

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

C204337

CONTRACT AND
CONTRACT BONDS

FOR CONTRACT NO. C204337

WBS 45883.3.GV1 STBGIM-0040(075)

T.I.P NO. I-5940

COUNTY OF DUPLIN, PENDER

THIS IS THE ROADWAY & STRUCTURE CONTRACT

ROUTE NUMBER I 40 LENGTH 29.500 MILES

LOCATION I-40 FROM DUPLIN COUNTY LINE (MM-360) TO WEST OF US-117
(MM-389.5).

CONTRACTOR BARNHILL CONTRACTING CO

ADDRESS P.O. BOX 7948

ROCKY MOUNT, NC 27804

BIDS OPENED AUGUST 20, 2019

CONTRACT EXECUTION 9/18/2019

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

PROPOSAL

INCLUDES ADDENDUM No.1 DATED 8-16-2019

DATE AND TIME OF BID OPENING: **AUGUST 20, 2019 AT 2:00 PM**

CONTRACT ID C204337
WBS 45883.3.GV1

FEDERAL-AID NO. STBGIM-0040(075)
COUNTY DUPLIN, PENDER
T.I.P. NO. I-5940
MILES 29.911
ROUTE NO. I 40
LOCATION I-40 FROM DUPLIN COUNTY LINE (MM-360) TO WEST OF US-117
(MM-389.5).

TYPE OF WORK PAVEMENT AND BRIDGE REHABILITATION.

NOTICE:

ALL BIDDERS SHALL COMPLY WITH ALL APPLICABLE LAWS REGULATING THE PRACTICE OF GENERAL CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA WHICH REQUIRES THE BIDDER TO BE LICENSED BY THE N.C. LICENSING BOARD FOR CONTRACTORS WHEN BIDDING ON ANY NON-FEDERAL AID PROJECT WHERE THE BID IS \$30,000 OR MORE, EXCEPT FOR CERTAIN SPECIALTY WORK AS DETERMINED BY THE LICENSING BOARD. BIDDERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOTWITHSTANDING THESE LIMITATIONS ON BIDDING, THE BIDDER WHO IS AWARDED ANY FEDERAL - AID FUNDED PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING.

BIDS WILL BE RECEIVED AS SHOWN BELOW:

THIS IS A ROADWAY & STRUCTURE PROPOSAL

5% BID BOND OR BID DEPOSIT REQUIRED

**PROPOSAL FOR THE CONSTRUCTION OF
CONTRACT No. C204337 IN DUPLIN AND PENDER COUNTIES, NORTH CAROLINA**

Date _____ 20 _____

**DEPARTMENT OF TRANSPORTATION,
RALEIGH, NORTH CAROLINA**

The Bidder has carefully examined the location of the proposed work to be known as Contract No. C204337 has carefully examined the plans and specifications, which are acknowledged to be part of the proposal, the special provisions, the proposal, the form of contract, and the forms of contract payment bond and contract performance bond; and thoroughly understands the stipulations, requirements and provisions. The undersigned bidder agrees to bound upon his execution of the bid and subsequent award to him by the Board of Transportation in accordance with this proposal to provide the necessary contract payment bond and contract performance bond within fourteen days after the written notice of award is received by him. The undersigned Bidder further agrees to provide all necessary machinery, tools, labor, and other means of construction; and to do all the work and to furnish all materials, except as otherwise noted, necessary to perform and complete the said contract in accordance with *the 2018 Standard Specifications for Roads and Structures* by the dates(s) specified in the Project Special Provisions and in accordance with the requirements of the Engineer, and at the unit or lump sum prices, as the case may be, for the various items given on the sheets contained herein.

The Bidder shall provide and furnish all the materials, machinery, implements, appliances and tools, and perform the work and required labor to construct and complete State Highway Contract No. C204337 in Duplin and Pender Counties, for the unit or lump sum prices, as the case may be, bid by the Bidder in his bid and according to the proposal, plans, and specifications prepared by said Department, which proposal, plans, and specifications show the details covering this project, and hereby become a part of this contract.

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

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

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

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

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



State Contract Officer

DocuSigned by:

Ronald E. Davenport, Jr.

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8/16/2019

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PROJECT SPECIAL PROVISIONS**GENERAL****CONTRACT TIME AND LIQUIDATED DAMAGES:**

(7-20-99) (Rev. 12-18-07)

108

SPI G04

The date of availability for this contract is **September 30, 2019**, 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 **June 1, 2022**.

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 **Three Thousand Dollars (\$ 3,000.00)** per calendar day.

INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES:

(6-18-13) (Rev. 6-26-19)

108

SPI G14 K (Rev.)

On **Maps #1 and #2**, any newly placed ACSC Type S9.5D shall not remain uncovered by OGAFK more than sixty (60) days. The Contractor's progression within these maps, considering this restriction, shall be at his/her discretion.

The date of availability for this intermediate contract time is the date that **ACSC Type S5.9D is placed in any given location within the map**.

The completion date for this intermediate contract time is **the date that is sixty (60) consecutive calendar days after the date of availability**.

The liquidated damages are **Two Thousand Dollars (\$ 2,000.00)** per calendar day.

INTERMEDIATE CONTRACT TIME NUMBER 2 AND LIQUIDATED DAMAGES:

(2-20-07) (Rev. 6-26-19)

108

SPI G14 G (Rev.)

The Contractor shall complete the work required of **milling and resurfacing adjacent lanes and/or ramp areas in the same direction simultaneously (to limit differences in elevation prior to the next day's milling and resurfacing operations)** as shown on **Any Map** and shall place and maintain traffic on same.

The time of availability for this intermediate contract time is the time the Contractor begins the work.

The completion time for this intermediate contract time is the time which is **seventy-two (72)** consecutive hours after the Contractor begins this work.

The liquidated damages are **Two Thousand Dollars (\$ 2,000.00)** per calendar day.

INTERMEDIATE CONTRACT TIME NUMBER 3 AND LIQUIDATED DAMAGES:

(2-20-07)

108

SP1 G14 A

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

DAY AND TIME RESTRICTIONS

MAP NO. 1 (EBL)

Sunday thru Thursday, 6:00 AM to 8:00 AM

Friday & Saturday, No Work Allowed

MAP NO. 2 (WBL)

Monday thru Friday, 6:00 AM to 8:00 AM

Saturday & Sunday, No Work Allowed

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

HOLIDAY AND HOLIDAY WEEKEND LANE CLOSURE RESTRICTIONS

1. For **any unexpected occurrence** that creates unusually high traffic volumes, as directed by the Engineer.
2. For **New Year's**, between the hours of **6:00 AM** December 30th to **7:00 PM** January 3rd.
3. For **Easter**, between the hours of **6:00 AM** Thursday and **7:00 PM** Monday.
4. For **Memorial Day**, between the hours of **6:00 AM** Friday and **7:00 PM** Tuesday.
5. For **Independence Day**, between the hours of **6:00 AM** the day before Independence Day and **7:00 PM** the day after Independence Day.

If **Independence Day** is on a Friday, Saturday, Sunday or Monday, then between the hours of **6:00 AM** the Thursday before Independence Day and **7:00 PM** the Tuesday after Independence Day.

6. For **Labor Day**, between the hours of **6:00 AM** Friday and **7:00 PM** Tuesday.

7. For **Veteran's Day**, between the hours of **6:00 AM** Thursday and **7:00 PM** Monday.
8. For **Thanksgiving**, between the hours of **6:00 AM** Tuesday and **7:00 PM** Monday.
9. For **Christmas**, between the hours of **6:00 AM** the Friday before the week of Christmas Day and **7:00 PM** the following Tuesday after the week of Christmas.

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

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

The liquidated damages are **One Thousand Five Hundred Dollars (\$ 1,500.00)** per hour.

INTERMEDIATE CONTRACT TIME NUMBER 4 AND LIQUIDATED DAMAGES:

(2-20-07) (Rev. 6-26-19)

108

SP1 G14 H (Rev.)

The Contractor shall complete all work required of **Map #27**, as shown on **Sheet #2**, and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the date the Contractor elects to begin the work, **after Labor Day of any year and twenty-one (21) days before Memorial Day of the following year.**

The completion date for this intermediate contract time is the date which is **twenty-one (21)** consecutive calendar days after and including the date the Contractor begins this work.

The Contractor shall notify NCDOT Division Roadside Environmental Engineer Daniel Jones by email dfjones@ncdot.gov or at 910-259-4919 a minimum of **three (3) weeks** in advance of the date of availability for this intermediate contract time.

The liquidated damages are **Five Thousand Dollars (\$ 5,000.00)** per calendar day.

INTERMEDIATE CONTRACT TIME NUMBER 5 AND LIQUIDATED DAMAGES:

(5-21-13)

108

SP1 G14 I

The Contractor shall complete the work required of installing each new inductive loop after the removal of each existing loop by the milling, patching or resurfacing operations and shall place and maintain traffic on same.

The date of availability for this intermediate contract time for each inductive loop installation will be the date when the Contractor elects to disturb the existing inductive loop.

The completion date for this intermediate contract time for each inductive loop installation will be the date which is seven (7) consecutive calendar days after the date of availability.

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

AWARD OF CONTRACT:

Revise the 2018 *Standard Specifications* as follows:

Page 1-23, Subarticle 103-4 (A) General, first paragraph, replace the 3rd and 4th sentences with the following:

Where award is to be made, the notice of award will be issued within 60 days after the opening of bids or upon issuance of any necessary debt instrument, whichever is later, but not to exceed 120 days; except with the consent of the lowest responsible bidder the decision to award the contract to such bidder may be delayed for as long a time as may be agreed upon by the Department and such bidder. In the absence of such agreement, the lowest responsible bidder may withdraw his bid at the expiration of 120 days without penalty if no notice of award has been issued.

MAJOR CONTRACT ITEMS:

(2-19-02)

104

SP1 G28

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

| Line # | Description |
|---------------|---|
| 25 | Asphalt Concrete Surface Course, Type S9.5D |
| 28 | Open-Graded Asphalt Friction Course, Type FC-1 Modified |

SPECIALTY ITEMS:

(7-1-95)(Rev. 1-17-12)

108-6

SP1 G37

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

| Line # | Description |
|---------------------------|-----------------------------|
| 40-49 | Guardrail |
| 67-71, 75, 80-81, 113-114 | Long-Life Pavement Markings |
| 82-83 | Permanent Pavement Markers |
| 84-98 | Erosion Control |
| 99 | Rest Area |
| 100 | Signals/ITS System |

FUEL PRICE ADJUSTMENT:

(11-15-05) (Rev. 2-18-14)

109-8

SP1 G43

Revise the *2018 Standard Specifications* as follows:

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

The base index price for DIESEL #2 FUEL is **\$ 1.9515** per gallon. Where any of the following are included as pay items in the contract, they will be eligible for fuel price adjustment.

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

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

SCHEDULE OF ESTIMATED COMPLETION PROGRESS:

(7-15-08) (Rev. 6-19-18)

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:

| <u>Fiscal Year</u> | | <u>Progress (% of Dollar Value)</u> |
|---------------------------|---------------------|--|
| 2020 | (7/01/19 - 6/30/20) | 39% of Total Amount Bid |
| 2021 | (7/01/20 - 6/30/21) | 40% of Total Amount Bid |
| 2022 | (7/01/21 - 6/30/22) | 21% of Total Amount Bid |

The Contractor shall also furnish his own progress schedule in accordance with Article 108-2 of the *2018 Standard Specifications*. Any acceleration of the progress as shown by the Contractor's progress schedule over the progress as shown above shall be subject to the approval of the Engineer.

DISADVANTAGED BUSINESS ENTERPRISE:

(10-16-07)(Rev. 2-19-19)

102-15(J)

SP1 G61

Description

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

Definitions

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

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

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

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

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

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

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

Regular Dealer - A firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold to the public in the usual course of business. A regular dealer engages in, as its principal business and in its own name, the purchase and sale or lease of the products in question. A regular dealer in such bulk items as steel, cement, gravel, stone, and petroleum products need not keep such products in stock, if it owns and operates distribution equipment for the products. Brokers and packagers are not regarded as manufacturers or regular dealers within the meaning of this section.

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

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

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

Forms and Websites Referenced in this Provision

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

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

RF-1 DBE Replacement Request Form - Form for replacing a committed DBE.
<http://connect.ncdot.gov/projects/construction/Construction%20Forms/DBE%20MBE%20WBE%20Replacement%20Request%20Form.pdf>

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

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

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

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

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

DBE Goal

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

Disadvantaged Business Enterprises **9.0** %

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

Directory of Transportation Firms (Directory)

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

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

Listing of DBE Subcontractors

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

- (A) Electronic Bids

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

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

- (2) Submit the contract line numbers of work to be performed by each DBE firm. When no figures or firms are entered, the bidder will be considered to have no DBE participation.
- (3) The bidder shall be responsible for ensuring that the DBE is certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the bid-letting, that DBE's participation will not count towards achieving the DBE goal.

(B) Paper Bids

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

DBE Prime Contractor

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

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

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

Written Documentation – Letter of Intent

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

The documentation shall be received in the office of the State Contractor Utilization Engineer or at DBE@ncdot.gov no later than 10:00 a.m. of the sixth calendar day following opening of bids, unless the sixth day falls on an official state holiday. In that situation, it is due in the office of the State Contractor Utilization Engineer no later than 10:00 a.m. on the next official state business day.

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

Submission of Good Faith Effort

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

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

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

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

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

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

- (A) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising, written notices, use of verifiable electronic means through the use of the NCDOT Directory of Transportation Firms) the interest of all certified DBEs who have the capability to perform the work of the contract. The bidder must solicit this interest within at least 10 days prior to bid opening to allow the DBEs to respond to the solicitation. Solicitation shall provide the opportunity to DBEs within the Division and surrounding Divisions where the project is located. The bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.
- (B) Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved.
 - (1) Where appropriate, break out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.
 - (2) Negotiate with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be sublet includes potential for DBE participation (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 Contractual Services 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 Contractual Services Engineer or at DBE@ncdot.gov. The appeal shall be made within 2 business days of notification of the determination of non-good faith.

Counting DBE Participation Toward Meeting DBE Goal

(A) Participation

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

(B) Joint Checks

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

(C) Subcontracts (Non-Trucking)

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

(D) Joint Venture

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

(E) Suppliers

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

(F) Manufacturers and Regular Dealers

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

- (1) The fees or commissions charged by a DBE firm for providing a *bona fide* service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, provided the fees or commissions are determined to be reasonable and not excessive as compared with fees and commissions customarily allowed for similar services.
- (2) With respect to materials or supplies purchased from a DBE, which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site (but not the cost of the materials and supplies themselves), provided the fees are determined to be reasonable and not excessive as compared with fees customarily allowed for similar services.

Commercially Useful Function

(A) DBE Utilization

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

(B) DBE Utilization in Trucking

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

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

DBE Replacement

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

DBE subcontractor, a non-DBE subcontractor, or with the Contractor's own forces or those of an affiliate.

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

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

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

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

(A) Performance Related Replacement

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

DBEs submitted at the time of bid to cover the same amount of work as the DBE that was terminated.

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

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

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

Changes in the Work

When the Engineer makes changes that result in the reduction or elimination of work to be performed by a committed DBE, the Contractor will not be required to seek additional

participation. When the Engineer makes changes that result in additional work to be performed by a DBE based upon the Contractor's commitment, the DBE shall participate in additional work to the same extent as the DBE participated in the original contract work.

