
R = 110.00'
SE = EXIST.
BEGIN CONSTRUCTION
SITE 319
-L319- STA 9+50.00
-L319- PC 9+50.00
-L319- PCC 10+00.00
SITE 6A
SITE 6B
SITE 6C
-L319- PCC 12+25.36
-L319- PC 12+71.15
-L319- PCC 13+13.87
-L319- PC 14+35.83
-L319- PC 16+21.76
-L319- PT 18+40.77
-L319- PT 15+65.42
END CONSTRUCTION
SITE 319
-L319- STA 17+30.00
SURFACE WATER IMPACTS
TEMPORARY SURFACE WATER IMPACTS
REVISIONS
10/20/2025
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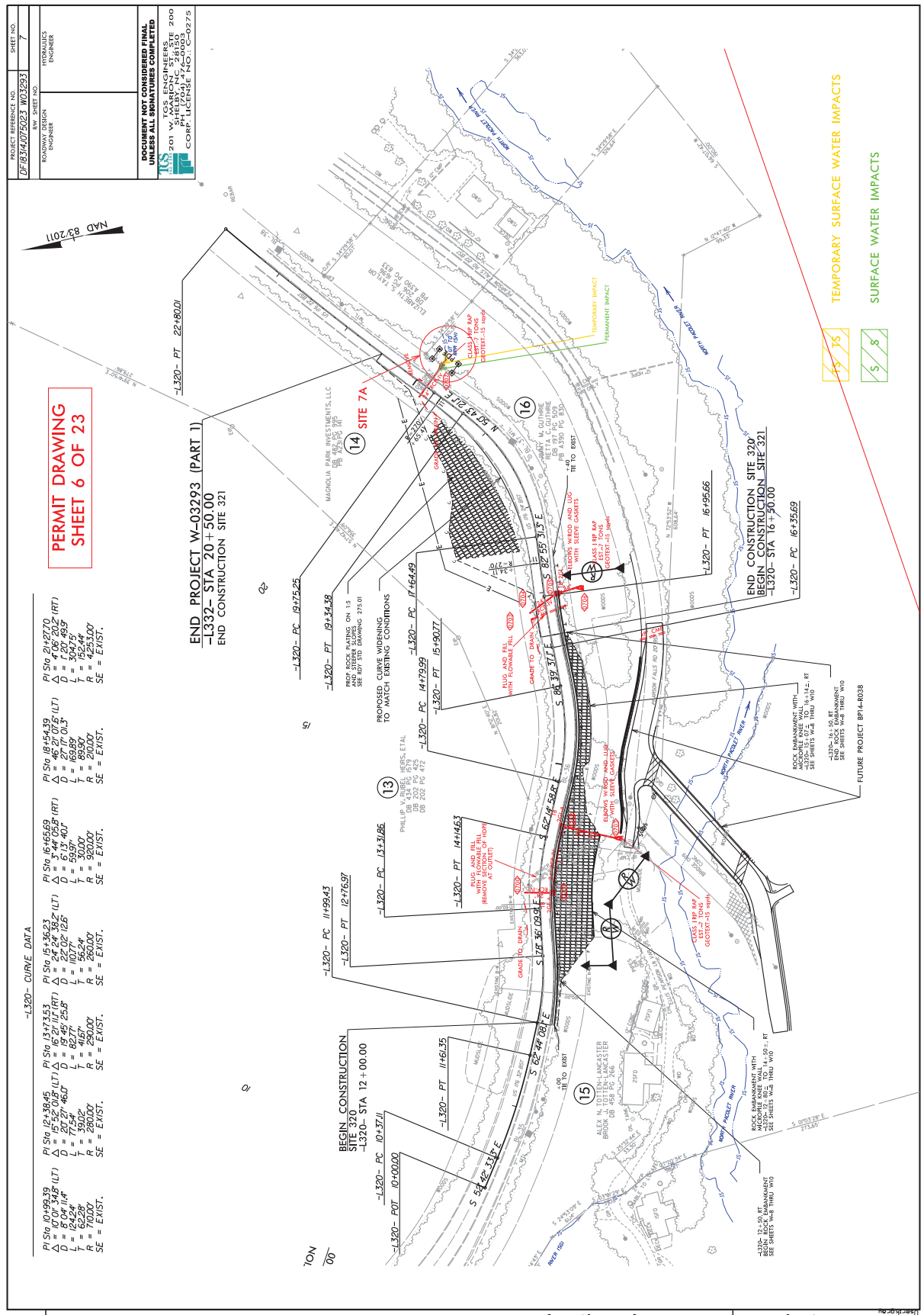
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NAD 83/2011
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T = 106.98'
R = 710.00'
SE = EXIST.
PI Sta 12+38.45
Δ = 25°21'48" (LT)
D = 17°27'46"
L = 77.54'
T = 39.02'
R = 280.00'
SE = EXIST.
PI Sta 13+77.51
Δ = 67°11'41" (RT)
D = 19°45'25.8"
L = 82.77'
T = 46.67'
R = 290.00'
SE = EXIST.
PI Sta 15+36.23
Δ = 24°22'52" (LT)
D = 22°22'12.6"
L = 110.77'
T = 56.24'
R = 260.00'
SE = EXIST.
PI Sta 16+65.69
Δ = 14°46'28" (RT)
D = 6°13'40.1"
L = 59.97'
T = 30.00'
R = 920.00'
SE = EXIST.
PI Sta 18+14.39
Δ = 47°20'42" (LT)
D = 9°17'01.3"
L = 69.89'
T = 36.99'
R = 210.00'
SE = EXIST.
PI Sta 21+27.70
Δ = 7°06'49.5"
L = 304.75'
T = 152.44'
R = 4253.00'
SE = EXIST.
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-L320- STA 12+00.00
-L320- POT 10+00.00
-L320- PC 10+37.11
-L320- PT 11+46.35
-L320- PC 11+99.43
-L320- PT 12+76.97
-L320- PC 13+31.86
-L320- PT 14+14.63
-L320- PC 14+79.99
-L320- PT 15+90.77
-L320- PC 17+64.49
-L320- PT 19+34.38
-L320- PC 19+75.25
-L320- PT 22+80.01
END PROJECT W-03293 (PART 1)
-L332- STA 20+50.00
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END CONSTRUCTION SITE 320
BEGIN CONSTRUCTION SITE 321
-L320- STA 16+50.00
-L320- PC 16+35.69
-L320- PT 16+95.66
SITE 7A
PROPOSED CURVE WIDENING
TO MATCH EXISTING CONDITIONS
PROP ROCK PLATING ON 1:5 SLOPE ALONG EXIST DITCHES SEE RDY STD DRAWING 275.01