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

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

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

Reports and Documentation

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

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

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

Reporting Disadvantaged Business Enterprise Participation

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

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

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

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

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

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

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

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

Failure to Meet Contract Requirements

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

CERTIFICATION FOR FEDERAL-AID CONTRACTS:

(3-21-90)

SP1 G85

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

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

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

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

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

CONTRACTOR'S LICENSE REQUIREMENTS:

(7-1-95)

102-14

SP1 G88

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

USE OF UNMANNED AIRCRAFT SYSTEM (UAS):

(8-20-19)

SP1 G092

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

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

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

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

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.

CARGO PREFERENCE ACT:

(2-16-16)

Privately owned United States-flag commercial vessels transporting cargoes are subject to the Cargo Preference Act (CPA) of 1954 requirements and regulations found in 46 CFR 381.7. Contractors are directed to clause (b) of 46 CFR 381.7 as follows:

(b) Contractor and Subcontractor Clauses. "Use of United States-flag vessels: The contractor 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.

(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 Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract."

SUBSURFACE INFORMATION:

(7-1-95)

450

SP1 G112 A

There is **no** subsurface information available on this project. The Contractor shall make his own investigation of subsurface conditions.

PORTABLE CONCRETE BARRIER - (Partial Payments for Materials):

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

1170-4

SP1 G121

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

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

MAINTENANCE OF THE PROJECT:

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

104-10

SP1 G125

Revise the *2018 Standard Specifications* as follows:

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

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

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

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

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

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

COOPERATION BETWEEN CONTRACTORS:

(7-1-95)

105-7

SP1 G133

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

I-5780 (C204153 - Sampson County) is located adjacent to this project, is currently under construction and will not 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.

ELECTRONIC BIDDING:

(2-19-19)

101, 102, 103

SP1 G140

Revise the *2018 Standard Specifications* as follows:

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

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

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

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

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

TWELVE MONTH GUARANTEE:

(7-15-03)

108

SP1 G145

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

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

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

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

EROSION AND SEDIMENT CONTROL/STORMWATER CERTIFICATION:

(1-16-07) (Rev 04-01-19)

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 of 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-B Certified Designer on the erosion and sediment control/stormwater component of all reclamation plans and if applicable, the certification number of the Level III-A Certified Designer on the design of the project erosion and sediment control/stormwater plan.

Preconstruction Meeting

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

Ethical Responsibility

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

Revocation or Suspension of Certification

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

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

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

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

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

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

Failure to appeal within 10 calendar days will result in the proposed adverse action becoming effective on the date specified on the certified notice. Failure to appeal within the time specified

will result in a waiver of all future appeal rights regarding the adverse action taken. The certificant will not be allowed to perform duties associated with the certification during the appeal process.

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

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

Measurement and Payment

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

PROCEDURE FOR MONITORING BORROW PIT DISCHARGE:

(2-20-07) (Rev. 4-5-19)

105-16, 230, 801

SP1 G181

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

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

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

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

represents natural background conditions. Downstream sampling location shall be located at the point where complete mixing of the discharge and receiving water has occurred.

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

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

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

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

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

CONFINED SPACES:

During the Inspection and Repair of Median Drop Inlets and Adjacent Storm Drain Pipes the Contractor shall follow 29 CFR Part 1926 Subpart AA - *Confined Spaces in Construction* from the Construction Manual.

A Confined Space is defined as:

- Limited means of Entry and/or Exit,

- Large enough for a Worker to Enter
- Not Intended for Regular/Continuous Occupancy

Examples may include sewers, pits, crawl spaces, attics, boilers, and many more.

NOTES TO CONTRACTOR:

All Maps I-40 EB, WB & Ramps: The Contractor shall thoroughly clean off excess paving debris/tack clumps/residue at the end of each day's operation.

Map No. 1 & 2 (I-40 EB & WB): Contractors shall not utilize functioning Median Crossovers.

Map No. 1 & 2 (I-40 EB & WB): Drainage work requiring a lane closure shall not occur within two miles of any milling or paving operation in the same direction of travel. Shoulder work will be completed before Open-Grated Asphalt Friction Course (OGAFC FC-1) is applied to the Surface Course. Utilize Traffic Mounted Attenuators to safely accomplish drainage work.

Map No. 1 & 2 (I-40 EB & WB) & Ramps: Guardrail not located in contract shall not be replaced unless determined by the Engineer.

Map No. 1 & 2 (I-40 EB & WB): During rain events on sections of I-40 without OGAFC FC-1, the Contractor shall utilize a Message Board where applicable communicating "Slippery When Wet."

Map No. 1, 2, 3 & 26: All Flumes are to be replaced with new Drop Inlets and Pipe Assemblies at the existing locations. All Proposed Drop Inlet sites will be marked in the field by State Forces.

Map No. 1, 2, 3 & 26: All proposed Slope Drain Pipes are to be secured using T-Post anchor stakes a maximum of 10 ft. apart throughout the pipe run and at all pipe joints. (See Std. Spec. 1605-2A for anchor stakes). The cost of all Fittings and Couplings shall be incidental to slope drain installation.

Map No. 1, 2, 3 & 26: Proposed Slope Drains shall be placed on the face of the existing front slope and commence to the toe of slope. Placement of Class B Rip Rap and Geotextile for Drainage will be used at pipe outlets. See *Proposed Slope Drain* dwg. on plan sheet No. 6. Contractor shall minimize disturbance to existing vegetated slopes when installing Slope Drains, Geotextile Fabric and Rip Rap. Repairs shall be made immediately upon completion of installation at each site including seeding & mulching.

Map No. 3 - 26 (I-40 EB & WB Ramps): The Contractor shall not park any equipment on any Ramp or Adjacent Shoulder on Maps 3 – 26.

Map No. 3 & 25 (Exit 364): The Contractor shall install the wiring, loops and pavement markings according to the existing signal plans which will be provided at the Pre-Construction meeting.

Map No. 27 (Duplin Rest Area - Exit 364): State Forces will supply and be responsible for loading borrow material (100 CY) for shoulder work within the Duplin Rest Area. The Contractor shall notify NCDOT Duplin Maintenance Engineer Chris Rhodes by email cerhodes@ncdot.gov or at (910) 296-8703 **Three (3) Business Days** in advance of arriving at the NCDOT Duplin County Maintenance yard located at 404 S. NC Hwy 11-903 Kenansville, NC 28349.

PROJECT SPECIAL PROVISIONS**ROADWAY****SHOULDER RECONSTRUCTION PER SHOULDER MILE:**

(1-18-00) (Rev. 8-21-12)

560

SP1 R07AR-REV.

Description

This work consists of reconstructing each shoulder (including median shoulders as applicable) in accordance with Standard Drawing No. 560.01 and 560.02 of the *2018 Roadway Standard Drawings* except that the rate of slope and width will be as shown on typical section, or to the existing shoulder point, whichever is nearer, as long as the desired typical is achieved, and when completed, seeding and mulching. This work shall be performed immediately after the resurfacing operations are complete as directed by the Engineer.

Materials

The Contractor shall furnish all earth material necessary for the construction of the shoulders in accordance with Section 1019 of the *2018 Standard Specifications*. All soil is subject to test and acceptance or rejection by the Engineer.

The Contractor shall use Aggregate Shoulder Borrow (ASB) which meets the following gradation on **ALL MAPS**:

| <u>Sieve</u> | <u>Percent Passing</u> |
|--------------|------------------------|
| 1 1/2" | 100 |
| 1/2" | 55 - 95 |
| #4 | 35 - 74 |

Construction Methods

Obtain material from within the project limits or approved borrow source. Prior to adding borrow material, the existing shoulder shall be scarified to provide the proper bond and shall be compacted to the satisfaction of the Engineer.

Any excess material generated by the shoulder reconstruction shall be disposed of by the Contractor in an approved disposal site.

Measurement and Payment

Shoulder Reconstruction will be measured and paid as the actual number of miles of shoulders that have been reconstructed. Measurement will be made along the surface of each shoulder to the nearest 0.01 of a mile. Such price will include disposing of any excess material in an approved disposal site, and for all labor, tools, equipment, and incidentals necessary to complete the work.

Aggregate Shoulder Borrow (ASB) will be measured and paid at the contract unit price per ton that has been incorporated into the completed and accepted work. This quantity will be measured as provided for in Article 520-11 of the *2018 Standard Specifications*. Such price will include

disposing of any excess material in an approved disposal site, and for all labor, tools, equipment, and incidentals necessary to complete the work.

Incidental Stone Base will be measured and paid as provided in Article 545-6 of the *2018 Standard Specifications*. If ASB is used for Incidental Stone Base, payment will be made for borrow as referenced above.

Seeding and Mulching will be measured and paid as shown elsewhere in the contract documents. Where ASB is used, seeding and mulching will not be required.

Payment will be made under:

Pay Item

Shoulder Reconstruction

Aggregate Shoulder Borrow

SHOULDER RECONSTRUCTION PROCEDURE:

(7-1-95) (Rev. 10-15-13)

560

SP1 R10BR

Pay Unit

Shoulder Mile

Ton

Perform shoulder reconstruction immediately following paving operations and in no case allow paving operations to exceed shoulder operations by more than two weeks without written permission of the Engineer. Failure to meet this requirement shall be cause to cease paving operations until it can be met. Place final pavement marking after shoulder reconstruction.

Upon completion of shoulder reconstruction, remove construction signs and use on other projects or store at the county maintenance installation or as directed by the Engineer.

CONSTRUCTION SEQUENCE:

(7-1-95) (Rev. 8-21-12)

560

SP1 R34R

Pave each section of roadway begun in a continuous operation. Do not begin work on another section of roadway unless satisfactory progress is being made toward completion of intersections and all other required incidental work by satisfactorily furnishing additional paving equipment and personnel, except for milling and patching operations.

POLYPROPYLENE CULVERT PIPE:

(8-20-19)

305,310

SP3 R35

Revise the *2018 Standard Specifications* as follows:

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

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

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

Item

Polypropylene Pipe

Section

1032-9

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

| Item | Section |
|--------------------|----------------|
| Polypropylene Pipe | 1032-9 |

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

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

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

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

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

| Pay Item | Pay Unit |
|------------------------|-----------------|
| __" Polypropylene Pipe | Linear Foot |

Page 10-60, add Article 1032-9:

(A) General

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

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

(B) End Treatments, Pipe Tees and Elbows

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

(C) Marking

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

- (1) AASHTO or ASTM Designation
- (2) The date of manufacture

(3) Name or trademark of the manufacturer

When polypropylene pipe, end sections, tees and elbows have been inspected and accepted a sticker will be applied to the inside of the pipe. Do not use pipe sections, flared end sections, tees or elbows which do not have this seal of approval.

SLOPE DRAIN PIPE:**Description**

Furnish and install slope drain pipe in accordance with the plans, this special provision, and any applicable requirements of Section 310 of the *Standard Specifications*, and as directed by the Engineer.

Measurement and Payment

Pipe will be measured and paid as the actual number of linear feet of pipe that has been incorporated into the completed and accepted work. Measurement of pipe will be made by counting the number of joints used and multiplying by the length of the joint to obtain the number of linear feet of pipe installed and accepted. Measurements of partial joints will be made along the longest length of the partial joint to the nearest 0.1 feet. Select bedding and backfill material will be included in the cost of the installed pipe.

Pipe Elbows will be measured and paid as the actual number of each of these items incorporated into the completed and accepted work.

Payment will be made under:

| Pay Item | Pay Unit |
|---------------------------------------|-----------------|
| ___" HDPE Pipe Culverts | Linear Foot |
| ___" C.A.A. Pipe Culverts, ___" Thick | Linear Foot |
| ___" HDPE Pipe Elbows | Each |
| ___" C.A.A. Pipe Elbows, ___" Thick | Each |

REPAIR FLARED END SECTION:

(11-13-18)

DIV 3

Description

Repair Flared End Sections as directed by the Engineer and in accordance with Section 300 & 310 of the 2018 *Standard Specifications*. Furnish all material and labor necessary to complete the repairs needed at each location.

Construction Methods

Excavate and remove existing Flared End Section. Provide Foundation Conditioning Geotextile and Foundation Conditioning Material and furnish and place all backfill material necessary to re-install Flared End Section to working order in accordance with this provision, Roadway Standard Drawing 310.03 and as directed by the Engineer. Specific locations are identified by mile marker in the *I-40 Duplin/Pender Co. Storm Drainage* spreadsheet found in project plans.

Measurement and Payment

Repair Flared End Section will be measured and paid as each, for the actual number incorporated into the completed and accepted work by the Engineer. All labor, excavating and backfilling shall be considered incidental to the work and shall be included in the cost of repair.

Payment will be made under:

| Pay Items | Pay Unit |
|---|-----------------|
| Repair Flared End Section | Each |
| Foundation Conditioning Geotextile | Sq. Yd. |
| Foundation Conditioning Material, Minor Strs. | Ton |

PIPE END SECTIONS:

(11-13-18)

DIV 3

Description

This work shall consist of removing and disposing of the existing flared end sections, and furnishing and installing new pipe end sections at the same location.

Construction Methods

Excavate, remove, and dispose of existing Flared End Sections. Provide Foundation Conditioning Geotextile and Foundation Conditioning Material, and furnish and place all backfill material necessary to install a Pipe End Section in accordance with this provision, Roadway Standard Drawings 310.02 and 310.03, and Sections 300 and 310 of the Specifications. Specific locations of Pipe End Sections are identified by mile marker in the I-40 Duplin/Pender Co. Storm Drainage spreadsheet found in project plans.

Measurement and Payment

“___” Pipe End Sections will be measured and paid for as the actual number incorporated into the completed and accepted work. All labor, excavating, removing, and disposing of existing flared end sections, and backfilling shall be considered incidental to the work being paid for as “___” Pipe End Section.”

Payment will be made at the contract unit price per each for “___” Pipe End Section.” Payment for the Foundation Conditioning Geotextile and Foundation Conditioning Material will be made as provided in Section 300 of the Specifications.

SHOULDER WEDGE:

(9-20-11) (Rev. 8-21-12)

610

SP6 R03R

Revise the *2018 Standard Specifications* as follows:

Page 6-21, Article 610-8, SPREADING AND FINISHING, add the following after line 39:

Attach a device, mounted on screed of paving equipment, capable of constructing a shoulder wedge with an angle of 30 degrees plus or minus 4 degrees along the outside edge of the roadway, measured from the horizontal plane in place after final compaction on the final surface course. Use an approved mechanical device which will form the asphalt mixture to produce a wedge with uniform texture, shape and density while automatically adjusting to varying heights.

Payment for use of this device will be incidental to the other pay items in the contract.

PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:

(11-21-00)

620

SP6 R25

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

The base price index for asphalt binder for plant mix is \$ **532.92** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **July 1, 2019**.

FINAL SURFACE TESTING NOT REQUIRED:

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

610

SP6 R45

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

MILLING ASPHALT PAVEMENT:

(1-15-19)

607

SP6 R59

Revise the *2018 Standard Specifications* as follows:

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

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

RESURFACING EXISTING BRIDGES:

(7-1-95) (Rev. 8-21-12)

SP6 R61AR

The Contractor's attention is directed to the fact that he will be required to resurface the bridges on this project if directed by the Engineer.

Place the surface so as to follow a grade line set by the Engineer with the minimum thickness as shown on the sketch herein or as directed by the Engineer. State Forces will make all necessary repairs to the bridge floors prior to the time that the Contractor places the proposed surfacing. Give the Engineer at least 15 days' notice prior to the expected time to begin operations so that State Forces will have sufficient time to complete their work.