CLASS I RIP RAP EST-7 TONS GEOTEXT-I5 sqyd
CLASS I RIP RAP EST-2 TONS GEOTEXT-I5 sqyd
ELBOWS W/ROD AND LUG WITH SLEEVE GASKETS
PLUG AND FILL WITH FLOWABLE FILL
PLUG AND FILL WITH FLOWABLE FILL (REMOVE SECTION OF HDPE AS NEEDED)
GRADE TO DRAIN
ROCK EMBANKMENT WITH MACROFIBER REINF. -L320- 15+07.2 TO -L320- 16+14± RT SEE SHEETS W-8 THRU W10
ROCK EMBANKMENT -L320- 16+50 RT BEGIN ROCK EMBANKMENT SEE SHEETS W-8 THRU W10
-L320- 12+50 RT BEGIN ROCK EMBANKMENT SEE SHEETS W-8 THRU W10
FUTURE PROJECT BP14-R038
NORTH PROJECT RIVER
TEMPORARY IMPACT
PERMANENT IMPACT
TS TEMPORARY SURFACE WATER IMPACTS
S SURFACE WATER IMPACTS
MAGNOLIA PARK INVESTMENTS, LLC DB 4325 PG 1915 PB 1 PG 1
JIMMY M. GUTHRIE RETTA C. GUTHRIE DB 1 PG 1 PB A390 PG 830
PHILLIP V. RUSSELL HEIRS, ET AL DB 434 PG 479 DB 202 PG 472
ALEX N. TOTTEN-LANCASTER BROOK A. TOTTEN-LANCASTER DB 458 PG 266
PROJECT REFERENCE NO. DF-8314/075023 W03293
SHEET NO. 7
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MARKET ST. SUITE 200
SHELBY, NC 28150
PHONE: 704.487.1500
CORP. LICENSE NO.: C-0275
REVISIONS
10/20/2023
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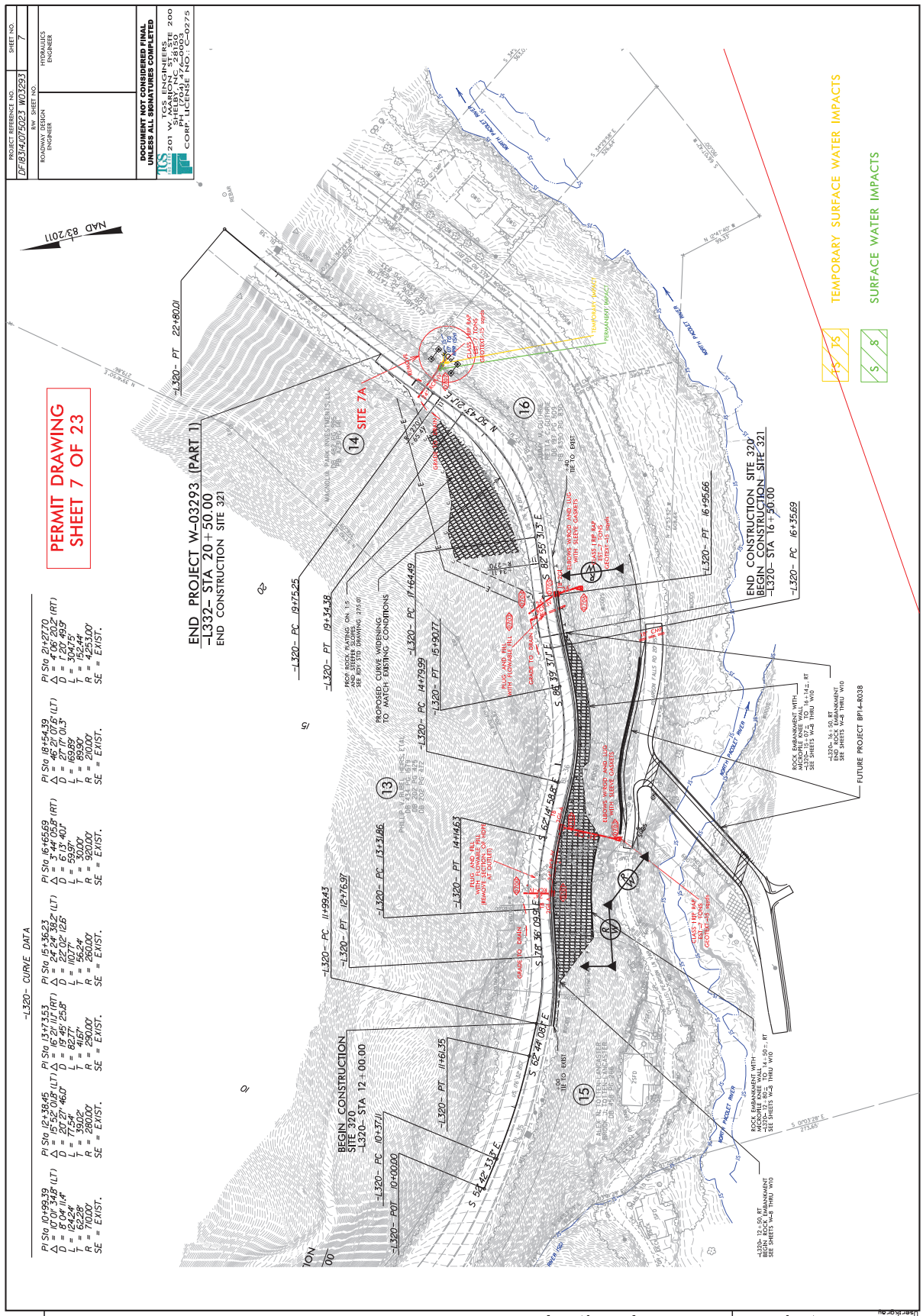
PERMIT DRAWING
SHEET 7 OF 23
NAD 83/2011
END PROJECT W-03293 (PART 1)
-L332- STA 20+50.00
END CONSTRUCTION SITE 321
BEGIN CONSTRUCTION
SITE 320
-L320- STA 12+00.00
END CONSTRUCTION SITE 320
BEGIN CONSTRUCTION SITE 321
-L320- STA 16+50.00
SITE 7A
TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MARKET ST. 200
SHELBY, NC 28150
PHONE: 704.487.1000
CORP. LICENSE NO: C-0275
PROJECT REFERENCE NO. DF-8314/075023 W03293
SHEET NO. 7
ROADWAY DESIGN ENGINEER
R/W SHEET NO.
HYDRAULICS ENGINEER
REVISIONS
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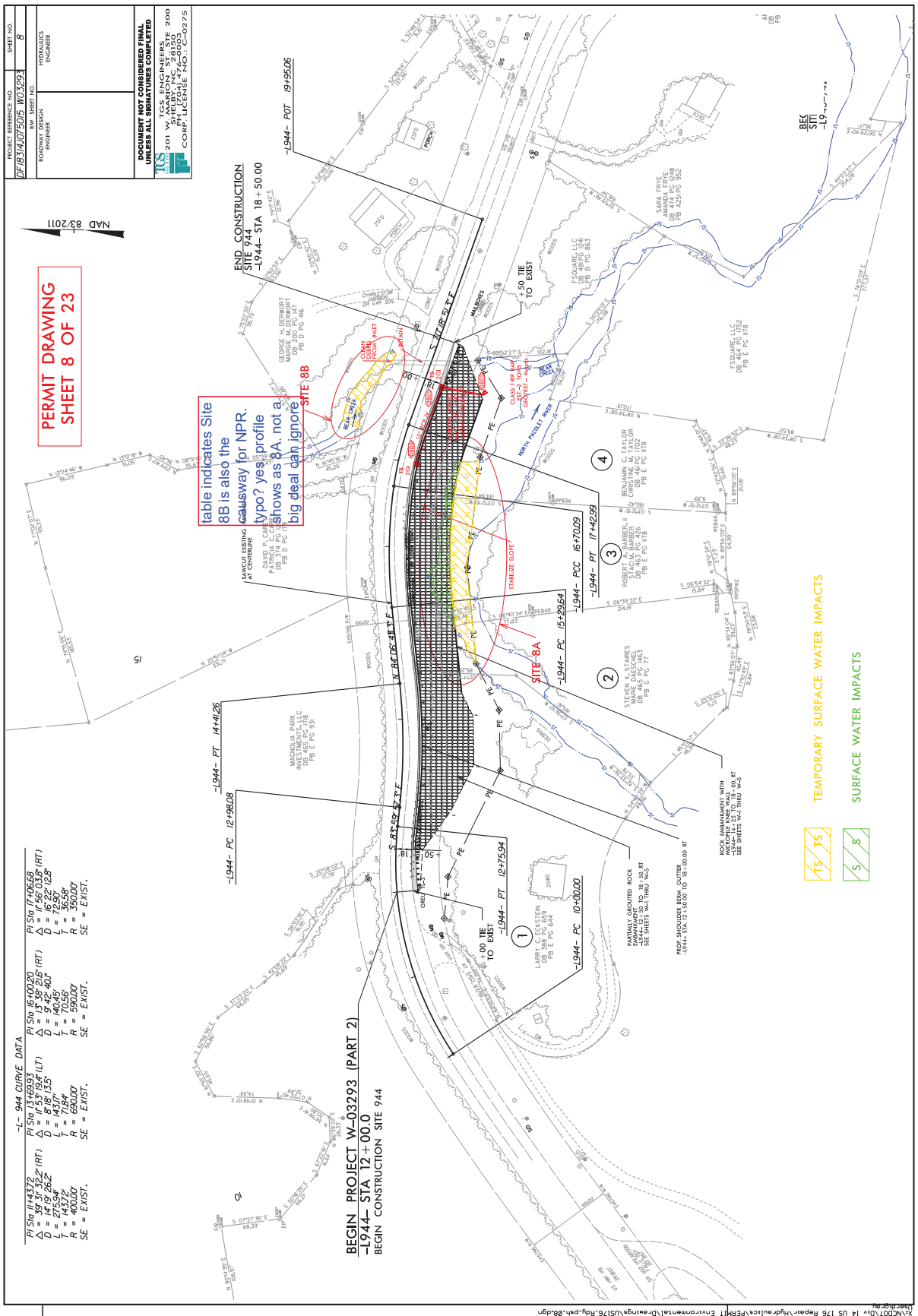
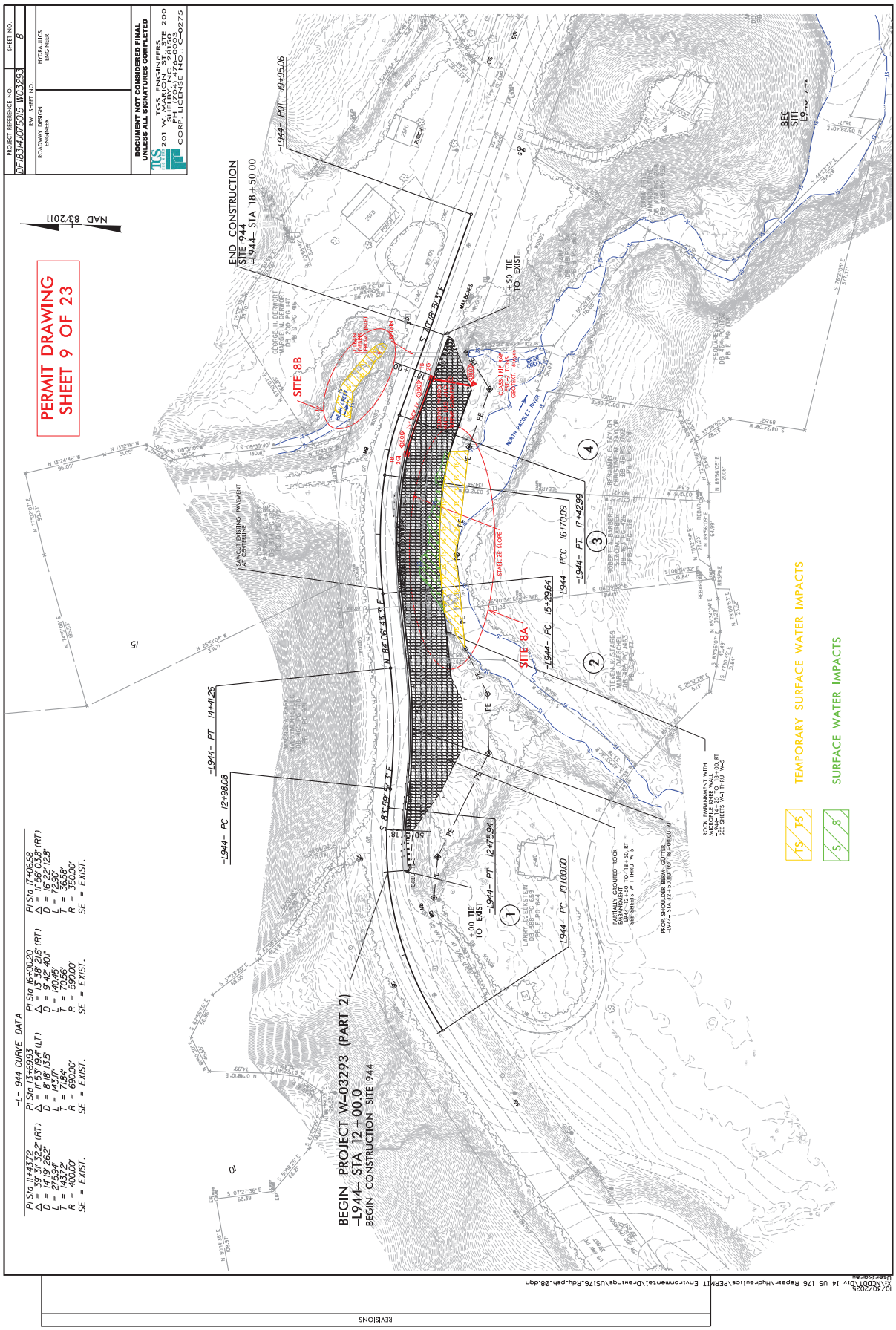
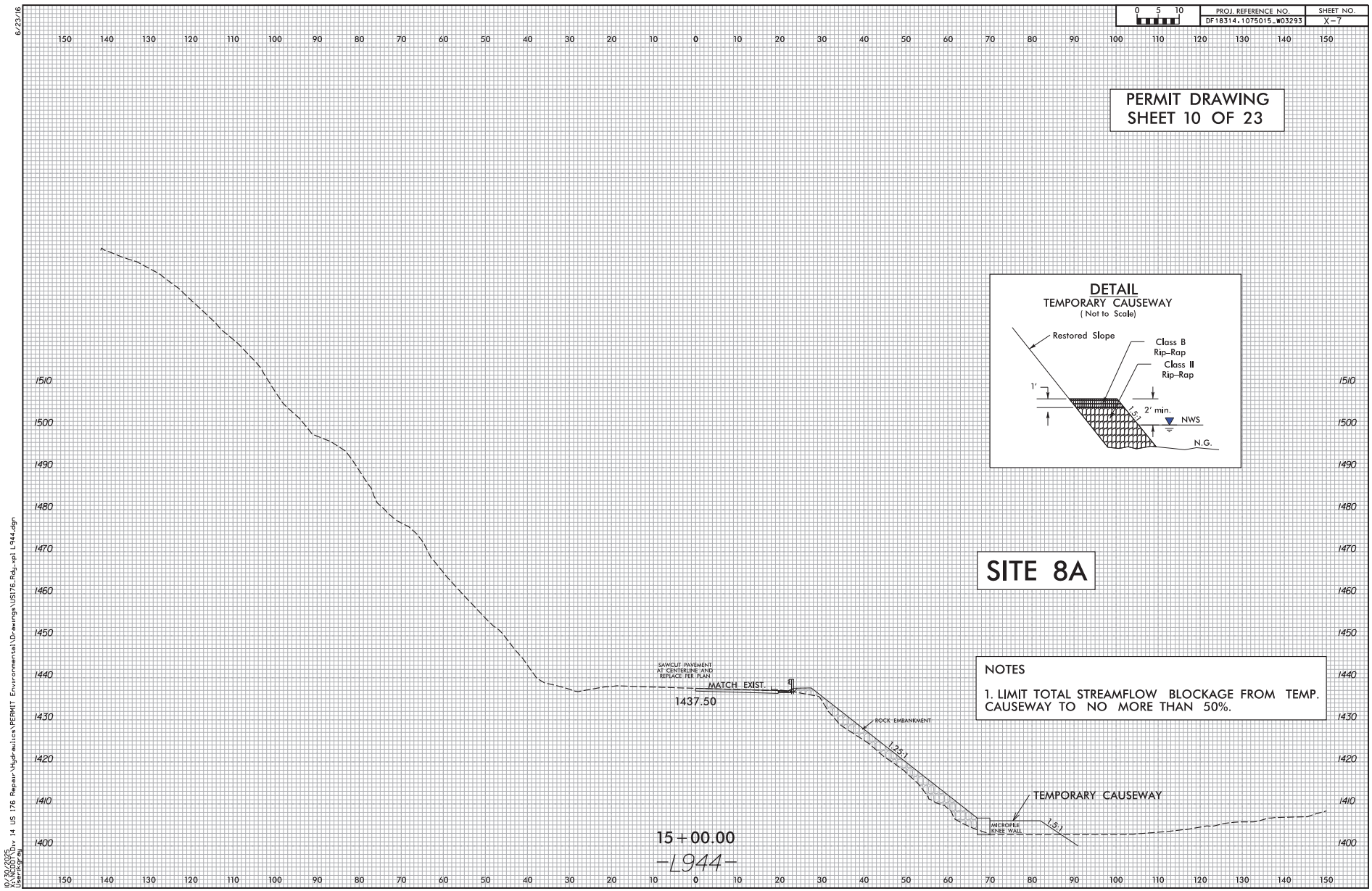

PERMIT DRAWING
SHEET 8 OF 23
table indicates Site 8B is also the causway for NPR. typo? yes, profile shows as 8A. not a big deal dah ignore
SITE 8B
SITE 8A
BEGIN PROJECT W-03293 (PART 2)
-L- STA 12+00.0
BEGIN CONSTRUCTION SITE 944
END CONSTRUCTION SITE 944
-L- STA 18+50.00
-L- 944 CURVE DATA
TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS
NAD 83/2011
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MAGNOLIA STREET SUITE 200
SHELBY, NC 28150
PHONE: 704.470.4220
CORP. LICENSE NO: C-0275
PROJECT REFERENCE NO. DF18314/07505 W03293
SHEET NO. 8
ROADWAY DESIGN ENGINEER
RW SHEET NO.
HYDRAULICS ENGINEER
REVISIONS


PERMIT DRAWING
SHEET 9 OF 23
NAD 83/2011
BEGIN PROJECT W-03293 (PART 2)
-L- STA 12+00.0
BEGIN CONSTRUCTION SITE 944
END CONSTRUCTION
SITE 944
-L944- STA 18+50.00
SITE 8B
SITE 8A
TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MARION ST. SUITE 200
SHELBY, NC 28150
PH: 704.487.7055
CORP. LICENSE NO: C-0275
PROJECT REFERENCE NO.
DF1831/07505/W03293
SHEET NO.
8
ROADWAY DESIGN ENGINEER
R/W SHEET NO.
HYDRAULICS ENGINEER
REVISIONS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PROJ. REFERENCE NO.
DF18314.1075015_W03293
SHEET NO.
X-7
PERMIT DRAWING
SHEET 10 OF 23
DETAIL
TEMPORARY CAUSEWAY
( Not to Scale)
Restored Slope
Class B
Rip-Rap
Class II
Rip-Rap
1'
2' min.
NWS
N.G.
SITE 8A
NOTES
1. LIMIT TOTAL STREAMFLOW BLOCKAGE FROM TEMP. CAUSEWAY TO NO MORE THAN 50%.
SAWCUT PAVEMENT AT CENTERLINE AND REPLACE PER PLAN
MATCH EXIST.
1437.50
ROCK EMBANKMENT
1.25:1
TEMPORARY CAUSEWAY
MICROPILE KNEE WALL
1.5:1
15+00.00
-L944-
1510
1500
1490
1480
1470
1460
1450
1440
1430
1420
1410
1400
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
6/23/16
10/30/2025
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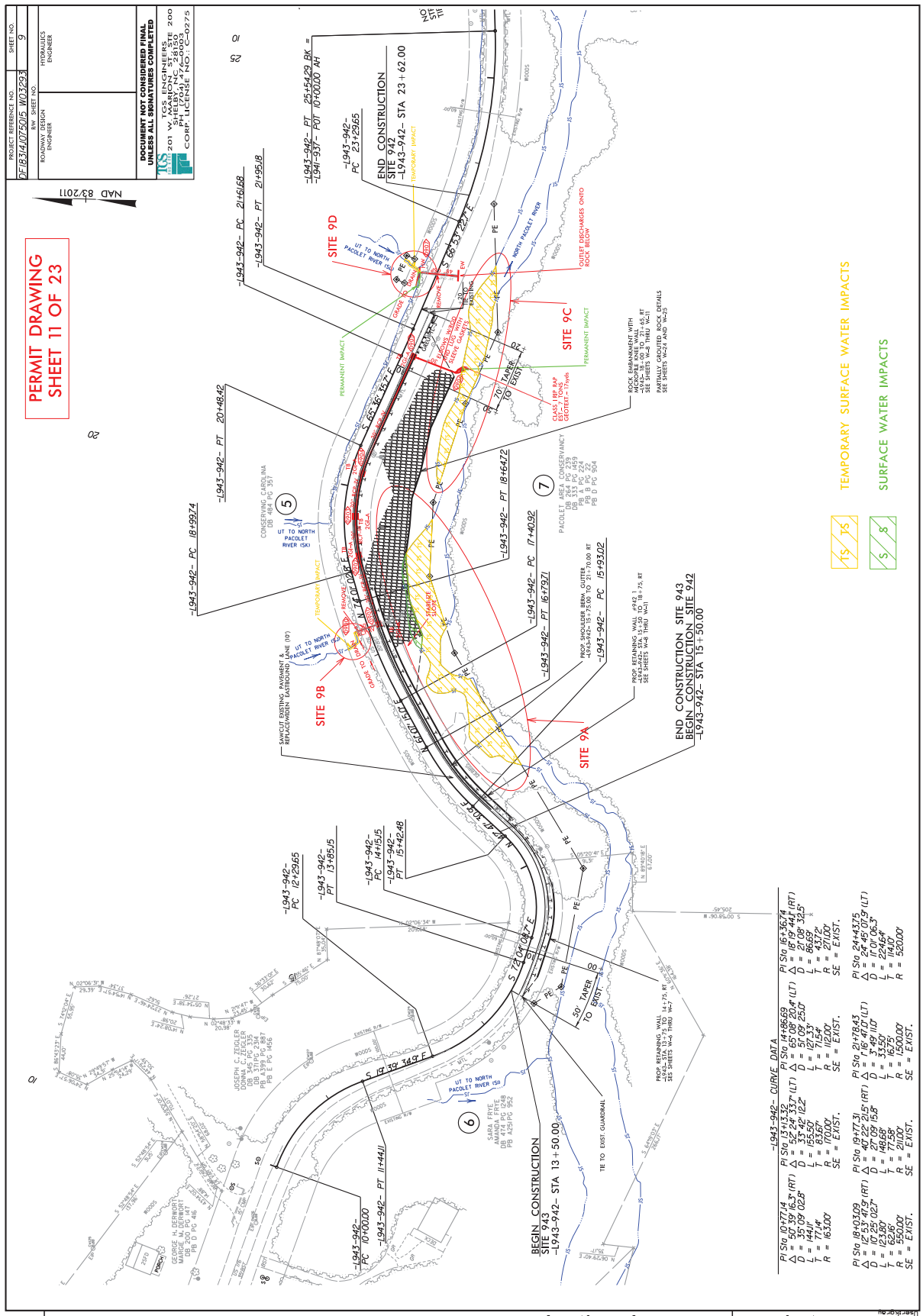
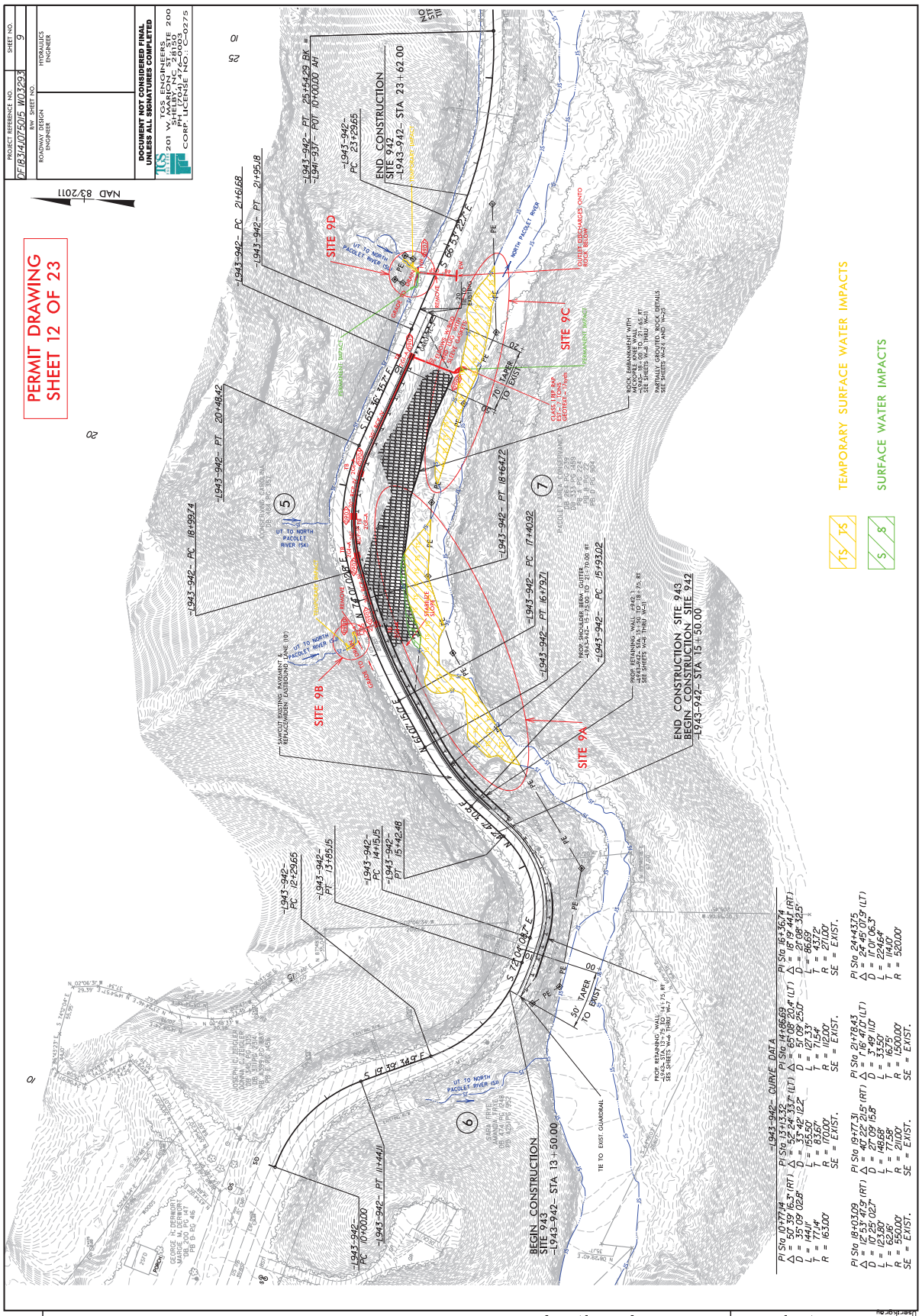
User:jrdavis

P-25

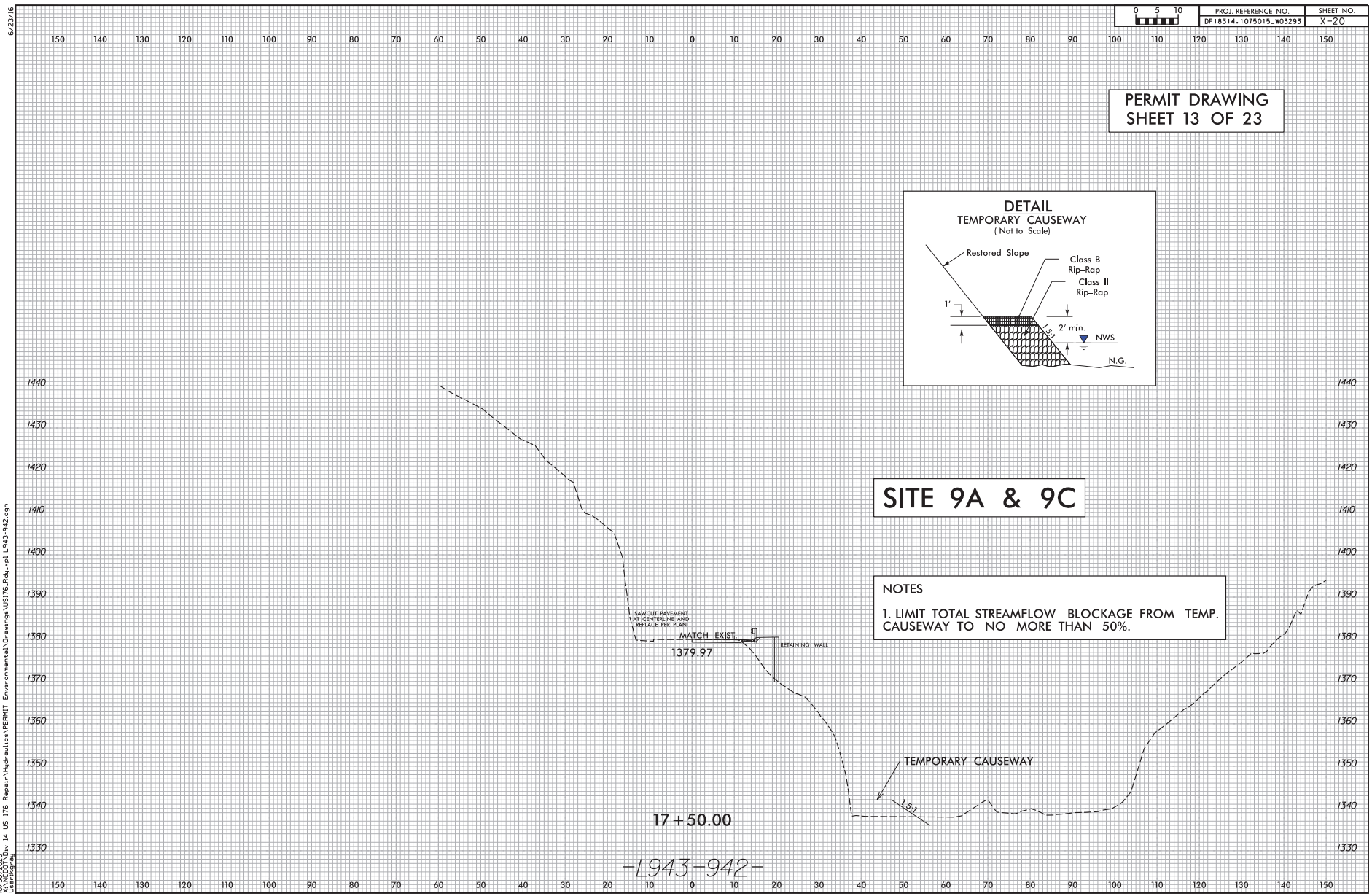

PERMIT DRAWING
SHEET 11 OF 23
NAD 83/2011
SITE 9D
SITE 9C
SITE 9B
SITE 9A
BEGIN CONSTRUCTION SITE 943
-L943-942- STA 13+50.00
END CONSTRUCTION SITE 943
BEGIN CONSTRUCTION SITE 942
-L943-942- STA 15+50.00
END CONSTRUCTION SITE 942
-L943-942- STA 23+62.00
TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MARION ST. SUITE 200
SHELBY, NC 28150
PH: 704.487.1200
CORP. LICENSE NO: C-0275
PROJECT REFERENCE NO. B-5314/0750/5 W03293
SHEET NO. 9
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
REVISIONS