At all bridges that are not to be resurfaced, taper out the proposed resurfacing layer adjacent to the bridges to insure a proper tie-in with the bridge surface.

OPEN GRADED ASPHALT FRICTION COURSE, PERMEABLE ASPHALT DRAINAGE COURSE, AND ULTRA-THIN BONDED WEARING COURSE:

(4-17-12)(Rev. 12-15-15)

609, 610

SP6 R62

When producing and constructing open graded asphalt friction course, permeable asphalt drainage course, and ultra-thin bonded wearing course revise the *2018 Standard Specifications* as follows:

Page 6-9, Subarticle 609-6(B) Required Sampling and Testing Frequencies, delete the third paragraph and replace with the following:

Sample and test the completed mixture from each mix design per plant per year at the following minimum frequency during mix production:

| <u>Accumulative Production Increment</u> | <u>Number of Samples per Increment</u> |
|--|--|
| 500 tons | 1 |

Page 6-9, Subarticle 609-6(C) Control Charts, delete the second paragraph and replace with the following:

Record the following data on the standardized control charts and in accordance with the requirements of Section 7.4 of the *Asphalt QMS Manual*:

- (a) Aggregate Gradation Test Results:
1. 12.5 mm (Types P57 & FC-2 Mod. Only)
 2. 9.5 mm (Excluding Type P57)
 3. 4.75 mm
 4. 2.36 mm
 5. 0.075 mm Sieves
- (b) Binder Content, %, P_b

Page 6-10, Subarticle 609-6(D) Control Limits, Table 609-1 CONTROL LIMITS, replace with the following:

| Mix Control Criteria | Target Source | Moving Average Limit | Individual Limit |
|--------------------------------------|------------------|----------------------|------------------|
| 12.5 mm Sieve (Types P57 & FC-2 Mod) | JMF | ± 4.0 | ± 8.0 |
| 9.5 mm Sieve (Excluding Type P57) | JMF | ± 4.0 | ± 8.0 |
| 4.75 mm Sieve | JMF | ± 4.0 | ± 8.0 |
| 2.36 mm Sieve | JMF | ± 4.0 | ± 8.0 |
| 0.075 mm Sieve | JMF | ± 1.5 | ± 2.5 |
| Binder Content | JMF | ± 0.3 | ± 0.7 |
| TSR (Ultra-thin Only) | Min. Spec. Limit | - | - 15% |

Page 6-12, Subarticle 609-6(F) Allowable Retesting for Mix Deficiencies, Table 609-2 RETEST LIMITS FOR MIX DEFICIENCIES, replace with the following:

| TABLE 609-2 RETEST LIMITS FOR MIX DEFICIENCIES | |
|---|---|
| Property | Limit |
| % Binder Content | by more than $\pm 1.0\%$ |
| 12.5 mm Sieve (Types P 57 & FC-2 Mod) | by more than $\pm 9.0\%$ |
| 9.5 mm Sieve (Excluding Type P 57) | by more than $\pm 9.0\%$ |
| 4.75 mm sieve | by more than $\pm 9.0\%$ |
| 2.36 mm sieve | by more than $\pm 9.0\%$ |
| 0.075 mm sieve | by more than $\pm 3.0\%$ |
| TSR (Ultra-thin only) | by more than -15% from Specification limit |

Page 6-14, Article 609-9 QUALITY ASSURANCE, Table 609-3 LIMITS OF PRECISION FOR TEST RESULTS, replace with the following:

| TABLE 609-3 LIMITS OF PRECISION FOR TEST RESULTS | |
|---|----------------------------|
| Mix Property | Limits of Precision |
| 12.5 mm Sieve (Types P 57 & FC-2 Mod. Only) | $\pm 6.0\%$ |
| 9.5 mm Sieve (Excluding Type P 57) | $\pm 5.0\%$ |
| 4.75 mm Sieve | $\pm 5.0\%$ |
| 2.36 mm Sieve | $\pm 5.0\%$ |
| 0.075 mm Sieve | $\pm 2.0\%$ |
| Asphalt Binder Content | $\pm 0.5\%$ |
| TSR (Ultra-thin HMA Only) | $\pm 15.0\%$ |

Page 6-16, Article 610-3, COMPOSITION OF MIXTURES (MIX DESIGN AND JOB MIX FORMULA), line 30, add the following at the end of the sixth paragraph:

For OGAFC, the maximum percent of binder contributed from RAS or a combination of RAS and RAP is 18%.

OPEN GRADED ASPHALT FRICTION COURSE:

(1-15-19)

650

SP6 R63

Revise the 2018 *Standard Specifications* as follows:

Page 6-37, Article 650-5, CONSTRUCTION METHODS, lines 2-4, delete items (A) and (B) and replace with the following:

- (A) Use Asphalt Binder Grade PG 58-28, Grade PG 64-22 tack coat material, or an approved non-tracking hot-applied (NTHA) asphalt tack coat material.
- (B) Uniformly apply the asphalt binder tack coat material at an applied rate of 0.06 to 0.08 gal/sy, or as directed. Uniformly apply the NTHA asphalt tack coat material at a rate of 0.10 to 0.14 gal/sy, or as directed.

ASPHALT CONCRETE PLANT MIX PAVEMENTS:

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

610, 1012

SP6 R65

Revise the 2018 *Standard Specifications* as follows:

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

| Mix Property | Limits of Precision |
|--|----------------------------|
| 25.0 mm sieve (Base Mix) | ± 10.0% |
| 19.0 mm sieve (Base Mix) | ± 10.0% |
| 12.5 mm sieve (Intermediate & Type P-57) | ± 6.0% |
| 9.5 mm sieve (Surface Mix) | ± 5.0% |
| 4.75 mm sieve (Surface Mix) | ± 5.0% |
| 2.36 mm sieve (All Mixes, except S4.75A) | ± 5.0% |
| 1.18 mm sieve (S4.75A) | ± 5.0% |
| 0.075 mm sieve (All Mixes) | ± 2.0% |
| Asphalt Binder Content | ± 0.5% |
| Maximum Specific Gravity (G_{mm}) | ± 0.020 |
| Bulk Specific Gravity (G_{mb}) | ± 0.030 |
| TSR | ± 15.0% |
| QA retest of prepared QC Gyratory Compacted Volumetric Specimens | ± 0.015 |
| Retest of QC Core Sample | ± 1.2% (% Compaction) |
| Comparison QA Core Sample | ± 2.0% (% Compaction) |
| QA Verification Core Sample | ± 2.0% (% Compaction) |
| Density Gauge Comparison of QC Test | ± 2.0% (% Compaction) |
| QA Density Gauge Verification Test | ± 2.0% (% Compaction) |

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

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

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

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

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

| TABLE 610-3 MIX DESIGN CRITERIA | | | | | | | | | |
|------------------------------------|--|-----------------|-------------------|------------------|------------------------|------------------------------------|-----------|------------------|--|
| Mix Type | Design ESALs millions ^A | Binder PG Grade | Compaction Levels | | Max. Rut Depth (mm) | Volumetric Properties ^B | | | |
| | | | G _{mm} @ | | | VMA % Min. | VTM % | VFA Min.-Max. | %G _{mm} @ N _{ini} |
| | | | N _{ini} | N _{des} | | | | | |
| S4.75A | < 1 | 64 - 22 | 6 | 50 | 11.5 | 16.0 | 4.0 - 6.0 | 65 - 80 | ≤ 91.5 |
| S9.5B | 0 - 3 | 64 - 22 | 6 | 50 | 9.5 | 16.0 | 3.0 - 5.0 | 70 - 80 | ≤ 91.5 |
| S9.5C | 3 - 30 | 64 - 22 | 7 | 65 | 6.5 | 15.5 | 3.0 - 5.0 | 65 - 78 | ≤ 90.5 |
| S9.5D | > 30 | 76 - 22 | 8 | 100 | 4.5 | 15.5 | 3.0 - 5.0 | 65 - 78 | ≤ 90.0 |
| I19.0C | ALL | 64 - 22 | 7 | 65 | - | 13.5 | 3.0 - 5.0 | 65 - 78 | ≤ 90.5 |
| B25.0C | ALL | 64 - 22 | 7 | 65 | - | 12.5 | 3.0 - 5.0 | 65 - 78 | ≤ 90.5 |
| Design Parameter | | | | | Design Criteria | | | | |
| All Mix Types | Dust to Binder Ratio (P _{0.075} / P _{be}) | | | | 0.6 - 1.4 ^C | | | | |
| | Tensile Strength Ratio (TSR) ^D | | | | 85% Min. ^E | | | | |

A. Based on 20 year design traffic.

B. Volumetric Properties based on specimens compacted to N_{des} as modified by the Department.

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

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

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

Page 6-20, Table 610-5, BINDER GRADE REQUIREMENTS (BASED ON RBR%), replace with the following:

| TABLE 610-5 BINDER GRADE REQUIREMENTS (BASED ON RBR%) | | | |
|--|-----------------------|-----------------------|------------|
| Mix Type | %RBR ≤ 20% | 21% ≤ %RBR ≤ 30% | %RBR ≥ 30% |
| S4.75A, S9.5B, S9.5C, I19.0C, B25.0C | PG 64-22 | PG 64-22 ^A | PG-58-28 |
| S9.5D, OGFC | PG 76-22 ^B | n/a | n/a |

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

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

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

| Asphalt Concrete Mix Type | Minimum Surface and Air Temperature |
|----------------------------------|--|
| B25.0C | 35°F |
| I19.0C | 35°F |
| S4.75A, S9.5B, S9.5C | 40°F ^A |
| S9.5D | 50°F |

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

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

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

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

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

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

| Mix Type | Minimum % G_{mm} (Maximum Specific Gravity) |
|------------------------------|--|
| S4.75A | 85.0 ^A |
| S9.5B | 90.0 |
| S9.5C, S9.5D, I19.0C, B25.0C | 92.0 |

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

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

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

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

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

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

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

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

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

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

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

**TABLE 1012-1
AGGREGATE CONSENSUS PROPERTIES^A**

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

A. Requirements apply to the design aggregate blend.

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

PATCHING EXISTING PAVEMENT (FULL DEPTH):

(1-15-02) (Rev.11-20-12)

R6 R88 (Rev.)

Description

The Contractor's attention is directed to the fact that there are areas of existing pavement on this project that will require repair prior to resurfacing.

The Contractor shall patch the areas that, in the opinion of the Engineer, need repairing. The areas to be patched will be delineated by the Engineer prior to the Contractor performing repairs.

Construction Methods

The patching consists of Asphalt Concrete Base Course, Asphalt Concrete Intermediate Course, Asphalt Concrete Surface Course, or a combination of base, intermediate and surface course, and pavement removal, **as shown on the Summary of Quantities sheet** or as directed by the Engineer. Patching of existing pavement shall include, but not be limited to, the cutting of the existing pavement to a neat vertical joint and uniform line; the removal and disposal of pavement, base, and subgrade material as approved or directed by the Engineer; the coating of the area to be repaired with a tack coat; and the replacement of the removed material with asphalt plant mix.

Asphalt Concrete Base Course shall be placed in lifts not exceeding 5.5 inches. Compaction equipment suitable for compacting patches as small as 4 feet by 6 feet shall be utilized on each lift. Compaction pattern to achieve proper compaction shall be approved by the engineer. The Contractor shall remove existing pavement at locations directed by the Engineer in accordance with Section 250 of the *Standard Specifications*.

The Contractor shall schedule his operations so that all areas where pavement has been removed will be repaired on the same day of the pavement removal, and all lanes of traffic shall be restored.

Method of Measurement

The quantity of patching existing pavement to be paid for will be the actual number of tons of asphalt plant mix, complete in place, which has been used to make completed and accepted repairs. The asphalt plant mixed material will be measured by being weighed in trucks on certified platform scales or other certified weighing devices.

Basis of Payment

The quantity of patching existing pavement, measured as provided above, will be paid for at the contract unit price per ton for the type of mill patching to be performed.

The above price and payment will be full compensation for all work covered by this provision, including but not limited to removal and disposal of pavement; furnishing and applying tack coat; furnishing, placing, and compacting of asphalt plant mix; furnishing of asphalt binder for the asphalt plant mix; and furnishing scales. Any provisions included in the contract in the form of project special provisions or in any other form which provides for adjustments in compensation due to variations in the price of asphalt binder will not be applicable to payment for the work covered by this provision. Patching Existing Pavement will be considered a minor item.

Payment will be made under:

| Pay Item | Pay Unit |
|---|-----------------|
| Patching Existing Pavement (Full Depth) | Ton |

REMOVE & REPLACE CONCRETE APRON FOR DROP INLET:

(11-9-15)

SPI 8

Description

The Contractor shall remove existing concrete aprons and construct new concrete aprons for drop inlets in accordance with this provision, Roadway Standard Drawings 840.17, 840.18, and 840.19, and section 840 of the Standard Specifications, at locations listed by structure numbers on the *I-40 Duplin/Pender Co. Storm Drainage* list and as directed by the Engineer. **Pre-cast units that meet the requirements of Section 1077 of the *Standard Specifications* will also be allowed but shall be approved by the Engineer.**

Measurement and Payment

Remove & Replace Concrete Apron for Drop Inlet will be measured and paid as each, for the actual number incorporated into the completed and accepted work by the Engineer. The cost for removal and disposal of existing drop inlet apron shall be considered incidental to the work and shall be included in the cost of the new apron.

Payment will be made under:

| Pay Item | Pay Unit |
|--|-----------------|
| Remove & Replace Concrete Apron for Drop Inlet | Each |

SHOULDER BERM GUTTER:

No separate measurement or payment will be made for removal and disposal of existing shoulder berm gutter and flume, or for excavation and disposal of shoulder material as the cost of such shall be included in the price bid per linear foot for *Shoulder Berm Gutter*.

REMOVE AND REPLACE 2' - 6" CURB & GUTTER:

(6-27-07) (05-14-18)

SPI 8-16 (Rev.)

Description

The Contractor shall remove and replace existing curb & gutter as directed by the Engineer. All work for this item shall be in accordance with Section 846 amended as follows:

Disposal of existing curb & gutter shall be incidental to the item *Remove and Replace 2'-6" Curb & Gutter*.

Measurement and Payment

Remove and Replace 2' - 6" Curb & Gutter will be measured and paid for in units of linear feet for the actual number of liner feet that have been completed and accepted. Such price and payment

includes, but is not limited to, providing all materials, removal and disposal of existing curb & gutter, excavating and backfilling, forming, placing all concrete, finishing, constructing and sealing joints, any associated pavement repair and all incidentals necessary to complete the work.

Payment will be made under:

| Pay Item | Pay Unit |
|---|-----------------|
| Remove and Replace 2'– 6" Curb & Gutter | Linear Feet |
| <u>DROP INLET REPAIR:</u> (5-15-07) | SPI |

Perform drop inlet repair at locations denoted by a structure number on *I-40 Duplin/Pender Co. Storm Drainage* spreadsheet located in project plans and as directed by the Engineer. The Contractor shall make his own investigation of the existing conditions at the drop inlets so indicated. The Contractor shall perform the work necessary to return each location to a condition in which the drop inlet and associated drainage features operate correctly. Work includes excavation, vegetation clearing, backfilling with suitable earth material furnished by the contractor, furnishing and placing concrete pipe collars, miscellaneous concrete work, sealing around drop inlets, repairing connections of existing underdrain to drop inlets, erosion control (*Matting for Erosion Control* placed around the perimeter of the DI area and placing *Wattles* as directed by the Engineer), including *Seeding and Mulching* all disturbed areas, and removal and disposal of all unsuitable material and debris. Some areas around Drop Inlets may require voids to be filled with flowable fill.