PERMIT DRAWING
SHEET 12 OF 23
NAD 83/2011
PROJECT REFERENCE NO. DF/8314/0750/5 W03293
SHEET NO. 9
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MAGNOLIA ST. SUITE 200
SHELBY, NC 28150
PHONE 704.487.1600
CORP. LICENSE NO. C-0275
BEGIN CONSTRUCTION SITE 943 -1943-942- STA 13+50.00
END CONSTRUCTION SITE 942 -1943-942- STA 23+62.00
END CONSTRUCTION SITE 943 BEGIN CONSTRUCTION SITE 942 -1943-942- STA 15+50.00
SITE 9A
SITE 9B
SITE 9C
SITE 9D
TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS
REVISIONS

| 0 5 10 | PROJ. REFERENCE NO. | SHEET NO. |
|---|---|---|
| | DF18314.1075015_W03293 | X-20 |

PERMIT DRAWING
SHEET 13 OF 23




NOTES

1. LIMIT TOTAL STREAMFLOW BLOCKAGE FROM TEMP. CAUSEWAY TO NO MORE THAN 50%.

P-28

6/23/16
10/30/2025
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User:jpatel
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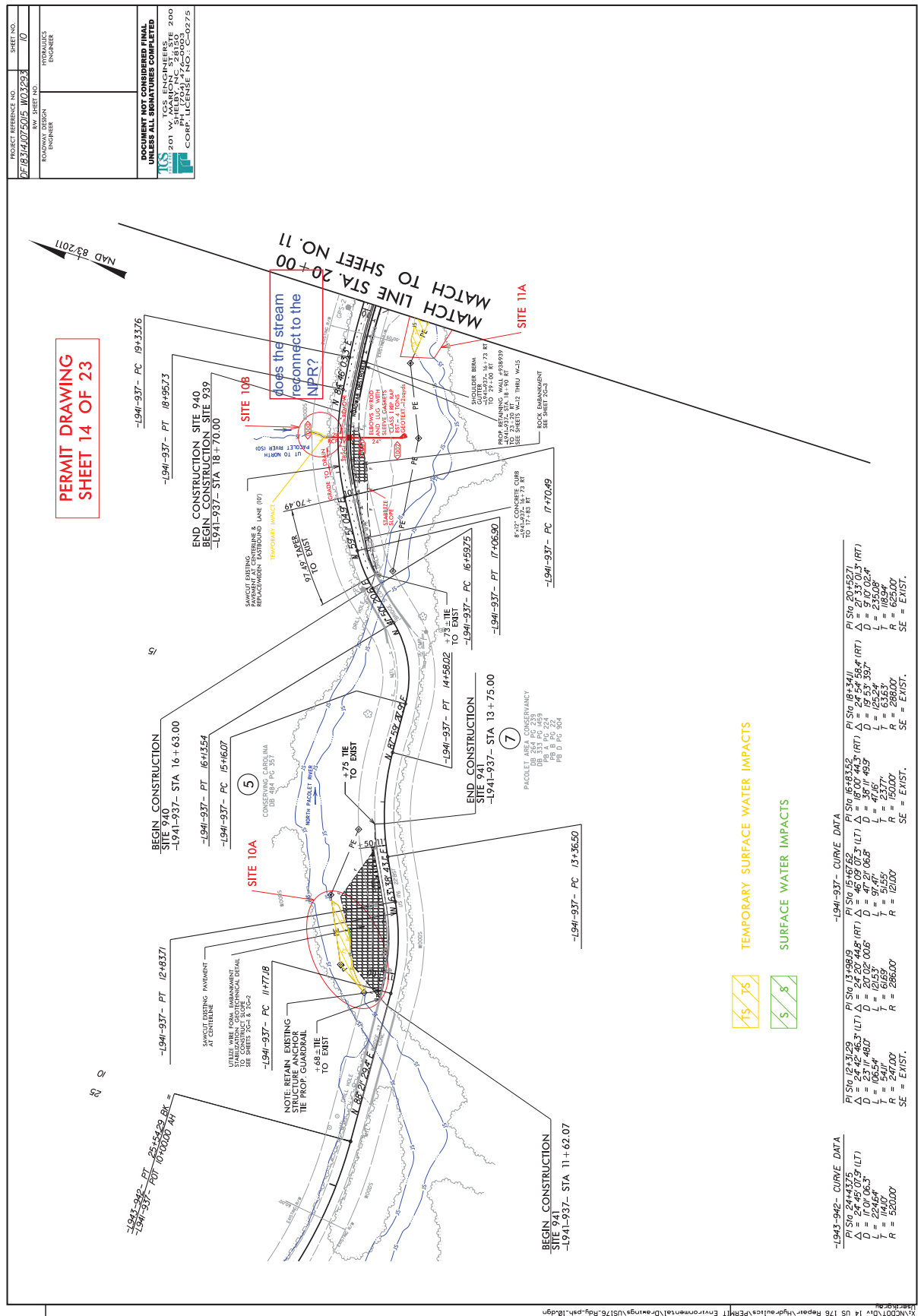


REVISIONS

10/7/2025
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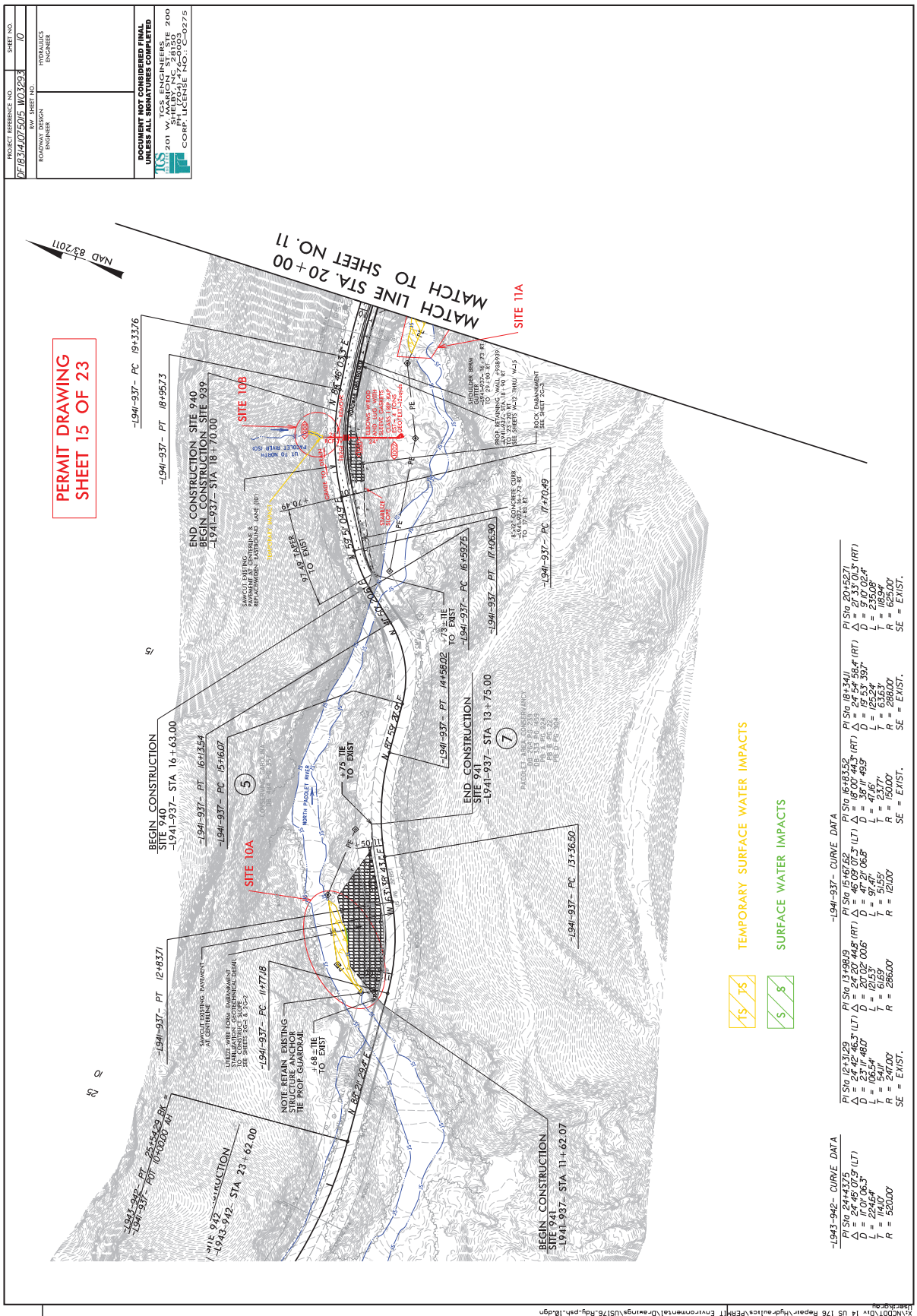
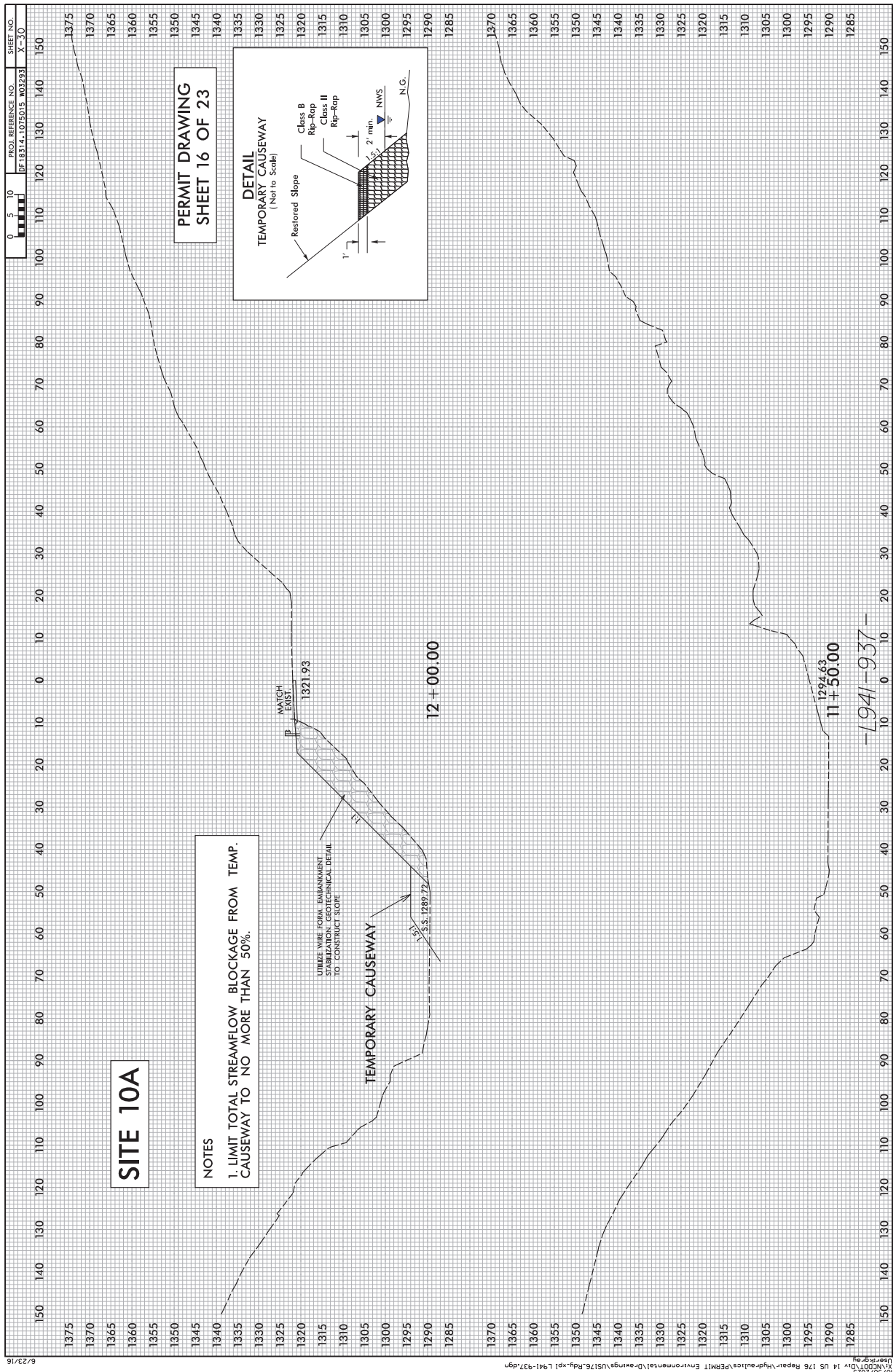

PERMIT DRAWING
SHEET 15 OF 23
NAD 83/2011
MATCH LINE STA. 20+00
MATCH TO SHEET NO. 11
SITE 11A
SITE 10B
SITE 10A
BEGIN CONSTRUCTION
SITE 940
-L941-937- STA 16+63.00
END CONSTRUCTION SITE 940
BEGIN CONSTRUCTION SITE 939
-L941-937- STA 18+70.00
END CONSTRUCTION
SITE 941
-L941-937- STA 13+75.00
BEGIN CONSTRUCTION
SITE 941
-L941-937- STA 11+62.07
-L941-937- PC 13+36.50
-L941-937- PT 12+83.71
-L941-937- PC 11+77.18
-L941-937- PT 16+13.54
-L941-937- PC 15+16.07
-L941-937- PC 19+33.76
-L941-937- PT 18+95.73
-L941-937- PT 17+06.90
-L941-937- PC 16+59.75
-L941-937- PT 14+58.02
-L941-937- PC 17+70.49
-L943-942- PT 25+54.29 BK =
-L941-937- POT 10+00.00 AH =
-L943-942- CONSTRUCTION
SITE 942
-L943-942- STA 23+62.00
TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS
-L943-942- CURVE DATA
-L941-937- CURVE DATA
REVISIONS
PROJECT REFERENCE NO. 8.1407505 WO3293
SHEET NO. 10
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MARION ST. SUITE 200
SHELBY, NC 28150
PHONE 704.487.1500
CORP. LICENSE NO: C-0275


SHEET NO.
X-30
PROJ. REFERENCE NO.
DF-18314.1075015 W03293
0 5 10
PERMIT DRAWING
SHEET 16 OF 23
DETAIL
TEMPORARY CAUSEWAY
(Not to Scale)
Restored Slope
Class B
Rip-Rap
Class II
Rip-Rap
2' min.
NWS
N.G.
1'
1.5:1
SITE 10A
NOTES
1. LIMIT TOTAL STREAMFLOW BLOCKAGE FROM TEMP. CAUSEWAY TO NO MORE THAN 50%.
MATCH EXIST.
1321.93
UTILIZE WIRE FORM EMBANKMENT STABILIZATION GEOTECHNICAL DETAIL TO CONSTRUCT SLOPE
TEMPORARY CAUSEWAY
1.5:1
S.S. 1289.72
12+00.00
1294.63
11+50.00
-L941-937-
6/23/16
10/30/2025
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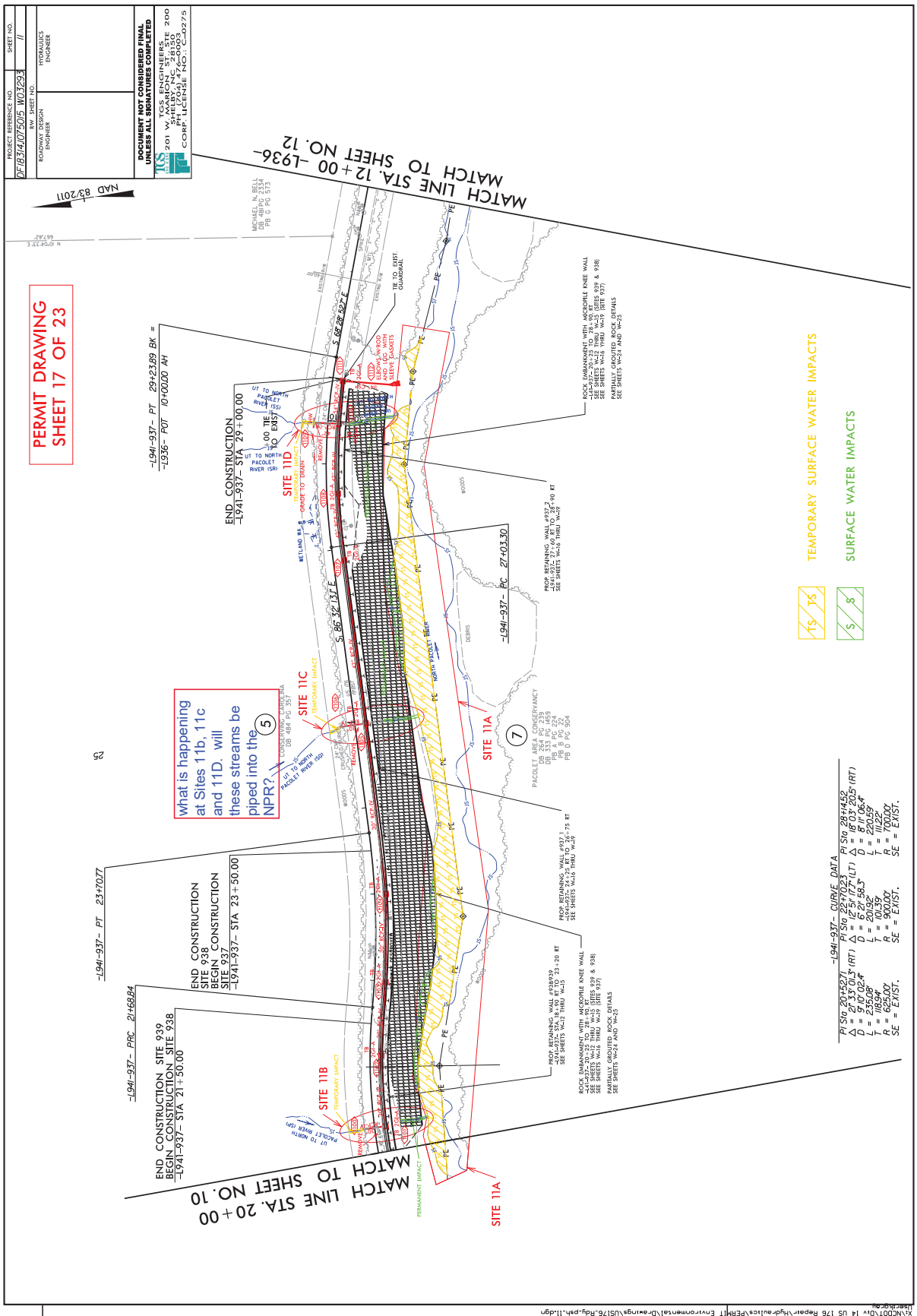
PERMIT DRAWING
SHEET 17 OF 23
MATCH LINE STA. 12+00 -L936-
MATCH TO SHEET NO. 12
MATCH LINE STA. 20+00
MATCH TO SHEET NO. 10
-L941-937- PT 29+23.89 BK =
-L936- POT 10+00.00 AH
END CONSTRUCTION
-L941-937- STA 29+00.00
-L941-937- PT 23+70.77
END CONSTRUCTION SITE 938
BEGIN CONSTRUCTION SITE 937
-L941-937- STA 23+50.00
-L941-937- PRC 21+68.84
END CONSTRUCTION SITE 939
BEGIN CONSTRUCTION SITE 938
-L941-937- STA 21+50.00
-L941-937- PC 27+03.30
SITE 11A
SITE 11B
SITE 11C
SITE 11D
what is happening at Sites 11b, 11c and 11D. will these streams be piped into the NPR?
TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS
-L941-937- CURVE DATA
PI Sta 20+52.71
Δ = 27°33'01.3" (RT)
D = 9°10'02.4"
L = 335.08'
T = 118.94'
R = 625.00'
SE = EXIST.
PI Sta 22+10.23
Δ = 12°51'17.2" (LT)
D = 6°28'58.3"
L = 201.32'
T = 101.39'
R = 900.00'
SE = EXIST.
PI Sta 28+14.52
Δ = 18°03'20.5" (RT)
D = 8°11'06.4"
L = 202.89'
T = 102.22'
R = 700.00'
SE = EXIST.
PROP RETAINING WALL #938#39
-L941-937- STA 18+90 RT TO 23+20 RT
SEE SHEETS W-12 THRU W-15
PROP RETAINING WALL #937.1
-L941-937- STA 24+25 RT TO 26+75 RT
SEE SHEETS W-16 THRU W-19
PROP RETAINING WALL #937.2
-L941-937- STA 27+90 RT
SEE SHEETS W-16 THRU W-19
ROCK EMBANKMENT WITH MICROPILE KNEE WALL
-L941-937- STA 18+90 RT TO 23+20 RT
SEE SHEETS W-12 THRU W-15 (SITES 939 & 938)
SEE SHEETS W-16 THRU W-19 (SITE 937)
PARTIALLY GROUTED ROCK DETAILS
SEE SHEETS W-24 AND W-25
PACOLET AREA CONSERVANCY
DB 533 PG 376
DB 533 PG 459
PB A PG 224
PB B PG 222
PB D PG 904
CONSERVING CAROLINA
DB 484 PG 357
MICHAEL N. BELL
DB 481 PG 2514
PB D PG 573
NAD 83/2011
PROJECT REFERENCE NO.
DF/8314/07505 W03293
SHEET NO.
11
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MARION STREET, SUITE 200
SHELBY, NC 28150
PHONE: 704.487.2000
CORP. LICENSE NO.: C-0275
REVISIONS
10/20/2025
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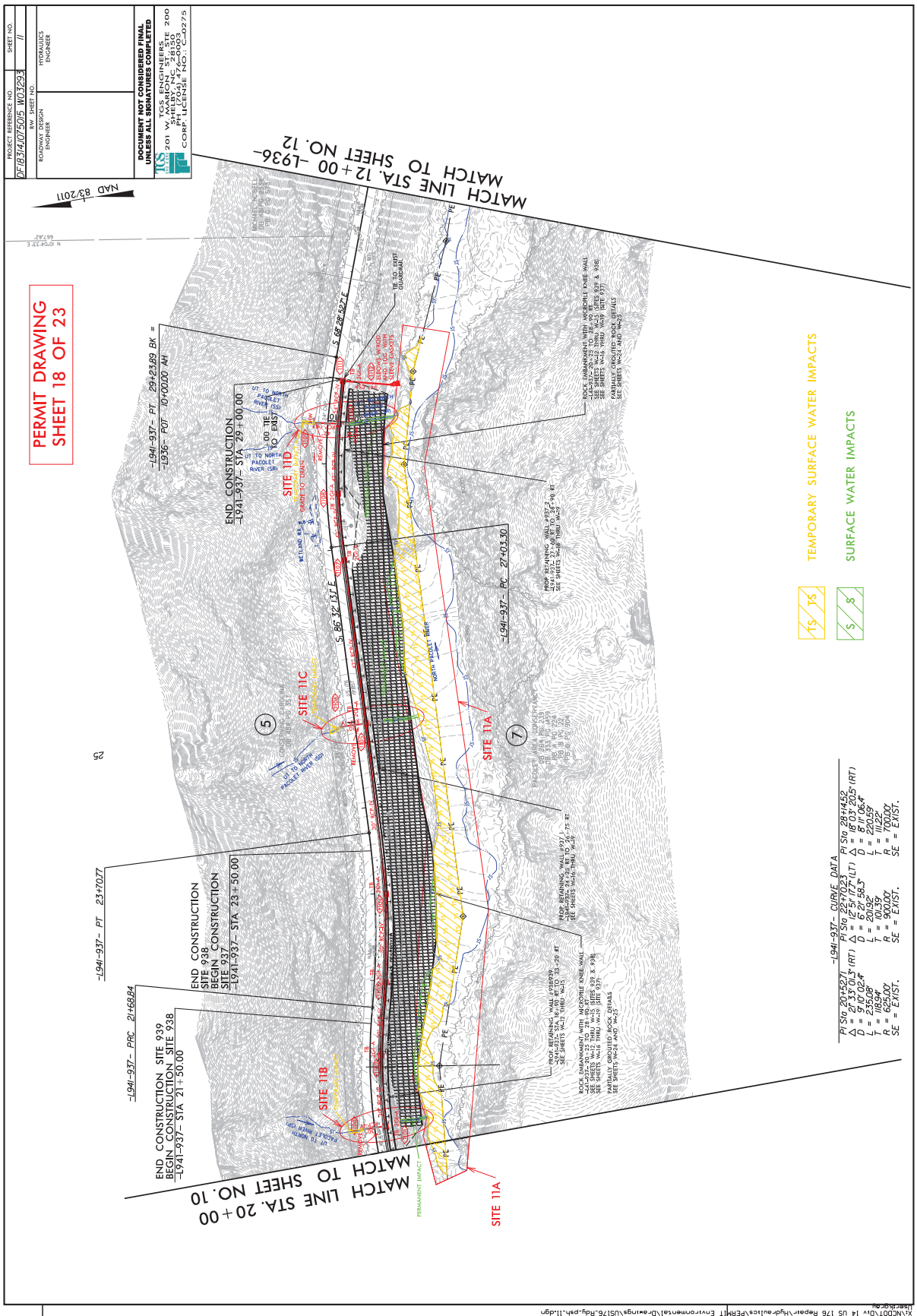
PERMIT DRAWING
SHEET 18 OF 23
MATCH LINE STA. 12+00 -L936-
MATCH TO SHEET NO. 12
MATCH LINE STA. 20+00
MATCH TO SHEET NO. 10
END CONSTRUCTION
-L941-937- STA 29+00.00
-L941-937- PT 29+23.89 BK =
-L936- POT 10+00.00 AH
END CONSTRUCTION
SITE 938
BEGIN CONSTRUCTION
SITE 937
-L941-937- STA 23+50.00
-L941-937- PT 23+70.77
END CONSTRUCTION SITE 939
BEGIN CONSTRUCTION SITE 938
-L941-937- STA 21+50.00
-L941-937- PRC 21+68.84
SITE 11D
SITE 11C
SITE 11B
SITE 11A
TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS
-L941-937- CURVE DATA
PI Sta 20+52.71
Δ = 27°33'01.3" (RT)
D = 9°10'02.4"
L = 315.08'
T = 118.94'
R = 625.00'
SE = EXIST.
PI Sta 22+70.23
Δ = 12°51'17.2" (LT)
D = 6°28'58.3"
L = 201.39'
T = 101.39'
R = 900.00'
SE = EXIST.
PI Sta 28+14.52
Δ = 18°03'20.5" (RT)
D = 8°10'06.4"
L = 202.89'
T = 102.22'
R = 700.00'
SE = EXIST.
REVISIONS
10/20/2025
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| 0 5 10 | PROJ. REFERENCE NO. | SHEET NO. |
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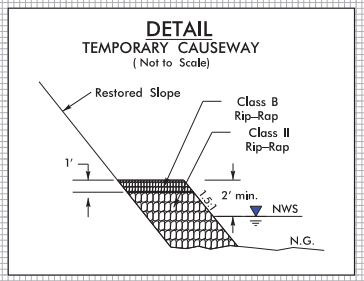
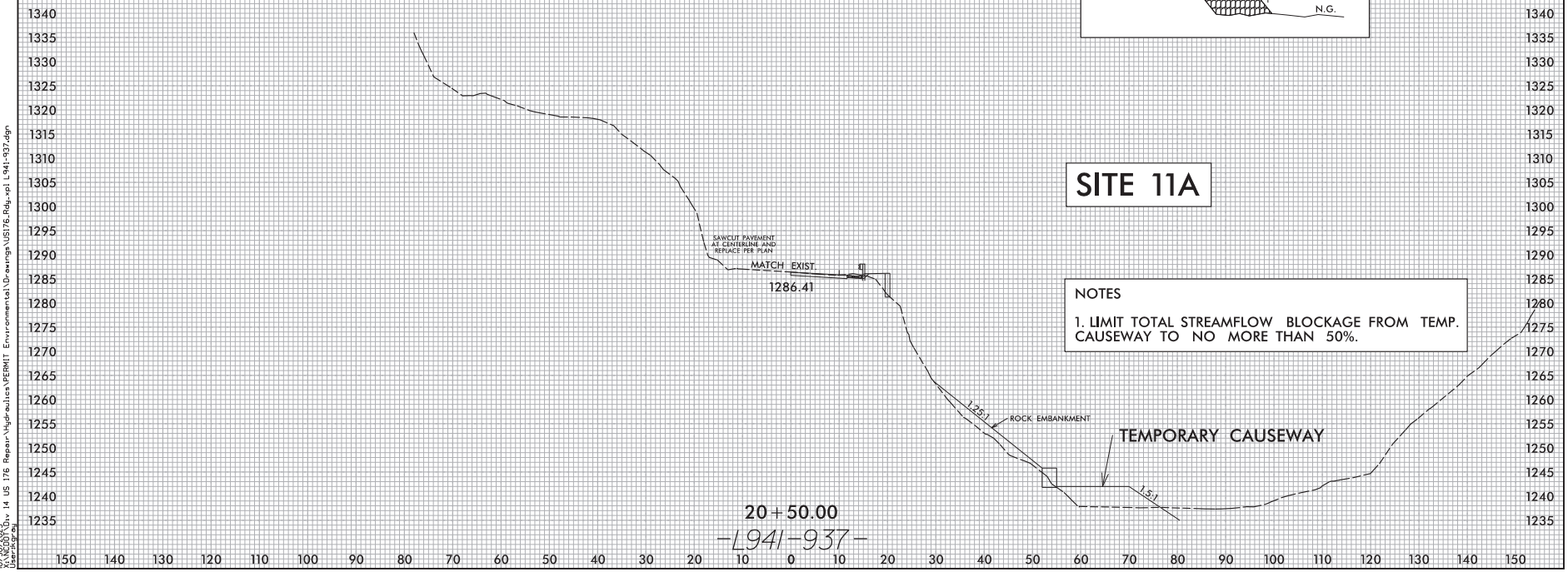
| | DF18314.1075015 W03293 | X-43 |