Construction Methods for Flowable Fill

Discharge excavatable 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

The actual number of locations where Drop Inlet Repair has been satisfactorily performed will be counted. Payment will be made at the contract unit price each for *Drop Inlet Repair*. Such price and payment will be full compensation for all work covered by this provision including but not limited to excavation, backfill, backfill material, concrete pipe collars, miscellaneous concrete work, underdrain repair, removal and disposal of unsuitable material and debris.

Flowable fill will be incidental to the pay item *Drop Inlet Repair* at locations where flowable fill is needed and will be full compensation for all work required but not limited to, the mix design, furnishing, hauling, placing and containing the flowable fill. *Erosion Control items and Seeding and Mulching* will be paid separately.

Payment will be made under:

| Pay Item | Pay Unit |
|-------------------|-----------------|
| Drop Inlet Repair | Each |

GUARDRAIL END UNITS, TYPE - TL-3:

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

862

SP8 R65

Description

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

Materials

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

Prior to installation the Contractor shall submit to the Engineer:

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

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

Construction Methods

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

Measurement and Payment

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

Payment will be made under:

Pay Item

Guardrail End Units, Type TL-3

Pay Unit

Each

GUARDRAIL ANCHOR UNITS AND TEMPORARY GUARDRAIL ANCHOR UNITS:

(1-16-2018) (REV. 06-14-19)

862

SP8 R70 (Rev.)

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

Revise the *2018 Standard Specifications* as follows:

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

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

Due to height limitations of concrete barriers, existing Type B-83 Anchor Units **will remain in place at the following overpasses and bridges**. A transitional section will be utilized to accommodate the new standard guardrail height attached to the guardrail anchor unit:

I-40 Eastbound Duplin/Pender Guardrail**Bridge over Railroad (Exit 364)**

- Structure 435
 - 363.89 – 364.14 (right)
 - 363.94 – 364.14 (left)

Bridge over Railroad (Exit 364)

- Structure 436
 - Exit 364 Exit Ramp (Map 3) 0.00 – 0.24 (right)
 - 364.37 – 364.42 (right)

Bridge over NC 24

- Structure 450
 - 364.44 – 364.48 (left)

SR 1105 overpass

- Structure 448
 - 366.26 – 366.30 (right)

Bridge over Railroad and US 117

- Structure 438
 - 369.01 – 369.38 (right)
 - 369.34 – 369.37 (left)
 - 369.40 – 369.43 (left)

Exit 384 over NC 11

- Structure 428
 - 383.70 – 383.77 (right)
 - 384.00 – 384.04 (left)

Bridge over NC 11

- Structure 427
 - 384.06 – 384.09 (left)

Bridge over Exit 385 and NC 41

- Structure 429
 - 385.25 – 385.31 (right)
 - 385.27 – 385.31 (left)

Bridge over Exit 385 and NC 41

- Structure 430
 - 385.33 – 385.35 (left)

Bridge at Rockfish Cr. and Duplin/Pender line

- Structure 234
 - 387.75 – 387.86 (right)
 - 387.82 – 387.86 (left)

Bridge at Rockfish Cr. and Duplin/Pender line

- Structure 235
 - 387.91 – 388.00 (right)
 - 387.91 – 387.94 (left)

I-40 Westbound Duplin/Pender Guardrail**SR 1501 Overpass**

- Structure 233
 - 388.02 – 387.94 (right)

Exit 385 / NC 41

- Structure
 - 385.39 – 385.33 (right)
 - 385.41 – 385.33 (left)

Bridge over NC 41

- Structure 430
 - 385.31 – 385.28

Exit 384 / NC 11

- Structure 428
 - 384.12 – 384.06 (right)
 - 384.09 – 384.04 (left)

Bridge over NC 11

- Structure 427
 - 384.06 – 384.03

Bridge over NC 24

- Structure 449
 - 364.55 – 364.50 (left)

Bridge over NC 24

- Structure 450
 - 364.48 – 364.22

Payment will be made under:

Pay Item**Pay Unit**

Guardrail Anchor Units, Type _____
 Temporary Guardrail Anchor Units, Type ____

Each
 Each

GUARDRAIL PRE-FAB ANCHOR POSTS:**Description**

This work shall consist of furnishing and installing base plated posts with welded support plates for guardrail anchor posts.

Construction Methods

Guardrail Pre-Fab Anchor Posts are to be installed in areas where box culverts are located throughout the project and existing guardrail is to be removed and replaced. NCDOT will take ownership of the unused guardrail pre-fab posts to be stored at a NCDOT Facility.

Measurement and Payment

Guardrail Pre-Fab Anchor Posts will be measured and paid as each, for the actual number incorporated into the completed and accepted work by the Engineer. Such price and payment will include furnishing Guardrail Pre-Fab Anchor Posts including all required hardware, installing Guardrail Pre-Fab Anchor Posts and removing any existing posts. This will also include all materials, tools, labor, equipment and incidentals necessary to complete the work.

Payment will be made under:

Pay Item**Pay Unit**

Guardrail Pre-Fab Anchor Posts

Each

REMOVE AND RESET GUARDRAIL ANCHOR AND END UNITS:

(12-15-09)

SPI 8-29 Rev.

This work shall consist of removing and resetting existing guardrail anchor and end units in accordance with Section 864 of the Specifications.

The anchor and end units will be measured and paid for in units of each. Such price and payment will be considered full compensation for furnishing all materials, tools, labor, equipment, and incidentals necessary to complete the work.

Payment will be made under:

| Pay Item | Pay Unit |
|--|-----------------|
| Remove and Reset End Unit, Type _____ | Each |
| Remove and Reset Anchor Unit, Type _____ | Each |

REMOVE AND REPLACE EXISTING GUARDRAIL:**Description**

This work shall consist of removing existing guardrail and installing new guardrail at the same location. In addition, existing double-faced cable guiderail posts used for closing former median crossovers will be removed and permanently closed with extended Guardrail End Units and Steel Beam Guardrail.

Construction Methods

The Contractor shall remove existing guardrail in accordance with Section 863 of the *Standard Specifications* and install new proposed guardrail in the same location in accordance with Section 862 of the *Standard Specifications*.

All Guardrail locations and quantities are listed on the *I-40 EB, WB and Ramp Guardrail (Duplin)* spreadsheet found in project plans. The Mile Marker Range includes the Guardrail End Unit, Trailing End Unit and/or Structure Anchor Unit and Guardrail Beam lengths.

The Contractor shall fill existing post holes if applicable.

In areas closing former median crossovers, the replaced guardrail section will begin with a Guardrail End Unit TL-3 no less than a 5-foot offset longitudinally from the existing adjacent Guiderail Anchor followed by Steel Beam Guardrail and a Trailing End Unit CAT-1.

Measurement and Payment

Remove and Replace Existing Guardrail will be measured and paid in linear feet of guardrail that has been satisfactorily completed. Such price and payment will include removing existing guardrail, furnishing and erecting posts, offset blocks, rail, miscellaneous hardware and other materials; furnishing and installing additional guardrail posts and additional offset blocks; backfilling; fabrication; welding; galvanizing; and furnishing and installing guardrail delineators;

adding dirt to fill existing post holes if applicable and all materials, tools, labor, equipment and incidentals necessary to complete the work. In addition, removal and disposal of existing double-faced cable guiderail posts at median crossovers will be incidental to the cost of Remove and Replace Existing Guardrail.

Payment will be made under:

Pay Item

Remove and Replace Existing Guardrail

Pay Unit

Linear Foot

THERMOPLASTIC PAVEMENT MARKING MATERIAL – COLOR TESTING:

3-19-19

1087

SP10 R05

Revise the *2018 Standard Specifications* as follows:

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

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

POLYUREA PAVEMENT MARKING MATERIAL – TYPE 2 TYPICAL CERTIFIED MILL TEST REPORT:

3-19-19

1087

SP10 R06

Amend the *2018 Standard Specifications* as follows:

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

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

SNOWPLOWABLE PAVEMENT MARKERS:

3-19-19

1086, 1250, 1253

SP10 R07

Revise the *2018 Standard Specifications* as follows:

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

(A) General

Use snowplowable pavement markers evaluated by NTPEP. The snowplowable pavement marker shall consist of a housing with one or more glass or plastic face lens type reflective lenses to provide the required color designation. Shape the housing to deflect a snowplow

blade upward in both directions without being damaged. Plastic lens faces shall use an abrasion resistant coating.

Use recycled snowplowable pavement markers that meet all the requirements of new snowplowable pavement markers except Subarticle 1086-3(B)(1). Recycled snowplowable pavement markers with minimal variation in dimensions are acceptable only when the reflector fits in the housing of the recycled snowplowable pavement marker as originally designed.

(B) Housings

(1) Dimensions

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

(2) Materials

Use snowplowable pavement markers that are on the NCDOT Approved Products List.

(3) Surface

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

(4) Identification

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

(C) Reflectors

(1) General

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

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

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

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

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

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

(A) General

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

Install snowplowable pavement marker housings into slots sawcut into the pavement. Make slots in the pavement to exactly duplicate the shape of the housing of the snowplowable pavement markers.

Promptly remove all debris resulting from the saw cutting operation from the pavement surface. Install the marker housings within 7 calendar days after saw cutting slots in 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. Fill the cleaned slots totally with epoxy adhesive flush with the surface of the existing pavement. Install snowplowable pavement markers according to the manufacturer's recommendations.

Protect the snowplowable pavement markers until the epoxy has initially cured and is track free.

(B) Reflector Replacement

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

Missing housings shall be replaced. Broken housings shall be removed and replaced. In both cases the slot for the housings shall be properly prepared prior to installing the new housing. Removal of broken housings and preparation of slots will be considered incidental to the work of replacing housings.

(C) Recycled Snowplowable Pavement Marker Housings

Use properly refurbished snowplowable pavement marker housings as approved by the Engineer such that approved new reflectors can be installed inside the housings.

EXTRUDED THERMOPLASTIC PAVEMENT MARKING THICKNESS:

3-19-19

1205

SP12 R05

Revise the *2018 Standard Specifications* as follows:

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

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

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

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

MARKERS FOR DRAINAGE STRUCTURE AND CONCRETE PAD:

Description

The work consists of replacing existing thermoplastic drainage markers on both inside and outside paved shoulders of the mainline resurfacing at locations indicated in the contract and as directed by the Engineer.

Construction Methods

Markers for Drainage Structure and Concrete Pad shall be in accordance with Subarticle 1205-3(G) Section of the *Standard Specifications*. Specific paved shoulder location and dimensions of the white triangular drainage markers shall be in accordance with the *Roadway Standard Drawing 816.04* (Sheet 1 of 2). All locations of Markers are listed on the ***I-40 Duplin/Pender Co. Storm Drainage*** included in plan sheets in this contract.

Measurement and Payment

Markers for Drainage Structure and Concrete Pad will be measured and paid for at the contract unit price bid per each. Such price and payment shall be considered full payment for replacing these drainage markers.

Payment will be made under:

Pay Item
Markers for Drainage Structure and Concrete Pad

Pay Unit
Each

EROSION AND STORMWATER CONTROL FOR SHOULDER CONSTRUCTION AND RECONSTRUCTION:

(11-16-10) (Rev. 8-21-12)

105-16, 225-2, Division 16

SP16 R03R

Land disturbing operations associated with shoulder construction/reconstruction may require erosion and sediment control/stormwater measure installation. National Pollutant Discharge Elimination System (NPDES) inspection and reporting may be required.

Erosion control measures shall be installed per the erosion control detail in any area where the vegetated buffer between the disturbed area and surface waters (streams, wetlands, or open waters) or drainage inlet is less than 10 feet. The Engineer may reduce the vegetated buffer threshold for this requirement to a value between 5 and 10 feet. Erosion control measures shall be spot checked every 14 days until permanent vegetative establishment.

In areas where shoulder construction/reconstruction includes disturbance or grading on the front slope or to the toe of fill, relocating ditch line or backslope, or removing vegetation from the ditch line or swale, NPDES inspection and monitoring are required every 14 days or within 24 hours of a rainfall event of 0.5 inch or greater. Maintain daily rainfall records. Install erosion control measures per detail.

In areas where the vegetated buffer is less than 10 feet between the disturbed area and waters of the State classified as High Quality Water (HQW), Outstanding Resource Water (ORW), Critical Areas, or Unique Wetlands, NPDES inspection and monitoring are required every 14 days or within 24 hours of a rainfall event of 0.5" or greater. The Engineer may reduce the vegetated buffer threshold for this requirement to a value between 5 and 10 feet. The plans or provisions will indicate the presence of these water classifications. Maintain daily rainfall records. Install erosion control measures per detail.

Land disturbances hardened with aggregate materials receiving sheet flow are considered non-erodible.

Sites that require lengthy sections of silt fence may substitute with rapid permanent seeding and mulching as directed by the Engineer.

NPDES documentation shall be performed by a Level II Erosion and Sediment Control/Stormwater certificate holder.

Materials used for erosion control will be measured and paid as stated in the contract.

REMOVAL OF LANDSCAPE TIMBERS AND REBAR:**Description**

The Contractor shall remove existing landscape timbers and rebar at the entrance of the Duplin Co. Rest Area (Map 27 – Exit #364) to make room for proposed 2' - 6" Concrete Curb and Gutter to be installed in the same location.

Measurement and Payment

Removal of Landscape Timbers and Rebar will be measured and paid as Lump Sum, for the actual removal of landscape timbers and rebar accepted by the Engineer. Disposal of landscape timbers and rebar shall be considered incidental to the work and shall be included in the cost of the Removal of Landscape Timbers and Rebar.

Payment will be made under:

Pay Item

Removal of Landscape Timbers and Rebar

Pay Unit

Lump Sum

STANDARD SPECIAL PROVISION
AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS

(5-20-08)

Z-2

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

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

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

STANDARD SPECIAL PROVISION
NCDOT GENERAL SEED SPECIFICATION FOR SEED QUALITY

(5-17-11)

Z-3

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

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

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

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

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

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

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

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

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

FURTHER SPECIFICATIONS FOR EACH SEED GROUP ARE GIVEN BELOW:

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

Sericea Lespedeza
Oats (seeds)

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

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

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

Common or Sweet Sundangrass

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

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

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

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

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

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

STANDARD SPECIAL PROVISION**ERRATA**

(10-16-18) (Rev.1-15-19)

Z-4

Revise the *2018 Standard Specifications* as follows:

Division 6

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

Division 7

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

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

Division 10

Page 10-78, Article 1056-4 GEOTEXTILES, TABLE 1056-1, Permittivity, Type 2, replace “Table 6^D” with “Table 7^D” and **Permittivity, Type 3^B**, replace “Table 7^D” with “Table 8^D”.

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

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

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

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

Division 17

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

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

Directional Drill (1)(1.25”) Linear Foot

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

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

Z-04a

Within Quarantined Area

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

Originating in a Quarantined County

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

Contact

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

Regulated Articles Include

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

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

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

Z-6

Revise the *2018 Standard Specifications* as follows:

Replace Article 103-4(B) with the following:

The North Carolina Department of Transportation is committed to carrying out the U.S. Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts.