PERMIT DRAWING
SHEET 19 OF 23




# SITE 11A

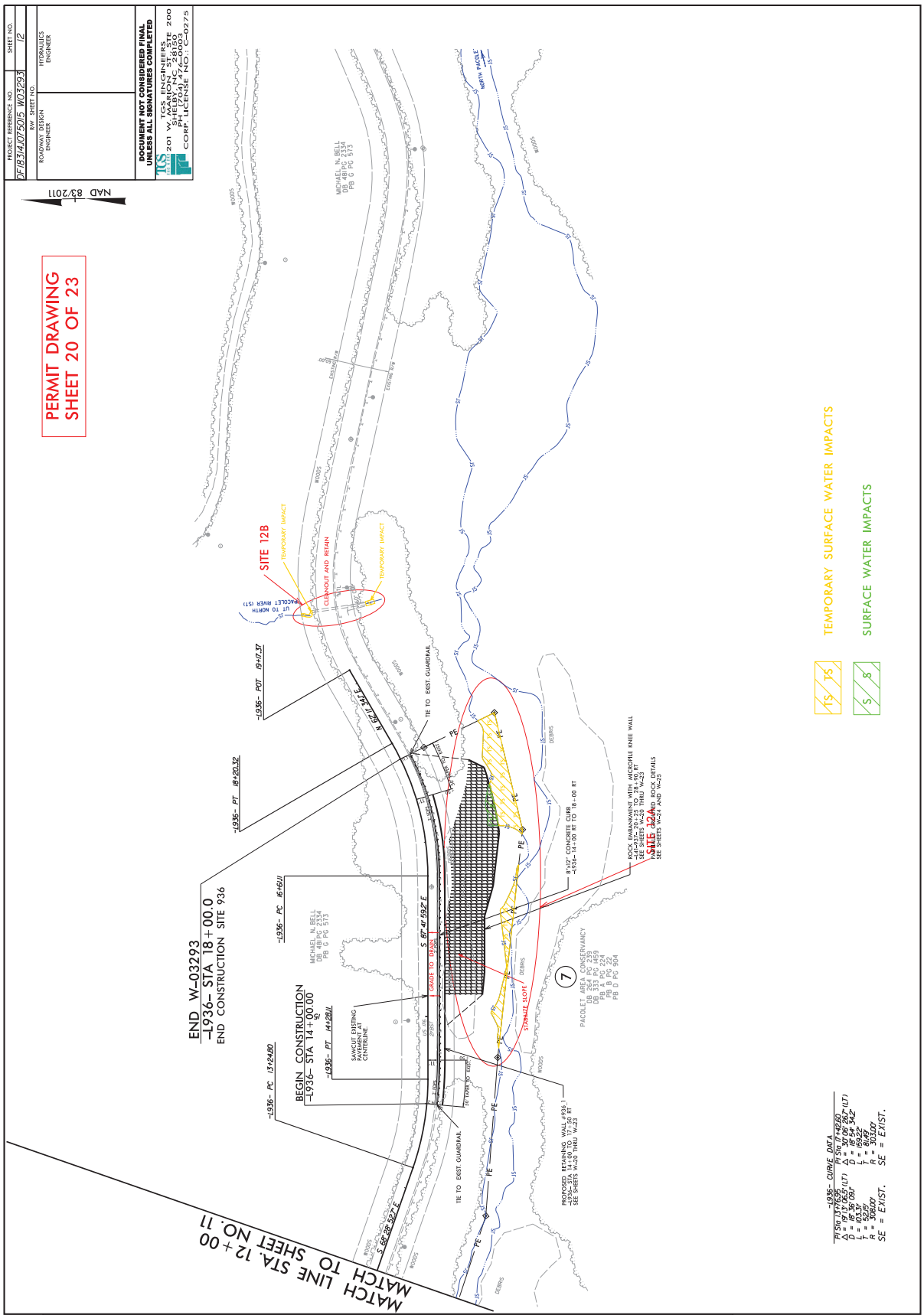



NOTES

1. LIMIT TOTAL STREAMFLOW BLOCKAGE FROM TEMP. CAUSEWAY TO NO MORE THAN 50%.

6/23/16

10/30/2025
Div 14 US 176 Repair\Hydraulics\PERMIT Environmental\Drawings\US176_Rdy_xpl L941-937.dgn


PERMIT DRAWING
SHEET 20 OF 23
NAD 83/2011
PROJECT REFERENCE NO. DF/8314/07505 W03293
SHEET NO. 12
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MARION ST. SUITE 200
SHELBY, NC 28150
PH: (704) 477-7005
CORP. LICENSE NO: C-0275
END W-03293
-L936- STA 18+00.0
END CONSTRUCTION SITE 936
BEGIN CONSTRUCTION
-L936- STA 14+00.00
SITE 12B
SITE 12A
TEMPORARY IMPACT
CLEANOUT AND REPAIN
PACOLET NWEIR (S1)
LT TO NORTH
-L936- PC 13+24.80
-L936- PT 14+28.11
-L936- PC 16+61.11
-L936- PT 18+20.32
-L936- POT 19+17.37
TIE TO EXIST GUARDRAIL
PROPOSED RETAINING WALL #936.1
-L936- STA 14+00.10 TO 17+58
SEE SHEETS W-21 AND W-21
ROCK EMBANKMENT WITH MICROPILE KNEE WALL
-L936- STA 16+91.25 TO 18+91 RT
-L1936- STA 10+00 TO 11+45 RT
SEE SHEETS W-24 AND W-25
PACOLET AREA CONSERVANCY
DB 3741 PG 459
DB 3741 PG 459
PB A PG 224
PB B PG 22
PB D PG 904
MICHAEL N. BELL
DB 4812 PG 2334
PB G PG 573
NORTH PACOLET
TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS
MATCH LINE STA. 12+00
MATCH TO SHEET NO. 11
REVISIONS
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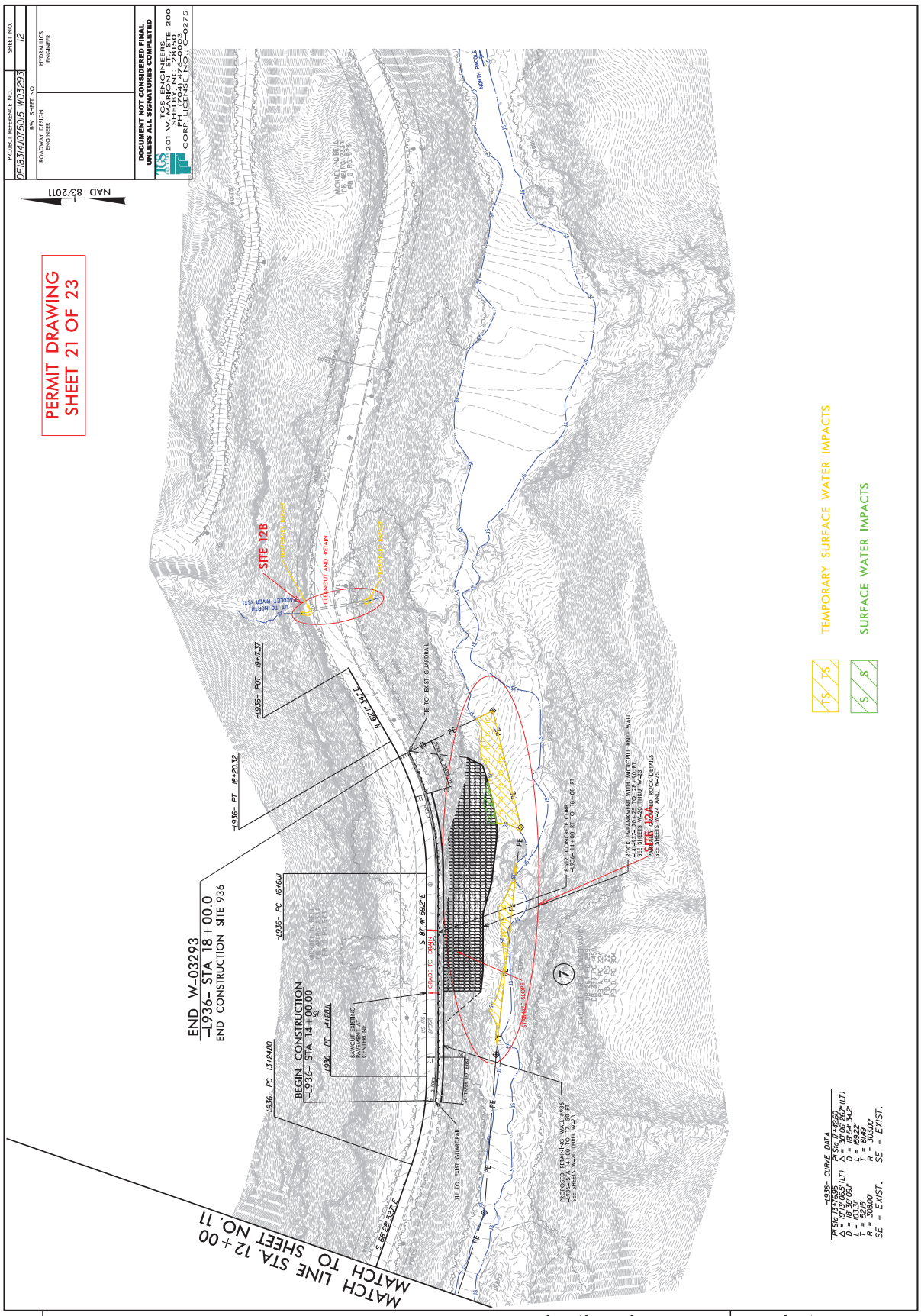
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SHEET 21 OF 23
NAD 83/2011
PROJECT REFERENCE NO.
DF8314/07505 W03293
SHEET NO.
12
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
201 W. MARION ST. SUITE 200
SHELBY, NC 28150
PH: 704.487.1700
CORP. LICENSE NO. C-0275
END W-03293
-L936- STA 18+00.0
END CONSTRUCTION SITE 936
BEGIN CONSTRUCTION
-L936- STA 14+00.00
-L936- PC 13+24.80
-L936- PT 14+28.11
-L936- PC 16+61.11
-L936- PT 16+20.32
-L936- POT 19+17.37
MATCH LINE STA. 12+00
MATCH TO SHEET NO. 11
SITE 12B
SITE 12A
TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS
REVISIONS
X:\NCDOT\Div 14 US 176 Repair\Hydraulics\PERMIT Environmental\Drawings\US176-Rdy-psh-12.dgn