The provisions of this section related to United States Department of Transportation (US DOT) Order 1050.2A, Title 49 Code of Federal Regulations (CFR) part 21, 23 United States Code (U.S.C.) 140 and 23 CFR part 200 (or 49 CFR 303, 49 U.S.C. 5332 or 49 U.S.C. 47123) are applicable to all North Carolina Department of Transportation (NCDOT) contracts and to all related subcontracts, material supply, engineering, architectural and other service contracts, regardless of dollar amount. Any Federal provision that is specifically required not specifically set forth is hereby incorporated by reference.

(1) **Title VI Assurances (USDOT Order 1050.2A, Appendix A)**

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

(a) Compliance with Regulations

The contractor (hereinafter includes consultants) shall comply with the Acts and the Regulations relative to Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

(b) Nondiscrimination

The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

(c) Solicitations for Subcontractors, Including Procurements of Materials and Equipment

In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Nondiscrimination on the grounds of race, color, or national origin.

(d) Information and Reports

The contractor shall provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FHWA to be pertinent to ascertain compliance with such Acts,

Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor shall so certify to the Recipient or the FHWA, as appropriate, and shall set forth what efforts it has made to obtain the information.

(e) Sanctions for Noncompliance:

In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it and/or the FHWA may determine to be appropriate, including, but not limited to:

- (i) Withholding payments to the contractor under the contract until the contractor complies; and/or
- (ii) Cancelling, terminating, or suspending a contract, in whole or in part.

(f) Incorporation of Provisions

The contractor shall include the provisions of paragraphs (a) through (f) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor shall take action with respect to any subcontract or procurement as the Recipient or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

(2) **Title VI Nondiscrimination Program (23 CFR 200.5(p))**

The North Carolina Department of Transportation (NCDOT) has assured the USDOT that, as a condition to receiving federal financial assistance, NCDOT will comply with Title VI of the Civil Rights Act of 1964 and all requirements imposed by Title 49 CFR part 21 and related nondiscrimination authorities to ensure that no person shall, on the ground of race, color, national origin, limited English proficiency, sex, age, or disability (including religion/creed or income-level, where applicable), be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any programs, activities, or services conducted or funded by NCDOT. Contractors and other organizations under contract or agreement with NCDOT must also comply with Title VI and related authorities, therefore:

(a) During the performance of this contract or agreement, contractors (e.g., subcontractors, consultants, vendors, prime contractors) are responsible for complying with NCDOT's Title VI Program. Contractors are not required to prepare or submit Title VI Programs. To comply with this section, the prime contractor shall:

1. Post NCDOT's Notice of Nondiscrimination and the Contractor's own Equal Employment Opportunity (EEO) Policy in conspicuous locations accessible to all employees, applicants and subcontractors on the jobsite.
2. Physically incorporate the required Title VI clauses into all subcontracts on federally-assisted and state-funded NCDOT projects, and ensure inclusion by subcontractors into all lower-tier subcontracts.
3. Required Solicitation Language. The Contractor shall include the following notification in all solicitations for bids and requests for work or material, regardless of funding source:

“The North Carolina Department of Transportation, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 US.C. §§

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

4. Physically incorporate the FHWA-1273, in its entirety, into all subcontracts and subsequent lower tier subcontracts on Federal-aid highway construction contracts only.
 5. Provide language assistance services (i.e., written translation and oral interpretation), free of charge, to LEP employees and applicants. Contact NCDOT OCR for further assistance, if needed.
 6. For assistance with these Title VI requirements, contact the NCDOT Title VI Nondiscrimination Program at 1-800-522-0453.
- (b) Subrecipients (e.g. cities, counties, LGAs, planning organizations) may be required to prepare and submit a Title VI Plan to NCDOT, including Title VI Assurances and/or agreements. Subrecipients must also ensure compliance by their contractors and subrecipients with Title VI. (23 CFR 200.9(b)(7))
- (c) If reviewed or investigated by NCDOT, the contractor or subrecipient agrees to take affirmative action to correct any deficiencies found within a reasonable time period, not to exceed 90 calendar days, unless additional time is granted by NCDOT. (23 CFR 200.9(b)(15))
- (d) The Contractor is responsible for notifying subcontractors of NCDOT’s External Discrimination Complaints Process.
1. Applicability
Title VI and related laws protect participants and beneficiaries (e.g., members of the public and contractors) from discrimination by NCDOT employees, subrecipients and contractors, regardless of funding source.
 2. Eligibility
Any person—or class of persons—who believes he/she has been subjected to discrimination based on race, color, national origin, Limited English Proficiency (LEP), sex, age, or disability (and religion in the context of employment, aviation, or transit) may file a written complaint. The law also prohibits intimidation or retaliation of any sort.
 3. Time Limits and Filing Options
Complaints may be filed by the affected individual(s) or a representative and must be filed no later than 180 calendar days after the following:
 - (i) The date of the alleged act of discrimination; or
 - (ii) The date when the person(s) became aware of the alleged discrimination; or
 - (iii) Where there has been a continuing course of conduct, the date on which that conduct was discontinued or the latest instance of the conduct.Title VI and related discrimination complaints may be submitted to the following entities:

- North Carolina Department of Transportation, Office of Civil Rights, Title VI Program, 1511 Mail Service Center, Raleigh, NC 27699-1511; toll free 1-800-522-0453
 - Federal Highway Administration, North Carolina Division Office, 310 New Bern Avenue, Suite 410, Raleigh, NC 27601, 919-747-7010
 - US Department of Transportation, Departmental Office of Civil Rights, External Civil Rights Programs Division, 1200 New Jersey Avenue, SE, Washington, DC 20590; 202-366-4070
4. Format for Complaints
Complaints must be in writing and signed by the complainant(s) or a representative, and include the complainant's name, address, and telephone number. Complaints received by fax or e-mail will be acknowledged and processed. Allegations received by telephone will be reduced to writing and provided to the complainant for confirmation or revision before processing. Complaints will be accepted in other languages, including Braille.
5. Discrimination Complaint Form
Contact NCDOT Civil Rights to receive a full copy of the Discrimination Complaint Form and procedures.
6. Complaint Basis
Allegations must be based on issues involving race, color, national origin (LEP), sex, age, disability, or religion (in the context of employment, aviation or transit). "Basis" refers to the complainant's membership in a protected group category.

**TABLE 103-1
COMPLAINT BASIS**

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

| | | | |
|--|---|---|---|
| <p>Religion (in the context of employment) <i>(Religion/ Creed in all aspects of any aviation or transit-related construction)</i></p> | <p>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.</p> | <p>Muslim, Christian, Sikh, Hindu, etc.</p> | <p>Title VII of the Civil Rights Act of 1964; 23 CFR 230; FHWA-1273 Required Contract Provisions. <i>(49 U.S.C. 5332(b); 49 U.S.C. 47123)</i></p> |
|--|---|---|---|

(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

SSP-17

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

Goals for Female

Participation in Each Trade

(Statewide) 6.9%

STANDARD SPECIAL PROVISION**REQUIRED CONTRACT PROVISIONS FEDERAL - AID CONSTRUCTION CONTRACTS**

FHWA - 1273 Electronic Version - May 1, 2012

Z-8

- I. General
- II. Nondiscrimination
- III. Nonsegregated 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. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

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 (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).
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.
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). 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 bid proposal or request for proposal 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).
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.
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. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 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 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, 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 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, 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 230, 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 (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 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 35 and 29 CFR 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.
 - 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, 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 who 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.
 - 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, national origin, age or disability. The following procedures shall be followed:
 - a. The contractor will conduct periodic inspections of project sites to insure 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. 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, 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, 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 there under. 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, 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.
- The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.
 - The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.
10. **Assurance Required by 49 CFR 26.13(b):**
- The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.
 - The contractor 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 contracting agency deems appropriate.
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.
- The records kept by the contractor shall document the following:
 - The number and work hours of minority and non-minority group members and women employed in each work classification on the project;
 - The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and
 - The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;
 - 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 \$10,000 or more.

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, 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). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

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

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

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

- b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
 - (i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
 - (ii) The classification is utilized in the area by the construction industry; and
 - (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
 - (2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
 - (3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
 - (4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
 - d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
2. **Withholding.** The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.
 3. **Payrolls and basic records**
 - a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.
 - b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.
 - (2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
 - (i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;
 - (ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
 - (iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

- (3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.
- (4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.
- c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.
4. **Apprentices and trainees**
- a. Apprentices (programs of the USDOL). Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.
- The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.
- Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.
- In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- b. Trainees (programs of the USDOL). Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.
- The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.
- Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.
- In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.
- d. Apprentices and Trainees (programs of the U.S. DOT). Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.
5. **Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.
6. **Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.
7. **Contract termination:** debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
8. **Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
9. **Disputes concerning labor standards.** 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 he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

- b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

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

1. **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
2. **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 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.
3. **Withholding for unpaid wages and liquidated damages.** The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.
4. **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

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

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" 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:

- (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.
2. 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. 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.
 5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

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 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.
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 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).
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 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 1, 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

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

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

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.

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.
- 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.
- 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.
- 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 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee 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 grantee or subgrantee 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.
- 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.
- 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. 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 Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.
- 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. 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) 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;
 - (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; 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.
- b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. 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)

- a. By signing and submitting this proposal, the prospective lower tier 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.
- 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 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 grantee or subgrantee 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 grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers to any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- 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.
- 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 Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.
- 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.

* * * * *

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

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.
2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

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

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.

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

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

Z-10

Description

The North Carolina Department of Transportation will administer a custom version of the Federal On-the-Job Training (OJT) Program, commonly referred to as the Alternate OJT Program. All contractors (existing and newcomers) will be automatically placed in the Alternate Program. Standard OJT requirements typically associated with individual projects will no longer be applied at the project level. Instead, these requirements will be applicable on an annual basis for each contractor administered by the OJT Program Manager.

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

The Alternate OJT Program will allow a contractor to train employees on Federal, State and privately funded projects located in North Carolina. However, priority shall be given to training employees on NCDOT Federal-Aid funded projects.

Minorities and Women

Developing, training and upgrading of minorities and women toward journeyman level status is a primary objective of this special training provision. Accordingly, the Contractor shall make every effort to enroll minority and women as trainees to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

Assigning Training Goals

The Department, through the OJT Program Manager, will assign training goals for a calendar year based on the contractors' past three years' activity and the contractors' anticipated upcoming year's activity with the Department. At the beginning of each year, all contractors eligible will be contacted by the Department to determine the number of trainees that will be assigned for the upcoming calendar year. At that time the Contractor shall enter into an agreement with the Department to provide a self-imposed on-the-job training program for the calendar year. This agreement will include a specific number of annual training goals agreed to by both parties. The number of training assignments may range from 1 to 15 per contractor per calendar year. The Contractor shall sign an agreement to fulfill their annual goal for the year.\

Training Classifications

The Contractor shall provide on-the-job training aimed at developing full journeyman level workers in the construction craft/operator positions. Preference shall be given to providing training in the following skilled work classifications:

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

The Department has established common training classifications and their respective training requirements that may be used by the contractors. However, the classifications established are not all-inclusive. Where the training is oriented toward construction applications, training will be allowed in lower-level management positions such as office engineers and estimators. Contractors shall submit new classifications for specific job functions that their employees are performing. The Department will review and recommend for acceptance to FHWA the new classifications proposed by contractors, if applicable. New classifications shall meet the following requirements:

Proposed training classifications are reasonable and realistic based on the job skill classification needs, and

The number of training hours specified in the training classification is consistent with common practices and provides enough time for the trainee to obtain journeyman level status.

The Contractor may allow trainees to be trained by a subcontractor provided that the Contractor retains primary responsibility for meeting the training and this provision is made applicable to the subcontract. However, only the Contractor will receive credit towards the annual goal for the trainee.

Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman level status or in which they have been employed as a journeyman.

Records and Reports

The Contractor shall maintain enrollment, monthly and completion reports documenting company compliance under these contract documents. These documents and any other information as requested shall be submitted to the OJT Program Manager.

Upon completion and graduation of the program, the Contractor shall provide each trainee with a certification Certificate showing the type and length of training satisfactorily completed.

Trainee Interviews

All trainees enrolled in the program will receive an initial and Trainee/Post graduate interview conducted by the OJT program staff.

Trainee Wages

Contractors shall compensate trainees on a graduating pay scale based upon a percentage of the prevailing minimum journeyman wages (Davis-Bacon Act). Minimum pay shall be as follows:

| | |
|------------|---|
| 60 percent | of the journeyman wage for the first half of the training period |
| 75 percent | of the journeyman wage for the third quarter of the training period |
| 90 percent | of the journeyman wage for the last quarter of the training period |

In no instance shall a trainee be paid less than the local minimum wage. The Contractor shall adhere to the minimum hourly wage rate that will satisfy both the NC Department of Labor (NCDOL) and the Department.

Achieving or Failing to Meet Training Goals

The Contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and who receives training for at least 50 percent of the specific program requirement. Trainees will be allowed to be transferred between projects if required by the Contractor's scheduled workload to meet training goals.

If a contractor fails to attain their training assignments for the calendar year, they may be taken off the NCDOT's Bidders List.

Measurement and Payment

No compensation will be made for providing required training in accordance with these contract documents.

STANDARD SPECIAL PROVISION
MINIMUM WAGES
GENERAL DECISION NC190090 01/04/2019 NC90

Z-090

Date: January 4, 2019

General Decision Number: NC190090 01/04/2019 NC90

Superseded General Decision Numbers: NC20180103

State: North Carolina

Construction Type: HIGHWAY

COUNTIES:

| | | |
|------------|-------------|--------|
| Brunswick | Greene | Onslow |
| Cumberland | Hoke | Pender |
| Currituck | Johnston | Pitt |
| Edgecombe | Nash | Wake |
| Franklin | New Hanover | Wayne |

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

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.60 for calendar year 2019 that 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, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract for calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR.5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2) – (60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number
0

Publication Date
01/04/2019

SUNC2014-005 11/17/2014

| | Rates | Fringes |
|--------------------------------|-------|---------|
| BLASTER | 21.04 | |
| CARPENTER | 13.72 | |
| CEMENT MASON/CONCRETE FINISHER | 14.48 | |
| ELECTRICIAN | | |
| Electrician | 17.97 | |
| Telecommunications Technician | 16.79 | .63 |

| | Rates | Fringes |
|---|-------|---------|
| IRONWORKER | 16.02 | |
| LABORER | | |
| Asphalt Raker and Spreader | 12.46 | |
| Asphalt Screed/Jackman | 14.33 | |
| Carpenter Tender | 12.88 | |
| Cement Mason/Concrete Finisher Tender | 12.54 | |
| Common or General | 10.20 | |
| Guardrail/Fence Installer | 12.87 | |
| Pipelayer | 12.17 | |
| Traffic Signal/Lighting Installer | 14.89 | |
| PAINTER | | |
| Bridge | 24.57 | |
| POWER EQUIPMENT OPERATORS | | |
| Asphalt Broom Tractor | 11.85 | |
| Bulldozer Fine | 17.04 | |
| Bulldozer Rough | 14.34 | |
| Concrete Grinder/Groover | 20.34 | 2.30 |
| Crane Boom Trucks | 20.54 | |
| Crane Other | 20.08 | |
| Crane Rough/All-Terrain | 20.67 | |
| Drill Operator Rock | 14.38 | |
| Drill Operator Structure | 21.14 | |
| Excavator Fine | 16.60 | |
| Excavator Rough | 14.00 | |
| Grader/Blade Fine | 18.47 | |
| Grader/Blade Rough | 14.62 | |
| Loader 2 Cubic Yards or Less | 13.76 | |
| Loader Greater Than 2 Cubic Yards | 14.14 | |
| Material Transfer Vehicle (Shuttle Buggy) | 15.18 | |
| Mechanic | 17.55 | |
| Milling Machine | 15.36 | |
| Off-Road Hauler/Water Tanker | 11.36 | |
| Oiler/Greaser | 13.55 | |
| Pavement Marking Equipment | 12.11 | |
| Paver Asphalt | 15.59 | |
| Paver Concrete | 18.20 | |
| Roller Asphalt Breakdown | 12.45 | |
| Roller Asphalt Finish | 13.85 | |
| Roller Other | 11.36 | |
| Scraper Finish | 12.71 | |
| Scraper Rough | 11.35 | |
| Slip Form Machine | 16.50 | |
| Tack Truck/Distributor Operator | 14.52 | |
| TRUCK DRIVER | | |
| GVWR of 26,000 Lbs or Less | 11.12 | |
| GVWR of 26,000 Lbs or Greater | 12.37 | |

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 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)(ii)).

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

Union Rate Identifiers

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

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

Survey Rate Identifiers

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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

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

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

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

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

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

Administrative Review Board
U.S. Department of Labor

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

- 4.) All decisions by the Administrative Review Board are final.
END OF GENERAL DECISION

STANDARD SPECIAL PROVISION
MINIMUM WAGES
GENERAL DECISION NC190091 01/04/2019 NC91

Z-091

Date: January 4, 2019

General Decision Number: NC190091 01/04/2019 NC91

Superseded General Decision Numbers: NC20180104

State: North Carolina

Construction Type: HIGHWAY

COUNTIES:

| | | |
|----------|-------------|------------|
| Beaufort | Granville | Pasquotank |
| Bertie | Halifax | Perquimans |
| Bladen | Harnett | Robeson |
| Camden | Hertford | Sampson |
| Carteret | Hyde | Scotland |
| Chowan | Jones | Tyrrell |
| Columbus | Lenoir | Vance |
| Craven | Martin | Warren |
| Dare | Northampton | Washington |
| Duplin | Pamlico | Wilson |
| Gates | | |

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

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.60 for calendar year 2019 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, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract for calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR.5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2) – (60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number
0

Publication Date
01/04/2019

SUNC2014-006 11/17/2014

| | Rates | Fringes |
|---|-------|---------|
| BLASTER | 21.85 | |
| CARPENTER | 13.72 | |
| CEMENT MASON/CONCRETE FINISHER | 14.26 | |
| ELECTRICIAN | | |
| Electrician | 18.69 | 2.66 |
| Telecommunications Technician | 14.72 | 1.67 |
| IRONWORKER | 16.32 | |
| LABORER | | |
| Asphalt Raker and Spreader | 12.42 | |
| Asphalt Screed/Jackman | 13.48 | |
| Carpenter Tender | 10.85 | |
| Cement Mason/Concrete Finisher Tender | 11.35 | |
| Common or General | 10.12 | |
| Guardrail/Fence Installer | 13.39 | |
| Pipelayer | 13.31 | |
| Traffic Signal/Lighting Installer | 16.88 | |
| PAINTER | | |
| Bridge | 19.62 | |
| POWER EQUIPMENT OPERATORS | | |
| Asphalt Broom Tractor | 13.28 | |
| Bulldozer Fine | 18.46 | |
| Bulldozer Rough | 14.09 | |
| Concrete Grinder/Groover | 24.66 | |
| Crane Boom Trucks | 17.25 | |
| Crane Other | 21.48 | |
| Crane Rough/All-Terrain | 19.00 | |
| Drill Operator Rock | 15.43 | 1.61 |
| Drill Operator Structure | 19.12 | |
| Excavator Fine | 17.61 | |
| Excavator Rough | 12.99 | |
| Grader/Blade Fine | 16.73 | |
| Grader/Blade Rough | 15.28 | |
| Loader 2 Cubic Yards or Less | 10.28 | |
| Loader Greater Than 2 Cubic Yards | 13.58 | |
| Material Transfer Vehicle (Shuttle Buggy) | 17.39 | |
| Mechanic | 18.63 | |
| Milling Machine | 14.38 | |
| Off-Road Hauler/Water Tanker | 9.30 | |
| Oiler/Greaser | 13.45 | |
| Pavement Marking Equipment | 11.87 | |
| Paver Asphalt | 15.53 | |
| Roller Asphalt Breakdown | 12.13 | |
| Roller Asphalt Finish | 13.65 | |
| Roller Other | 10.48 | |
| Scraper Finish | 13.98 | |
| Scraper Rough | 10.17 | |
| Slip Form Machine | 19.29 | |
| Tack Truck/Distributor Operator | 14.56 | |
| TRUCK DRIVER | | |
| GVWR of 26,000 Lbs or Less | 10.35 | |
| GVWR of 26,000 Lbs or Greater | 12.04 | |

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 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)(ii)).

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

Union Rate Identifiers

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

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

Survey Rate Identifiers

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

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

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

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

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

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

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

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

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

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

END OF GENERAL DECISION

TC-1

WORK ZONE TRAFFIC CONTROL GENERAL REQUIREMENTS

TEMPORARY TRAFFIC CONTROL (TTC):

(7-16-13)(Rev. 1-16-18)

RWZ-1

Maintain traffic in accordance with Divisions 10, 11 and 12 of the *2018 Standard Specifications* and the following provisions:

Install Work Zone Advance Warning Signs in accordance with the detail drawing provided in these plans prior to beginning any other work. Use a lane closure or slow moving operation to complete the work, as necessary, unless otherwise indicated. Refer to Standard Drawing No. 1101.02, 1101.11, 1110.01, 1110.02, 1130.01, 1135.01 and 1180.01 of the *2018 Roadway Standard Drawings*. Use a moving operation only if the minimum speed maintained at all times is 3 mph with no stops that narrow or close a lane of travel. If the moving operation is progressing slower than 3 mph at any time, install a lane closure. Maintain the existing traffic pattern at all times, except in the immediate work zone where lane closures are allowed as determined by the Engineer.

Refer to attached details and Standard Drawing No. 1101.02, 1101.03, 1101.04, 1101.05, 1101.11, 1110.01, 1110.02, 1115.01, 1130.01, 1135.01, 1145.01, 1150.01, 1165.01, and 1180.01 of the *2018 Roadway Standard Drawings* when closing a lane of travel in a stationary work zone such as pavement patching, resurfacing, or pavement marking removal. Properly ballasted cones and skinny drums may be used instead of drums. However, drums are required for the upstream taper portion of lane closures in all applications. The stationary work zone shall be a maximum of 1 mile in length at any given time on 2 Lane, 2 Way facilities unless otherwise approved by the Engineer. A pilot vehicle operation may be used in conjunction with flaggers and the appropriate pilot vehicle warning signing as directed by the Engineer. During periods of construction inactivity, return the traffic pattern to the existing alignment and remove or cover any work zone signs. When covering work zone signs, use an opaque material that prevents reading of the sign at night by a driver using high beam headlights. Use material, which does not damage the sign sheeting. Replace any obliterated markings as required by other sections of the *2018 Standard Specifications* and the Engineer.

When personnel and/or equipment are working on the shoulder adjacent to and within 5 feet of an open travel lane, close the nearest open travel lane using Standard Drawing No. 1101.02 of the *2018 Roadway Standard Drawings*. When personnel and/or equipment are working within a lane of travel of an undivided facility, close the lane according to the traffic control plans, *2018 Roadway Standard Drawings* or as directed by the Engineer. Conduct the work so that all personnel and/or equipment remain within the closed travel lane. Do not work simultaneously, on both sides of an open travel way, within the same location, on a two-lane, two-way road. Perform work only when weather and visibility conditions allow safe operations as directed by the Engineer.

When utilizing a slow-moving operation for such items as pavement marking and marker placement, the operation shall consist of the vehicles and devices as shown on Roadway Standard Drawing No. 1101.02, sheet 11 or 12 of the *2018 Roadway Standard Drawings*. Traffic cones may be used when necessary to provide additional protection of wet pavement markings. Ballast all traffic cones so they will not be blown over by traffic.

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PAVING OPERATIONS:

1) Paving Lift Requirements and Time Limitations:

For paving lifts of 2.0 inches or less, bring all newly resurfaced lanes to the same station and elevation within 72 hours. If not brought up to the same station and elevation within 72 hours, the Contractor shall place portable “UNEVEN PAVEMENT” signs in advance of the uneven pavement and spaced every 1/2 mile along the section of uneven pavement. Once mitigated, all portable “UNEVEN PAVEMENT” signs shall be removed. No additional compensation will be made for these signs or any other type of portable warning signs as these are included in the “Temporary Traffic Control” contract pay item.

For paving lifts greater than 2 inches, bring all newly resurfaced lanes to the same station and elevation by the end of each work day unless the Contractor utilizes the notched wedge paving methods as described below.

Failure to comply with the following requirements will result in a suspension of all other operations until all lanes of traffic are brought to the same station and elevation:

1. During paving operations, any paving lift greater than 2 inches for asphalt surface course mixes shall be mitigated by having an approved wedge apparatus on the paver that shapes the edge 1 inch vertically and the remaining at a maximum slope steepness of 2:1. For intermediate and base course mixes, use an approved wedge device that shapes the edge with a maximum slope steepness of 2:1. The maximum paving lift allowed to use this method is 3 inches.
2. At the end of the work day, the Contractor shall place portable “UNEVEN PAVEMENT” signs in advance of the uneven pavement and spaced every 1/2 mile along the section of uneven pavement. Once mitigated, all portable “UNEVEN PAVEMENT” signs shall be removed. No additional compensation will be made for these signs or any other type of portable warning signs as these are included in the “Temporary Traffic Control” contract pay item.
3. In the next day’s paving operation and not to exceed 72 hours, the Contractor shall bring up the adjacent lane to the same station and elevation before any further paving takes place on the project.

2) Asphalt Surface Treatments (AST)

For AST Operations, there is no drop-off condition to be signed. Stationary “LOOSE GRAVEL” and “UNMARKED PAVEMENT” signs shall replace “LOW/SOFT SHOULDER” signs. For placement and spacing of these signs, see the Signing Detail Sheet. All other advance warning signs are to be portable mounted. These signs are included as part of the temporary traffic control (Lump Sum) item.

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3) Fine Milling/Microsurfacing (Depths less than 1")

For fine milling operations less than 1 inch, paving is not required in the same work period. The paving of the fine milled area is to be conducted within the next work period and not to exceed 72 hours. No advance warning signs are necessary for these conditions unless the paving operations exceed 72 hours. If this occurs, install portable "UNMARKED PAVEMENT" signs. These signs are incidental to the other items of work included in the temporary traffic control (Lump Sum) item.

4) Shoulder Drop-Off Requirements

Whenever paving operations create an edge of pavement drop-off greater than 2 inches, within 72 hours, the Contractor shall backfill at a 6:1 slope from the edge and finished elevation of the pavement that has an edge of pavement drop-off as follows:

- (A) Drop-off that exceeds 2 inches on roadways with posted speed limits of 45 mph or greater.
- (B) Drop-off that exceeds 3 inches on roadways with posted speed limits less than 45 mph.

Backfill the edge of pavement drop-off with suitable compacted material, as approved by the Engineer. The material, equipment and labor associated with this operation will be at no expense to the Department. This work is not considered part of shoulder reconstruction.

PROJECT REQUIREMENTS:

Failure to comply with the following requirements will result in a suspension of all other operations:

1. Before working on ANY MAP, the Contractor shall submit a written construction sequence for traffic control and construction lighting for ALL MAPS to the Engineer at the first pre-construction meeting and the sequence must be approved before closing a lane of traffic. The Contractor and Engineer will coordinate with the Traffic Management Unit at 919-814-5000 or Traffic Services for additional traffic control guidance, as necessary.
2. Obtain written approval of the Engineer before working in more than one location or setting up additional lane closures. The maximum length of any one lane closure is 1 mile unless otherwise directed by the Engineer.
3. If Lane Closure Restrictions apply, see Special Provision, "Intermediate Contract Times and Liquidated Damages".
4. Contractor shall mill and pave lanes in an order such that water shall not accumulate.
5. Traffic Control for the milling and/or paving of ramps is to be done according to Standard Drawing Number 1101.02, Sheets 9 & 10, unless otherwise approved to be closed by the Engineer. If approved, Contractor will provide plans and devices for the detour at no additional cost to the department.

TC-4

6. If milled areas are not paved back within 72 hours, the Contractor is to furnish and install portable signs to warn drivers of the conditions. These are to include, but not limited to “Rough Road” (W8-8), “Uneven Lanes” (W8-11), and “Grooved Pavement” (W8-15) w/ Motorcycle Plaque mounted below. These are to be dual indicated on Multi-Lane Roadways with speed limits 45 mph and greater where lateral clearance can be obtained within the median areas. These portable signs are incidental to the other items of work included in the temporary traffic control (Lump Sum) pay item.

WORK ZONE SIGNING:

Description

Install advance/general warning work zone signs according to the Detail Drawing provided in these plans prior to beginning of work. Install and maintain signing in accordance with the attached drawings and Divisions 11 and 12 of the *2018 Standard Specifications*.

(A) Installation

All stationary Advance/General warning work zone signs require notification to existing Utility owners per Article 105-8 of the *2018 Standard Specifications* and Special Provision SP1 G115 within 3 to 12 full working days prior to installation.

Install Advance/General warning work zone signs before beginning work on a particular map. If signs are installed more than 7 calendar days prior to the beginning of work on a particular map, cover the signs until the work begins. Install each work zone Advance/General warning sign separately and not on the same post or stand with any other sign except where an advisory speed plate or directional arrow is used.

All stationary signing is to be installed as shown on the detail drawing(s) unless otherwise directed by the Engineer. The signs as shown on the detail drawing(s) are all that are required for a contractor to begin a resurfacing contract. Any additional signs requested by the Engineer shall be installed within 7 business days of the start of contract work. All sign locations are to be verified by the Engineer prior to installation. Once the signs have been installed and accepted, any sign relocations requested by the Department will be compensated in accordance with Article 104-7. Any additional signs other than the ones shown in the drawing will be compensated in accordance with Article 104-7.

No stationary -Y- Line advance warning signage is required unless there is more than 1,000 feet of resurfacing along the -Y- line. Whenever work proceeds through an intersection, portable signs shall be used for traffic control. There will be no direct compensation for any portable signing.

If there is a period of construction inactivity longer than 14 calendar days, remove or cover advance/general warning work zone signs. Uncover advance/general warning work zone signs no more than 7 calendar days before work resumes. All other operations may be suspended upon failure to comply with the above requirements. Such suspended operations would not be resumed until the above requirements are fulfilled.

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(B) Sign Removal

Once Maps on the Project are substantially complete, it is acceptable practice to remove the Stationary Work Zone Signs in lieu of waiting until all of the Maps are completed on the Project. A Map is substantially complete when the resurfacing operations are finished and the shoulders are brought up to the same elevation as the proposed pavement and when pavement markings (paint) are installed along the centerline and edge lines. The final pavement markings (ex. Thermoplastic/Polyurea) or pavement markers (Raised/Snowplowable) don not have to be installed for Maps to be considered substantially complete. Final pavement marking/markers are installed with portable signing according to Roadway Standard Drawing 1101.02, sheet 11 or 12. Any remaining punch list items requiring traffic control are compensated in the contract pay item for *Temporary Traffic Control*.

Stationary Work Zone Sign removal is a condition of final project acceptance.