| 0 5 10 | PROJ. REFERENCE NO. | SHEET NO. |
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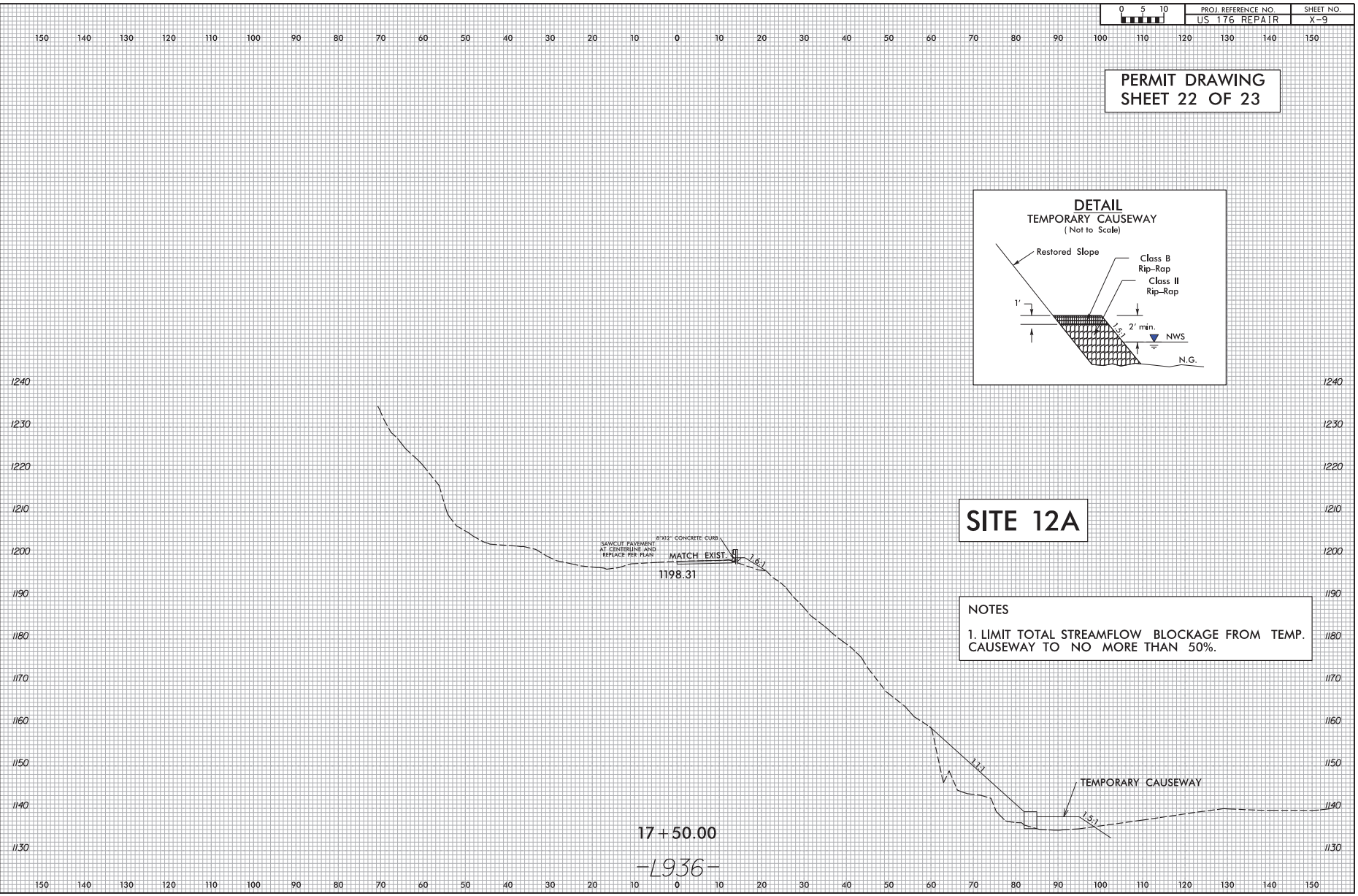
| | US 176 REPAIR | X-9 |

PERMIT DRAWING
SHEET 22 OF 23

## DETAIL
TEMPORARY CAUSEWAY
( Not to Scale)




# SITE 12A




17+50.00

-L936-

NOTES

1. LIMIT TOTAL STREAMFLOW BLOCKAGE FROM TEMP. CAUSEWAY TO NO MORE THAN 50%.

6/23/16

10/30/2025
10:46:20 AM
User: Ray

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## WETLAND AND SURACE WATER IMPACTS SUMMARY

| | | | | | WETLAND IMPACTS | | | | | SURFACE WATER IMPACTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FEMA Site No. | Permit Site No. | Station (From/To) | Structure Size / Type | Stream Name | Permanent Fill In Wetlands (ac) | Temp. Fill In Wetlands (ac) | Excavation in Wetlands (ac) | Mechanized Clearing in Wetlands (ac) | Hand Clearing in Wetlands (ac) | Permanent SW impacts (ac) | Temp. SW impacts (ac) | Existing Channel Impacts Permanent (ft) | Existing Channel Impacts Temp. (ft) | Natural Stream Design (ft) |
| 317 | 5A | -L317- 13+17 to 13+21 LT | Dewatering | UT to NPR (SC) | | | | | | | 0.003 | | 38 | |
| 317 | 5A | -L317- 13+13 to 13+17 LT | Dewatering | UT to NPR (SD) | | | | | | | 0.001 | | 7 | |
| 317 | 5B | -L317- 10+86 to 11+20 RT | Bank Stabilization/Dewatering | UT to NPR (SC) | | | | | | 0.001 | 0.002 | 10 | 26 | |
| 319 | 6A | -L319- 10+09 to 10+11 LT | Dewatering | UT to NPR (SE) | | | | | | | 0.001 | | 12 | |
| 319 | 6B | -L319- 9+70 to 9+81 RT | Bank Stabilization/Dewatering | UT to NPR (SE) | | | | | | 0.001 | 0.001 | 11 | 15 | |
| 319 | 6C | -L319- 17+19 to 17+27 LT | Dewatering | UT to NPR (SG) | | | | | | | 0.003 | | 11 | |
| 321 | 7A | -L320- 19+83 to 19+93 RT | Bank Stabilization/Dewatering | UT to NPR (SH) | | | | | | 0.001 | 0.001 | 8 | 12 | |
| 944 | 8A | -L944- 15+00 to 17+17 RT | Bank Stabilization | North Pacolet River | | | | | | 0.053 | | 161 | | |
| 944 | 8A | -L944- 14+56 to 17+27 RT | Dewatering/Causeway | North Pacolet River | | | | | | | 0.109 | | 222 | |
| 944 | 8B | -L944- 17+23 to 18+15 LT | Dewatering | Bear Creek | | | | | | | 0.034 | | 93 | |
| 942 | 9A | -L943-942- 17+85 to 19+03 RT | Bank Stabilization | North Pacolet River | | | | | | 0.016 | | 102 | | |
| 942 | 9A | -L943-942- 15+84 to 19+63 RT | Dewatering/Causeway | North Pacolet River | | | | | | | 0.171 | | 329 | |
| 942 | 9B | -L943-942- 18+17 to 18+33 LT | Dewatering | UT to NPR (SJ) | | | | | | | 0.002 | | 25 | |
| 942 | 9C | -L943-942- 21+73 to 21+79 RT | Bank Stabilization | North Pacolet River | | | | | | 0.001 | | 7 | | |
| 942 | 9C | -L943-942- 20+43 to 22+99 RT | Dewatering/Causeway | North Pacolet River | | | | | | | 0.098 | | 257 | |
| 942 | 9D | -L943-942- 22+41 to 22+58 LT | Bank Stabilization | UT to NPR (SK) | | | | | | 0.001 | | 17 | | |
| 942 | 9D | -L943-942- 22+58 to 22+66 LT | Dewatering | UT to NPR (SL) | | | | | | | 0.002 | | 23 | |
| 941 | 10A | -L941-937- 12+32 to 12+59 LT | Bank Stabilization | North Pacolet River | | | | | | 0.001 | | 21 | | |
| 941 | 10A | -L941-937- 11+70 to 12+97 LT | Dewatering/Causeway | North Pacolet River | | | | | | | 0.025 | | 115 | |
| 940 | 10B | -L941-937- 18+39 to 18+46 LT | Dewatering | UT to NPR (SO) | | | | | | | 0.001 | | 17 | |
| 939 | 11A | -L941-937- 20+70 to 22+16 RT<br>22+48 to 23+21 RT<br>25+48 to 26+77 RT | Bank Stabilization | North Pacolet River | | | | | | 0.049 | | 356 | | |
| 939 | 11A | -L941-937- 19+56 to 29+24 RT | Dewatering/Causeway | North Pacolet River | | | | | | | 0.422 | | 967 | |
| 939 | 11B | -L941-937- 20+27 to 20+36 LT&RT | Fill/Dewatering | UT to NPR (SP) | | | | | | 0.002 | 0.001 | 31 | 16 | |
| 937 | 11C | -L941-937- 24+90 to 24+99 LT&RT | Fill/Dewatering | UT to NPR (SQ) | | | | | | 0.002 | 0.001 | 30 | 13 | |
| 937 | 11D | -L941-937- 28+44 to 28+63 LT&RT | Fill/Dewatering | UT to NPR (SR) | | | | | | 0.004 | 0.001 | 51 | 14 | |
| 936 | 12A | -L936- 17+06 to 17+44 RT | Bank Stabilization | North Pacolet River | | | | | | 0.009 | | 49 | | |
| 936 | 12A | -L936- 14+64 to 18+00 RT | Dewatering/Causeway | North Pacolet River | | | | | | | 0.099 | | 355 | |
| 936 | 12B | -L936- 19+87 to 19+94 LT&RT | Dewatering | UT to NPR (ST) | | | | | | | 0.002 | | 25 | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| TOTALS: | | | | | **0.000** | **0.000** | **0.000** | **0.000** | **0.000** | **0.141** | **0.980** | **854** | **2592** | **0** |

NOTES:
1. No impacts to Wetland WA.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/30/2025
Polk County
W03293

SHEET 23 OF 23

Revised 2018 Feb

P-38

**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 | 2 ACR | | |
| 0005 | 0057000000-E | 226 | UNDERCUT EXCAVATION | 3,000 CY | | |
| 0006 | 0195000000-E | 265 | SELECT GRANULAR MATERIAL | 3,000 CY | | |
| 0007 | 0196000000-E | 270 | GEOTEXTILE FOR SOIL STABILIZATION | 3,000 SY | | |
| 0008 | 0199000000-E | SP | TEMPORARY SHORING | 2,238 SF | | |
| 0009 | 0220000000-E | SP | ROCK EMBANKMENTS | 9,240 TON | | |
| 0010 | 0222000000-E | SP | GEOTEXTILE FOR ROCK EMBANKMENTS | 3,725 SY | | |
| 0011 | 0223000000-E | 275 | ROCK PLATING | 3,675 SY | | |
| 0012 | 0234000000-E | SP | GENERIC GRADING ITEM BORROW FOR WIRE FORM EMBANKMENT | 4,900 CY | | |
| 0013 | 0241000000-E | SP | GENERIC GRADING ITEM GEOTEXTILE FOR WIRE FORM EMBANKMENT, TYPE 5A | 19,200 SY | | |
| 0014 | 0255000000-E | SP | GENERIC GRADING ITEM SHOT ROCK PLATING | 4,650 TON | | |
| 0015 | 0262000000-N | SP | GENERIC GRADING ITEM WIRE BASKET FORMS | 400 EA | | |
| 0016 | 0318000000-E | 300 | FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES | 245.5 TON | | |
| 0017 | 0321000000-E | 300 | FOUNDATION CONDITIONING GEOTEXTILE | 772 SY | | |

**County:** **POLK**

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|---|---|---|---|---|---|---|
| 0018 | 0448000000-E | 310 | ****" RC PIPE CULVERTS, CLASS IV (54") | 48 LF | | |
| 0019 | 0448200000-E | 310 | 15" RC PIPE CULVERTS, CLASS IV | 140 LF | | |
| 0020 | 0448400000-E | 310 | 24" RC PIPE CULVERTS, CLASS IV | 272 LF | | |
| 0021 | 0448500000-E | 310 | 30" RC PIPE CULVERTS, CLASS IV | 844 LF | | |
| 0022 | 0448700000-E | 310 | 42" RC PIPE CULVERTS, CLASS IV | 372 LF | | |
| 0023 | 0576000000-E | 310 | **" CS PIPE CULVERTS, *****" THICK (48", 0.109") | 44 LF | | |
| 0024 | 0576000000-E | 310 | **" CS PIPE CULVERTS, *****" THICK (54", 0.109") | 56 LF | | |
| 0025 | 0582000000-E | 310 | 15" CS PIPE CULVERTS, 0.064" THICK | 48 LF | | |
| 0026 | 0588000000-E | 310 | 18" CS PIPE CULVERTS, 0.064" THICK | 132 LF | | |
| 0027 | 0594000000-E | 310 | 24" CS PIPE CULVERTS, 0.064" THICK | 308 LF | | |
| 0028 | 0600000000-E | 310 | 30" CS PIPE CULVERTS, 0.079" THICK | 52 LF | | |
| 0029 | 0636000000-E | 310 | **" CS PIPE ELBOWS, *****" THICK (15", 0.064") | 2 EA | | |
| 0030 | 0636000000-E | 310 | **" CS PIPE ELBOWS, *****" THICK (24", 0.064") | 8 EA | | |
| 0031 | 0636000000-E | 310 | **" CS PIPE ELBOWS, *****" THICK (30", 0.079") | 2 EA | | |
| 0032 | 0636000000-E | 310 | **" CS PIPE ELBOWS, *****" THICK (54", 0.109") | 2 EA | | |
| 0033 | 0995000000-E | 340 | PIPE REMOVAL | 566 LF | | |
| 0034 | 0996000000-N | 350 | PIPE CLEAN OUT | 1 EA | | |