(C) Lane Closure Work Zone Signs

Install any required lane closure signing needed during the life of the project in accordance with the Standard Drawing No. 1101.02, 1101.11 and 1110.02 of the *2018 Roadway Standard Drawings*. Any required portable signs for lane closures are compensated in the contract pay item for *Temporary Traffic Control*.

MEASUREMENT AND PAYMENT:

Temporary traffic control work, including, but not limited to installation and removal of portable signs, cones, drums, skinny drums, flaggers, AFAD's, changeable message boards, truck mounted attenuators, flashing arrow boards, and pilot vehicles will be paid at the contract lump sum price for *Temporary Traffic Control*. The *Temporary Traffic Control* pay item does not include work zone advance or general warning signs. Partial payments for *Temporary Traffic Control* will be made as follows: The cumulative total of the lump sum price for temporary traffic control will be equal to the percent complete (project) as calculated for each partial pay estimate. Additional flashing arrow boards and message boards beyond those shown in the contract, detail drawings or *Roadway Standard Drawings* required by the Engineer will be paid as extra work in accordance with Article 104-7 of the *Standard Specifications*.

The work of satisfactorily installing and removing work zone advance and/or general warning signs, including, but not limited to, furnishing, locating, installing, covering, uncovering and removing stationary signs will be measured for each required sign and paid at the contract price for *Work Zone Advance/General Warning Signing (SF)*. Payment for *Work Zone Advance/General Warning Signing* will be limited to a maximum of 90% of the total installed quantity. The remaining 10% will be paid once all signs have been removed.

The Lump Sum price for *Temporary Traffic Control* will include the work of 4 flaggers per operation per map being utilized at the same time on any day. If a pilot vehicle is used for an operation, the Lump Sum Price for *Temporary Traffic Control* will include the work of five (5) flaggers. The operator of a pilot vehicle will be considered one of the five flaggers.

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Any additional flagging beyond the “included” amount covered in the *Temporary Traffic Control* pay item will be considered supplemental flagging and compensated at a rate of \$20.00 per hour for each additional flagger as approved by the Engineer.

Payment will be made under:

Pay Item

Temporary Traffic Control
Work Zone Advance/General Warning Signing

Pay Unit

Lump Sum
Square Foot



DocuSigned by:
Steve Kite
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11/14/2017

**WORK ZONE TRAFFIC CONTROL
Project Special Provisions
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7/18/2019



**WORK ZONE TRAFFIC CONTROL FOR
INTERSTATE/FREEWAY RESURFACING PROJECTS**

GENERAL REQUIREMENTS

This Provision is intended for Interstate/Freeway Resurfacing projects that are performed at night. In the event, the Day and time Restrictions allow for daytime work activities the Work zone Presence Lighting and Sequential Flashing Lights are to be omitted. However, the Digital Speed Limit Signs will be required as described below.

Maintain traffic in accordance with Divisions 10, 11 and 12 of the *2018 Standard Specifications* and the following provisions:

Install Work Zone Advance Warning Signs in accordance with the attached drawing prior to beginning any other work.

When personnel and/or equipment are working on the shoulder adjacent to a divided facility and within 10 feet of an open travel lane, close the nearest open travel lane using Standard Drawing No. 1101.02 of the *2018 Roadway Standard Drawings*.

When personnel and/or equipment are working within a lane of travel of a divided facility, close the lane using Standard Drawing No. 1101.02 of the *2018 Roadway Standard Drawings* or as directed by the Engineer. Conduct the work so that all personnel and/or equipment remain within the closed travel lane. Perform work only when weather and visibility conditions allow safe operations as directed by the Engineer.

1. Time Restrictions for Lane Closure and Road Closure Activities

All lane closure and road closure activities shall be performed in compliance with the Day and Time restrictions listed and defined in this Contract.

Any activities performed outside of these requirements will be subject to the Liquidated Damages unless approved by the Engineer prior to beginning the activity.

The Contractor may place/pre-stage all required signs and traffic control devices necessary for lane closures prior to the closure time as approved by the Engineer. However, flashing arrow boards and changeable message signs shall not indicate lane closure information until 30 minutes or less prior to the installation of the lane closure. Typical pre-staging times are 1 hour for a single lane closure and 2 hours for double and triple lane closures. The travel lane(s) are to be closed at the prescribed times defined in this Contract.

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Duplin and Pender Counties

For removal, the lane(s) must be reopened in compliance with the times defined in this Contract. It is acceptable to remove the signs and traffic control devices from the shoulder/staging area after the lane(s) are reopened to traffic.

2. Work Zone Speed Limits and Digital Speed Limit Signs (DSLS)

All speed limits are to be ordinated by the State Traffic Engineer in order to have a lawfully enforceable speed limit; therefore, no speed limit messages/signs shall be installed prior to receiving a signed ordinance. NCDOT has sole authority of the speed limits displayed within the work zone.

The Regional Traffic Engineering Office and the Division Construction Engineer in coordination with the Work Zone Traffic Control Section will provide all Work Zone Speed Limit recommendations based on activities and conditions.

When lane closures are in effect and if ordinated by the State Traffic Engineer, implement a Work Zone “Variable” Speed Limit Reduction as stated in the ordinance and in accordance with the attached Provision and drawing.

Use Digital Speed Limit Signs (DSLS) to display the work zone speed limit as shown in the attached drawing. The Speed Limit shall be continuously displayed on the digital speed limit signs. (See Attached Provision.)

The Contractor will be responsible for coordinating with the Engineer when the Work Zone Speed Limits are to be changed and will have to seek approval by the Engineer before the Speed Limit is changed.

When the variable speed limit reductions are in effect, cover any existing speed limit signs located within the active work area that conflict with the variable speed limit reduction.

The speed limit shall be returned to the existing speed limit when the lane closure is removed and traffic is returned to the existing pattern.

3. Work Zone Presence Lighting and Sequential Flashing Warning Lights

Provide the following for nighttime work activities in accordance with attached drawing and special provisions:

- A. Furnish and install Work Zone Presence Lighting to supplement the Contractor’s portable construction and equipment lighting for the purpose of alerting motorist to the existence of an active work zone and to encourage compliance with the reduced work zone speed limit. (See attached Provision.)

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B. Furnish and install Sequential Flashing Warning Lights on drums used for merging tapers to assist motorist in determining which direction to merge and to decrease late lane merging. (See attached Provision.)

4. Law Enforcement

The Contractor shall provide 2 Law Enforcement Officers for the mainline during lane closure operations and 2 additional Law Enforcement Officers for ramp/loop closures when both operations occur simultaneously.

Use Law Enforcement Officers to assist in the shadowing of workers during the installation and during the removal of lane closures.

TEMPORARY TRAFFIC CONTROL (TTC)

Refer to Standard Drawing No. 1101.02, 1101.11, 1110.01, 1110.02, 1115.01, 1130.01, 1135.01, 1165.01, and 1180.01 of the *2018 Roadway Standard Drawings* when closing a lane of travel in a stationary work zone for items such as milling, paving, diamond grinding concrete pavements, minor bridge and approach slab rehabilitation.

Drums are recommended for all lane closure operations occurring at night. However, if skinny drums are used at night, they shall be placed every 20' in the tangent sections of lane closure operations. Skinny drums shall not be used for upstream tapers.

When covering work zone signs, use an opaque material that prevents reading of the sign at night by a driver using high beam headlights. Use material, which does not damage the sign sheeting.

Refer to Standard Drawing No. 1101.02, Sheets 9 and 10 of the 2018 Roadway Standard Drawings for diamond grinding, milling and/or paving of ramps unless otherwise approved to be closed by the Engineer. If approved, see attached drawing for typical placement of devices and signing for the detour route. All items shall be compensated for based on the unit bid price for the respective item.

Refer to Standard Drawing No. 1101.03, sheet 7 of the 2018 Roadway Standard Drawings for a closure of the interstate/freeway with traffic detoured via interchange ramps for items such as minor bridge and approach slab rehabilitation. Use Flaggers or Law Enforcement to direct traffic at ramp terminals as directed by the Engineer.

Refer to Standard Drawing No. 1101.02, sheet 12 or 13 of the *2018 Roadway Standard Drawings* for utilizing a Moving Operation for such items as pavement marking and marker placement. A minimum speed of 3 mph shall be maintained at all times with no stops that narrow or close a lane

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of travel. If the moving operation is progressing slower than 3 mph at any time, install a lane closure. All traffic control devices for this operation is considered incidental to the pay items for Pavement Marking and Markers.

TRAFFIC OPERATIONS

1. Project Requirements:

Failure to comply with the following requirements will result in a suspension of all other operations:

- A. Before working on ANY MAP, the Contractor shall submit a written construction sequence for traffic control and construction lighting for ALL MAPS to the Engineer at the first pre-construction meeting and the sequence must be approved before closing a lane of traffic. The Contractor and Engineer will coordinate with the State Work Zone Engineer at 919-814-4937 for additional traffic control guidance, as necessary.
- B. The maximum "Active Work Area" is a distance of 5 miles. It is defined as the maximum allowable distance for Resurfacing Operations taking place in a single work period. Therefore, the maximum length of lane closure is 5 miles. However, approval by the Engineer is required before closing more than 2 miles of Interstate to ensure the Contractor has the equipment and labor force to actively pursue the work.
- C. Notify the Engineer 15 consecutive calendar days before resurfacing a bridge or its approaches. Patch and make repairs to bridge surface and its approaches before resurfacing occurs. Coordinate all operations on the bridge and its approaches with the Engineer.
- D. Notify the Engineer 48 hours before resurfacing the areas of existing pavement that require patching. Patch these areas before resurfacing occurs. Allow full depth asphalt patching to cool to the point of supporting traffic without displacement or rutting before reopening closed lane. Coordinate the resurfacing operations of the patched areas with the Engineer.
- E. Notify the Engineer 48 hours before milling or resurfacing will interfere with the existing Signal Loops. Loops may need to be placed in milled surface before resurfacing occurs. Coordinate all signal loop operations with the Engineer.
- F. Obtain written approval of the Engineer before working in more than one location or setting up additional lane closures.
- G. The Contractor on this and any adjacent projects, or subcontractors working within this project shall coordinate lane closure location, type, and direction with the Engineer to best maintain lane continuity through the limits of this and adjacent projects.

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- H. Operate equipment and conduct operations in the same direction as the flow of traffic. Maintain vehicular access in accordance with Article 1101-05 of the *2018 Standard Specifications*.
- I. Provide appropriate construction lighting in accordance with Section 1413 of the *2018 Standard Specifications*.
- J. Contractor shall diamond grind, mill and pave lanes in an order such that water shall not accumulate.

2. Paving Lift Requirements and Time Limitations:

Failure to comply with the following requirements will result in a suspension of all other operations until all lanes of traffic are brought to the same station and elevation:

Paving Overlays and Lifts up to 3”

- A. For surface course paving lifts of 2.0” or less, the Contractor shall conduct his paving operations such that the following conditions are met.

Once paving begins in any lane, the Contractor will be permitted to pave as far as the work operations allow (up to 5 miles) for the initial paving period. In the next days’ paving operation, not to exceed 72 hours, bring the adjacent lane to the same station and elevation. At the end of the work day, any uneven lane conditions shall be signed with an “UNEVEN PAVEMENT/NEXT XX MILES” on the portable changeable message signs and portable “UNEVEN PAVEMENT” signs (dual mounted) 1,000’ in advance of the uneven pavement and every ½ miles thereafter along the uneven portion of roadway. Once mitigated, all portable “UNEVEN PAVEMENT” signs shall be removed.

For Open Graded Surface Mixes, “UNEVEN PAVEMENT” signs are not required.

- B. For 3” surface course mixes, place in two paving lifts of 1 ½” each unless directed otherwise by the Engineer. Conditions for uneven travel lanes same as described above.

Paving Lifts Greater than 3”

For all other paving lifts greater than 3”, bring all newly resurfaced lanes to the same station and elevation by the end of each work day unless the Contractor utilizes the notched wedge paving methods as described below:

- A. Any paving lift greater than 3” shall be mitigated by having an approved wedge apparatus on the paver that shapes the edge 1” vertically and the remaining at a maximum slope steepness of 2:1. The maximum paving lift allowed to use this method is 3”.

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- B. At the end of the work day, the Contractor shall place portable “UNEVEN PAVEMENT” signs in advance of the uneven pavement and spaced every ½ mile along the section of uneven pavement. Once mitigated, all portable “UNEVEN PAVEMENT” signs shall be removed.
- C. In the next day’s paving operation and not to exceed 72 hours, the Contractor shall bring up the adjacent lane to the same station and elevation before any further paving takes place on the project.

Milling Operations (Does Not Apply to Fine Milling)

Conduct milling operations so that any milled pavement is paved back by the end of each work day.

A milled/grooved surface shall not be re-opened to traffic except in cases where inclement weather or mechanical failure prevents the paving back of the lane by the end of the work day.

If milled areas are not paved back within the same work period due to inclement weather or mechanical failure, the Contractor is to furnish and install portable signs to warn drivers of the conditions. The signs include “Grooved Pavement” (W8-15) w/ Motorcycle Plaque mounted below, and “Uneven Lanes” (W8-11). These are to be dual indicated where lateral clearance can be obtained within the median areas. Install the “Grooved Pavement” (W8-15) w/ Motorcycle Plaque 1500’ in advance of the milled area. Install the “Uneven Lanes” (W8-11) 500’ in advance of the milled area. Alternate these signs every ½ mile. Once mitigated, all portable signs are to be removed.

Slope the pavement at the beginning and ending of the daily milling operation as directed by the Engineer. Sweep and remove all milled material from the roadway as soon as the daily milling operation is completed. Remove any existing pavement adjacent to the milled area that has been damaged and replace with patch material as directed by the Engineer.

Fine Milling / Microsurfacing Operations (Depths less than 1”)

For fine milling operations less than 1”, paving is not required in the same work period. The paving of the fine milled area is to be conducted within the next work period and not to exceed 72 hours. No advance warning signs are needed for the conditions. However, pavement markings are required by the end of each work day.

3. Temporary Pavement Markings:

Review and record the existing pavement markings and markers before obliteration. Re-establish the new pavement markings and markers using the record of existing markings in conjunction with

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the *2018 Roadway Standard Drawings* unless otherwise directed by the Engineer. Submit the record of the existing pavement markings seven calendar days before the obliteration of any pavement markings.

Obliterated pavement markings shall be replaced by the end of each workday's operation. Interim paint may be used to comply with time limitations if final pavement markings cannot be placed except for milled surfaces or diamond ground surfaces. Final markings shall be placed within 30 days in accordance with Section 1205-4 and Section 1205-5. For milled surfaces, temporary pavement markings shall be used in accordance with Section 1205-8(C). There will be no direct payment for interim paint. Temporary paint will be paid for at the contract unit price.

For concrete surfaces that have been diamond ground as a surface treatment, 4" temporary paint shall be used in accordance with Section 1205-8(C). Upon completion of all diamond grinding operations, 4" line removal shall be used to remove 100% of the 4" temporary paint on the final concrete surface by grinding method only. Use an acceptable method to grind ridges smooth only where pavement markings will be installed prior to placing final pavement marking material. This method shall also be used in the area of the black contrast for surface preparation. Payment for line removal will be made in accordance with Section 1205-10.

For project winterization, install temporary paint markings in accordance with Section 1205-8(C) of the 2018 Standard Specifications. Use 4" lane, edge, and center lines and 8" gore lines. Compensation for this work shall be made in accordance with Section 1205-10 except that no payment will be made if paving is completed more than 30 days before the written notification by the Department that winterization is required.

4. Work Zone Signing:

A. Description

Install advance/general warning work zone signs according to the attached drawings prior to beginning work.