**County: POLK**

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|---|---|---|---|---|---|---|
| 0035 | 1099500000-E | 505 | SHALLOW UNDERCUT | 750 CY | | |
| 0036 | 1099700000-E | 505 | CLASS IV SUBGRADE STABILIZATION | 1,500 TON | | |
| 0037 | 1112000000-E | 505 | GEOTEXTILE FOR SUBGRADE STABILIZATION | 2,250 SY | | |
| 0038 | 1220000000-E | 545 | INCIDENTAL STONE BASE | 750 TON | | |
| 0039 | 1245000000-E | SP | SHOULDER RECONSTRUCTION | 0.1 SMI | | |
| 0040 | 1260000000-E | SP | AGGREGATE SHOULDER BORROW | 10 TON | | |
| 0041 | 1297000000-E | 607 | MILLING ASPHALT PAVEMENT, ***" DEPTH (1-1/2") | 850 SY | | |
| 0042 | 1330000000-E | 607 | INCIDENTAL MILLING | 1,500 SY | | |
| 0043 | 1491000000-E | 610 | ASPHALT CONC BASE COURSE, TYPE B25.0C | 2,370 TON | | |
| 0044 | 1523000000-E | 610 | ASPHALT CONC SURFACE COURSE, TYPE S9.5C | 1,490 TON | | |
| 0045 | 1575000000-E | 620 | ASPHALT BINDER FOR PLANT MIX | 235 TON | | |
| 0046 | 1693000000-E | 654 | ASPHALT PLANT MIX, PAVEMENT REPAIR | 180 TON | | |
| 0047 | 2022000000-E | 815 | SUBDRAIN EXCAVATION | 336 CY | | |
| 0048 | 2026000000-E | 815 | GEOTEXTILE FOR SUBSURFACE DRAINS | 1,500 SY | | |
| 0049 | 2036000000-E | 815 | SUBDRAIN COARSE AGGREGATE | 252 CY | | |
| 0050 | 2044000000-E | 815 | 6" PERFORATED SUBDRAIN PIPE | 1,500 LF | | |
| 0051 | 2070000000-N | 815 | SUBDRAIN PIPE OUTLET | 4 EA | | |

**County:** **POLK**

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|---|---|---|---|---|---|---|
| 0052 | 2077000000-E | 815 | 6" OUTLET PIPE | 24 LF | | |
| 0053 | 2209000000-E | 838 | ENDWALLS | 9.8 CY | | |
| 0054 | 2275000000-E | SP | FLOWABLE FILL | 3 CY | | |
| 0055 | 2286000000-N | 840 | MASONRY DRAINAGE STRUCTURES | 21 EA | | |
| 0056 | 2297000000-E | 840 | MASONRY DRAINAGE STRUCTURES | 12.1 CY | | |
| 0057 | 2308000000-E | 840 | MASONRY DRAINAGE STRUCTURES | 8.2 LF | | |
| 0058 | 2367000000-N | 840 | FRAME WITH TWO GRATES, STD 840.29 | 5 EA | | |
| 0059 | 2407000000-N | 840 | STEEL FRAME WITH TWO GRATES, STD 840.37 | 18 EA | | |
| 0060 | 2535000000-E | 846 | **" X **" CONCRETE CURB (8" X 12") | 545 LF | | |
| 0061 | 2556000000-E | 846 | SHOULDER BERM GUTTER | 3,180 LF | | |
| 0062 | 2619000000-E | 850 | 4" CONCRETE PAVED DITCH | 70 SY | | |
| 0063 | 3030000000-E | 862 | STEEL BEAM GUARDRAIL | 4,675 LF | | |
| 0064 | 3150000000-N | 862 | ADDITIONAL GUARDRAIL POSTS | 30 EA | | |
| 0065 | 3287000000-N | 862 | GUARDRAIL END UNITS, TYPE TL-3 | 7 EA | | |
| 0066 | 3345000000-E | 864 | REMOVE & RESET EXISTING GUARDRAIL | 100 LF | | |
| 0067 | 3360000000-E | 863 | REMOVE EXISTING GUARDRAIL | 3,061 LF | | |
| 0068 | 3628000000-E | 876 | RIP RAP, CLASS I | 114 TON | | |

**County: POLK**

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|---|---|---|---|---|---|---|
| 0069 | 3656000000-E | 876 | GEOTEXTILE FOR DRAINAGE | 1,781 SY | | |
| 0070 | 4072000000-E | 903 | SUPPORTS, 3-LB STEEL U-CHANNEL | 227 LF | | |
| 0071 | 4102000000-N | 904 | SIGN ERECTION, TYPE E | 16 EA | | |
| 0072 | 4108000000-N | 904 | SIGN ERECTION, TYPE F | 1 EA | | |
| 0073 | 4116100000-N | 904 | SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (E) | 2 EA | | |
| 0074 | 4155000000-N | 907 | DISPOSAL OF SIGN SYSTEM, U-CHANNEL | 12 EA | | |
| 0075 | 4192000000-N | 907 | DISPOSAL OF SUPPORT, U-CHANNEL | 2 EA | | |
| 0076 | 4238000000-N | 907 | DISPOSAL OF SIGN, D, E OR F | 2 EA | | |
| 0077 | 4400000000-E | 1110 | WORK ZONE SIGNS (STATIONARY) | 1,062 SF | | |
| 0078 | 4405000000-E | 1110 | WORK ZONE SIGNS (PORTABLE) | 472 SF | | |
| 0079 | 4410000000-E | 1110 | WORK ZONE SIGNS (BARRICADE MOUNTED) | 210 SF | | |
| 0080 | 4420000000-N | 1120 | PORTABLE CHANGEABLE MESSAGE SIGN | 3 EA | | |
| 0081 | 4424500000-N | SP | TEMPORARY PORTABLE TRAFFIC SIGNAL SYSTEM | 5 EA | | |
| 0082 | 4430000000-N | 1130 | DRUMS | 203 EA | | |
| 0083 | 4435000000-N | 1135 | CONES | 70 EA | | |
| 0084 | 4445000000-E | 1145 | BARRICADES (TYPE III) | 216 LF | | |
| 0085 | 4455000000-N | 1150 | FLAGGER | 84 DAY | | |

**County: POLK**

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|---|---|---|---|---|---|---|
| 0086 | 4465000000-N | 1160 | TEMPORARY CRASH CUSHIONS | 12 EA | | |
| 0087 | 4470000000-N | 1160 | REMOVE & RESET TEMPORARY CRASH CUSHION | 4 EA | | |
| 0088 | 4485000000-E | 1170 | PORTABLE CONCRETE BARRIER | 2,270 LF | | |
| 0089 | 4490000000-E | 1170 | PORTABLE CONCRETE BARRIER (ANCHORED) | 220 LF | | |
| 0090 | 4500000000-E | 1170 | REMOVE AND RESET PORTABLE CONCRETE BARRIER | 410 LF | | |
| 0091 | 4505000000-E | 1170 | REMOVE & RESET PORTABLE CONCRETE BARRIER (ANCHORED) | 220 LF | | |
| 0092 | 4516000000-N | 1180 | SKINNY DRUM | 35 EA | | |
| 0093 | 4685000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS) | 20,782 LF | | |
| 0094 | 4770000000-E | 1205 | COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (IV) | 820 LF | | |
| 0095 | 4810000000-E | 1205 | PAINT PAVEMENT MARKING LINES (4") | 16,076 LF | | |
| 0096 | 4835000000-E | 1205 | PAINT PAVEMENT MARKING LINES (24") | 132 LF | | |
| 0097 | 4850000000-E | 1205 | REMOVAL OF PAVEMENT MARKING LINES (4") | 2,810 LF | | |
| 0098 | 4870000000-E | 1205 | REMOVAL OF PAVEMENT MARKING LINES (24") | 132 LF | | |
| 0099 | 4895000000-N | SP | GENERIC PAVEMENT MARKING ITEM POLYCARBONATE H-SHAPED MARKERS | 178 EA | | |
| 0100 | 5888000000-E | SP | GENERIC UTILITY ITEM INSTALL CONDUIT (6") | 4,000 LF | | |
| 0101 | 6000000000-E | 1605 | TEMPORARY SILT FENCE | 3,660 LF | | |
| 0102 | 6006000000-E | 1610 | STONE FOR EROSION CONTROL, CLASS A | 805 TON | | |

**County: POLK**

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|---|---|---|---|---|---|---|
| 0103 | 6009000000-E | 1610 | STONE FOR EROSION CONTROL, CLASS B | 1,100 TON | | |
| 0104 | 6012000000-E | 1610 | SEDIMENT CONTROL STONE | 630 TON | | |
| 0105 | 6015000000-E | 1615 | TEMPORARY MULCHING | 8.5 ACR | | |
| 0106 | 6018000000-E | 1620 | SEED FOR TEMPORARY SEEDING | 590 LB | | |
| 0107 | 6021000000-E | 1620 | FERTILIZER FOR TEMPORARY SEEDING | 3 TON | | |
| 0108 | 6024000000-E | 1622 | TEMPORARY SLOPE DRAINS | 390 LF | | |
| 0109 | 6029000000-E | SP | SAFETY FENCE | 4,690 LF | | |
| 0110 | 6030000000-E | 1630 | SILT EXCAVATION | 1,980 CY | | |
| 0111 | 6036000000-E | 1631 | MATTING FOR EROSION CONTROL | 24,560 SY | | |
| 0112 | 6037000000-E | 1629 | COIR FIBER MAT | 350 SY | | |
| 0113 | 6042000000-E | 1632 | 1/4" HARDWARE CLOTH | 1,070 LF | | |
| 0114 | 6070000000-N | 1639 | SPECIAL STILLING BASINS | 23 EA | | |
| 0115 | 6071002000-E | 1642 | FLOCCULANT | 150 LB | | |
| 0116 | 6071012000-E | 1642 | COIR FIBER WATTLE | 60 LF | | |
| 0117 | 6071030000-E | 1640 | COIR FIBER BAFFLE | 95 LF | | |
| 0118 | 6084000000-E | 1660 | SEEDING & MULCHING | 8.5 ACR | | |
| 0119 | 6087000000-E | 1660 | MOWING | 4.25 ACR | | |

**County: POLK**

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|---|---|---|---|---|---|---|
| 0120 | 6090000000-E | 1661 | SEED FOR REPAIR SEEDING | 150 LB | | |
| 0121 | 6093000000-E | 1661 | FERTILIZER FOR REPAIR SEEDING | 0.5 TON | | |
| 0122 | 6096000000-E | 1662 | SEED FOR SUPPLEMENTAL SEEDING | 225 LB | | |
| 0123 | 6108000000-E | 1665 | FERTILIZER TOPDRESSING | 6.5 TON | | |
| 0124 | 6111000000-E | SP | IMPERVIOUS DIKE | 720 LF | | |
| 0125 | 6114500000-N | 1667 | SPECIALIZED HAND MOWING | 20 MHR | | |
| 0126 | 6114800000-N | SP | MANUAL LITTER REMOVAL | 3 MHR | | |
| 0127 | 6114900000-E | SP | LITTER DISPOSAL | 2 TON | | |
| 0128 | 6117000000-N | 1675 | RESPONSE FOR EROSION CONTROL | 50 EA | | |
| 0129 | 6117500000-N | SP | CONCRETE WASHOUT STRUCTURE | 5 EA | | |
| 0130 | 6123000000-E | 1670 | REFORESTATION | 1 ACR | | |
| 0131 | 6132000000-N | SP | GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION CLEANOUT | 105 EA | | |
| 0132 | 6132000000-N | SP | GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION, TYPE 1 | 35 EA | | |
| 0133 | 6132000000-N | SP | GENERIC EROSION CONTROL ITEM PREFABRICATED CONCRETE WASHOUT | 23 EA | | |
| | | | **WALL ITEMS** | | | |
| 0134 | 8802010000-E | SP | SOIL NAIL RETAINING WALLS | 4,210 SF | | |
| 0135 | 8832000000-N | SP | GENERIC RETAINING WALL ITEM RETAINING WALLS, SITE #936 | Lump Sum | L.S. | |

**County: POLK**

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|---|---|---|---|---|---|---|
| 0136 | 8832000000-N | SP | GENERIC RETAINING WALL ITEM<br>RETAINING WALLS, SITE #937 | Lump Sum | L.S. | |
| 0137 | 8832000000-N | SP | GENERIC RETAINING WALL ITEM<br>RETAINING WALLS, SITE #938 | Lump Sum | L.S. | |
| 0138 | 8832000000-N | SP | GENERIC RETAINING WALL ITEM<br>RETAINING WALLS, SITE #939 | Lump Sum | L.S. | |
| 0139 | 8832000000-N | SP | GENERIC RETAINING WALL ITEM<br>RETAINING WALLS, SITE #942 | Lump Sum | L.S. | |
| 0140 | 8832000000-N | SP | GENERIC RETAINING WALL ITEM<br>RETAINING WALLS, SITE #943 | Lump Sum | L.S. | |
| 0141 | 8832000000-N | SP | GENERIC RETAINING WALL ITEM<br>RETAINING WALLS, SITE #944 | Lump Sum | L.S. | |
| 0142 | 8839000000-E | SP | GENERIC RETAINING WALL ITEM<br>MICROPILE GRADE BEAM | 730<br>LF | | |

**1527/Jun16/Q187246.95/D508499854000/E142** **Total Amount Of Bid For Entire Project :**