For paving overlays of 3" or greater that create a drop-off adjacent to the median shoulder, install "LOW/SOFT SHOULDER" (SP 13107) signs on the median shoulder. Place initially at the construction limits, and then space 1 mile thereafter. No signing required for the outside shoulder.

Install and maintain signing in accordance with the Divisions 11 and 12 of the *2018 Standard Specifications*.

B. Installation

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All stationary Advance/General warning work zone signs require notification to existing Utility owners per Article 105-8 of the 2018 Standard Specifications and Special Provision SP1 G115 within 3 to 12 full working days prior to installation.

Install all Advance/General warning work zone signs before beginning work on a particular map. If signs are installed more than seven (7) calendar days prior to the beginning of work on a particular map, cover the signs until the work begins. Install each work zone Advance/General warning sign separately and not on the same post or stand with any other sign except where an advisory speed plate or directional arrow is used.

All sign locations to be verified by the Engineer prior to installation. Once the signs have been installed and accepted, any sign relocations requested by the Department will be compensated in accordance with Article 104-7. Any additional signs other than the ones required in this provision or attached drawings will be compensated in accordance with Article 104-7.

If there is a period of construction inactivity longer than 14 calendar days, remove or cover advance/general warning work zone signs. Uncover advance/general warning work zone signs no more than 7 calendar days before work resumes.

All other operations may be suspended upon failure to comply with the above requirements. Such suspended operations would not be resumed until the above requirements are fulfilled.

C. Sign Removal

Once Maps on the Project are substantially completed, it is acceptable to remove the Stationary Work Zone Signs on those Maps in lieu of waiting until all of the Maps are completed on the Project. A Map is substantially complete when the resurfacing operations are completed and the shoulders are brought up to the same elevation as the proposed pavement and when temporary pavement markings (paint) are installed along the centerline and edge lines as well as the ramps and loops. The final pavement markings (Thermoplastic or Polyurea) and/or markers do not have to be installed for the Map to be considered substantially complete. Final Pavement Markings/Markers are installed with portable signing and changeable message signs according to Roadway Standard Drawing 1101.02, sheet 13. Any remaining punch list items requiring traffic control are to be completed with portable work zone signing with compensation covered in the Contract Unit price for price for the required Traffic Control items.

Stationary Work Zone Sign removal is a condition of final project acceptance.

D. Lane Closure Work Zone Signs

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Install any required lane closure signing needed during the life of the project in accordance with the Standard Drawing No. 1101.02, 1101.11 and 1110.02 of the *2018 Roadway Standard Drawings*.

MEASUREMENT AND PAYMENT

Stationary Work Zone Signs will be measured and paid as the actual number of square feet satisfactorily installed at each location and accepted by the Engineer.

Refer to the respective Sections of Division 11 and 12 of the 2018 Standard Specifications or the attached Special Provisions for the satisfactory installation and removal of lane closures and temporary pavement markings and markers.

Measurement for Lane Closures is the actual number of stationary lane closures satisfactorily installed for paving and all other required operations as shown in Roadway Standard Drawing 1101.02, sheets 4, 5, 6, 8, 9 & 10. All labor, traffic control devices, and signing for lane closures as shown in these Roadway Standard Drawings are paid under this item.

Lane Closures will be measured and paid at the Contractor's unit price for Lane Closure on a per each basis. In the event a dual or triple lane closure is required, they will be measured individually and paid on a per each basis. The ramp lane closures shown in Roadway Standard Drawing 1101.02, sheets 9 & 10, are considered part of the mainline lane closure and will not be measured or paid separately.

Measurement for Ramp/Loop Closures is the actual number of total ramp/loop closures and detours satisfactorily installed for ramp/loop paving and all other required operations as shown on the Short Term Closure and Detour of Interstate/Freeway Ramps detail drawing. All labor, traffic control devices and signing required for re-routing traffic as shown on the Short Term Closure and Detour of Interstate/Freeway Ramps detail drawing are paid under this item.

Ramp/Loop Closures will be measured and paid at the Contractor's unit price for Ramp/Loop Closures on a per each basis. In the event two separate ramps are closed at the same time, they will be measured individually and paid on a per each basis.

Measurement and payment for paint pavement marking lines, paint pavement marking symbols, removal of pavement marking lines will be according to Section 1250-10.

Measurement and payment for law enforcement will be made and paid as the actual number of hours each Law Enforcement Officer provides during the life of the project as approved by the Engineer.

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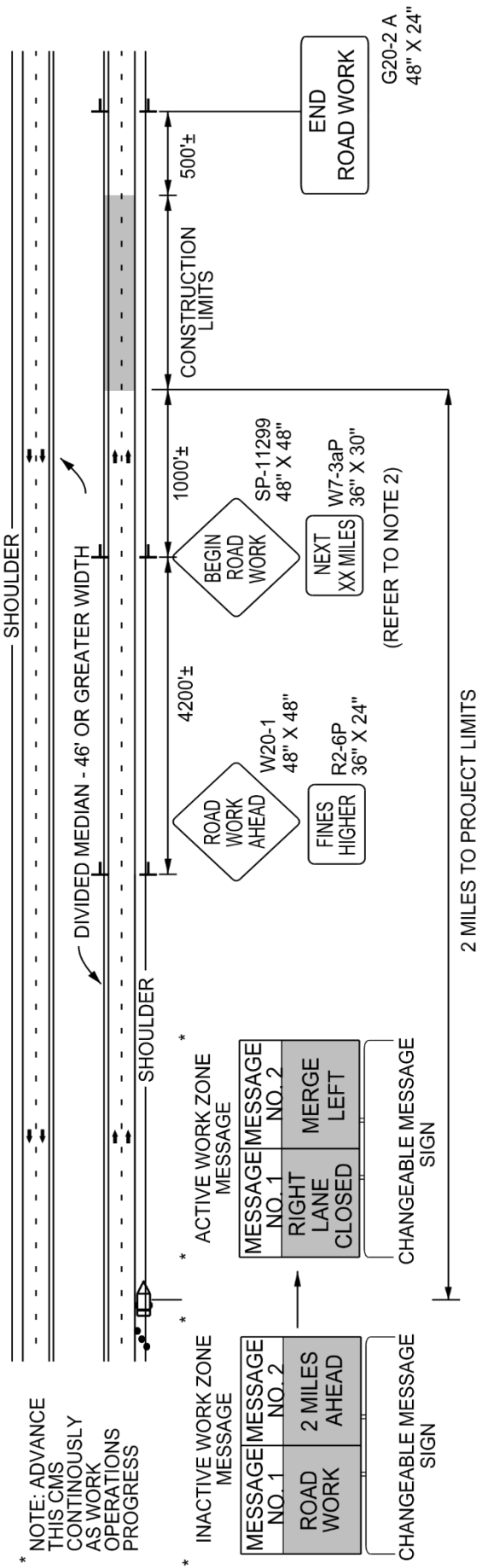
Digital Speed Limit Signs, Sequential Flashing Warning Lights, and Work Zone Presence Lighting are paid separately.

Payment will be made under:

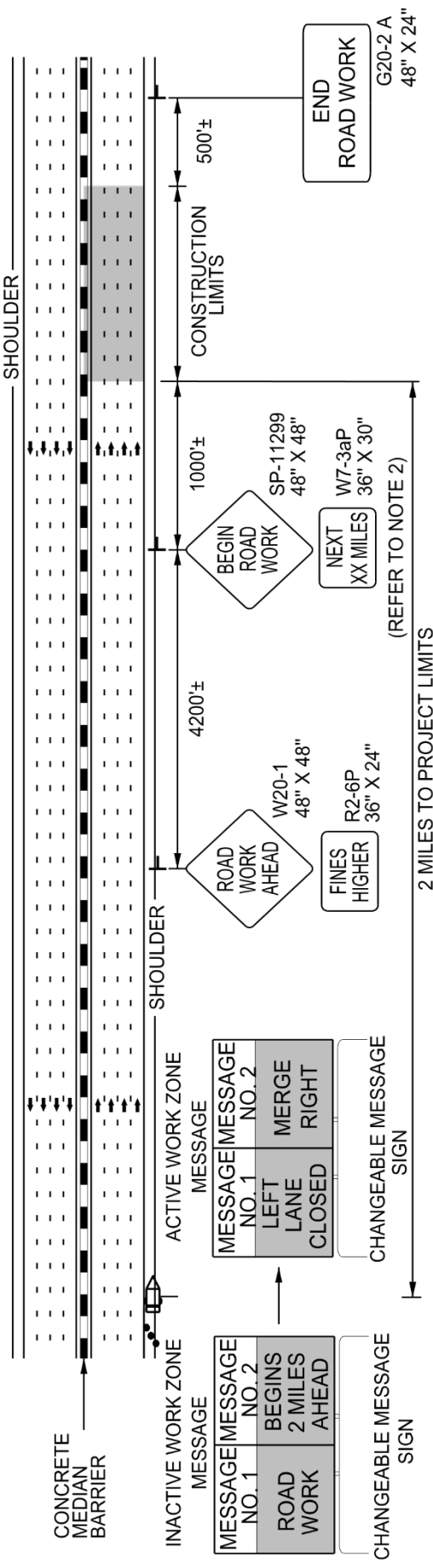
| Pay Item | Pay Unit |
|--|-----------------|
| Work Zone Signs (Stationary) | SF |
| Lane Closure | EA |
| Ramp/Loop Closure | EA |
| Paint Pavement Marking Lines (__”) | LF |
| Paint Pavement Marking Symbols | EA |
| Removal of Pavement Marking Lines (__”) | LF |
| Law Enforcement | HR |

STATIONARY ADVANCE WARNING SIGNS FOR INTERSTATE / FREEWAY RESURFACING PROJECTS

DIVIDED MEDIANS WITH WIDTHS 46' OR GREATER



DIVIDED MEDIANS WITH WIDTHS LESS THAN 46' OR WITH PERMANENT MEDIAN BARRIER



- NOTES**
1. THIS DRAWING IS TO BE USED IN CONJUNCTION WITH THE WORK ZONE VARIABLE SPEED LIMIT USING DIGITAL SPEED LIMIT SIGNS FOR INTERSTATE/FREEWAY RESURFACING PROJECTS DETAIL.
 2. FOR SIGN W7-3aP, ROUND TO THE NEAREST MILE.
 3. FOR ENTRANCE AND EXIT RAMP, REFER TO RSD 1101.01, SHEET 1, DETAIL B & C.
 4. FOR ADDITIONAL NOTES, REFER TO RSD 1101.01, SHEET 1.

LEGEND

DIRECTION OF TRAFFIC FLOW
 TRAFFIC DRUM
 CHANGEABLE MESSAGE SIGN (CMS)
 STATIONARY SIGN

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WORK ZONE DIGITAL SPEED LIMIT SIGNS:

(3/15/2019)

Description

Furnish and install Work Zone Digital Speed Limit Signs on interstates and freeways with speed limits greater than 55 MPH and or facilities that have significant traffic volumes and impacts. These signs are regulatory speed limit signs with LED displays for the speed limit numbers.

The purpose of Digital Speed Limit signs is to easily change work zone speed limits between activities that necessitate the need for a lower speed limit and the ones that do not.

Materials

Digital Speed Limit Signs shall be a minimum 36” wide x 48” high. The speed limit sign (R2-1) shall be black on white with high intensity white prismatic sheeting.

The Digital Speed Limit sign shall be mounted such that the bottom of the sign is 7’ above roadway.

The LED panel shall be a minimum of 18” wide x 28” high. The display on the LED panel shall be amber or white.

The LED numbers shall have a minimum 5 wide by 7 high pixel array with a minimum height of 18”.

The LED panel shall have auto brightness/dimming capability.

The black on orange “WORK ZONE” sign shall be mounted above the Speed Limit sign. It shall be 36” wide x 24” high with high intensity prismatic orange sheeting.

The black on white “\$250 FINE” sign shall be mounted below the Speed Limit sign. It shall be 36” wide x 24” high with high intensity prismatic white sheeting.

All digital speed limit systems shall have operational software and wireless communications that allows for remote operation and data monitoring. It shall be configured to allow access by the Engineer or his designee to change each sign independently or change the speed limit on all signs at once from a PC, tablet or cellular phone application.

Radar equipment to detect approaching speeds on the digital speed limit systems is optional. However, if the systems have radar, they will be equipped to store the detected speed data, this information should be available in a spreadsheet format and accessed remotely from a secure cloud location.

The Work Zone Digital Speed Limit systems shall have flashing beacons. The beacons are to be a minimum of 8” diameter LED circular yellow. They may be mounted either above/below or beside

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the sign assemblies and are to be centered. The beacons shall alternately flash at rates not less than 50 or more than 60 times per minute.

In addition, the flashing beacons shall be mounted in such a manner that the \$250 Speeding Fine sign is not obscured when in operation.

Digital Speed Limit Signs may be trailer mounted or stationary mounted. The unit shall be Solar powered and have the ability to operate continuously. It shall be supplemented with a battery backup system which includes a 110/120 VAC powered on-board charging system.

The batteries, when fully charged; shall be capable of powering the display for 20 continuous days with no solar power. The unit shall be capable of being powered by standard 110/120 VAC power source.

Store the battery bank and charging system in a lockable, weather and vandal resistant box.

All Work Zone Digital Speed Limit equipment shall be on the NCDOT Work Zone Traffic Control Approved Products List.

Digital Speed Limit Displays

The Speed Limit shall be continuously displayed on the signs. All other stationary speed limit signs shall be covered when Digital Speed Limit systems are in operation.

Reduced Speed Limit Displays

The Digital Speed Limit systems shall have beacons activated when the work zone speed limit is reduced. Otherwise, the beacons are to remain off.

IF THE DIGITAL SPEED LIMIT SYSTEM IS EQUIPPED WITH RADAR: The Digital Speed Limit systems shall display the reduced work zone speed limit without flashing the LED speed limit number unless approaching speeds are detected to be 6 MPH or higher than the displayed Speed Limit. If speeds are detected 6 MPH or above the displayed Speed Limit, then the LED shall flash the Speed Limit until the speeds are within the 6 MPH tolerance.

Existing Speed Limit Displays

When the existing Speed Limit is displayed on the Digital Speed Signs, the beacons are to remain off.

IF THE DIGITAL SPEED LIMIT SYSTEM IS EQUIPPED WITH RADAR: The Speed Limit number is not to flash unless the approaching speeds are detected to be 6 MPH or higher than the displayed Speed Limit.

Other Construction Methods

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The speed limits are the sole authority of the NCDOT. All speed limits are to be ordinances by the State Traffic Engineer in order to have a lawfully enforceable speed limit.

The Regional Traffic Engineering Office and the Division Construction Engineer in coordination with the Work Zone Traffic Control Section will provide all Work Zone Speed Limit recommendations based on activities and conditions.

The Contractor will be responsible for coordinating with the Engineer when the Work Zone Speed Limits are to be changed and will have to seek approval by the Engineer or his designee before the Speed Limit is changed.

Whenever possible, each trailer mounted unit shall be placed on the paved shoulder and shall have the capability of being leveled.

Measurement and Payment

The measurement for the Work Zone Digital Speed Limit Signs is made according to the number of Work Zone Digital Speed Limit signs required per the spacing requirements according to the attached drawing. Payment will be made for the maximum number of Work Zone Digital Speed Limit signs satisfactorily installed and properly functioning at any one time during the life of the project.

This includes all materials and labor to install, maintain and remove all the Work Zone Digital Speed Limit Units.

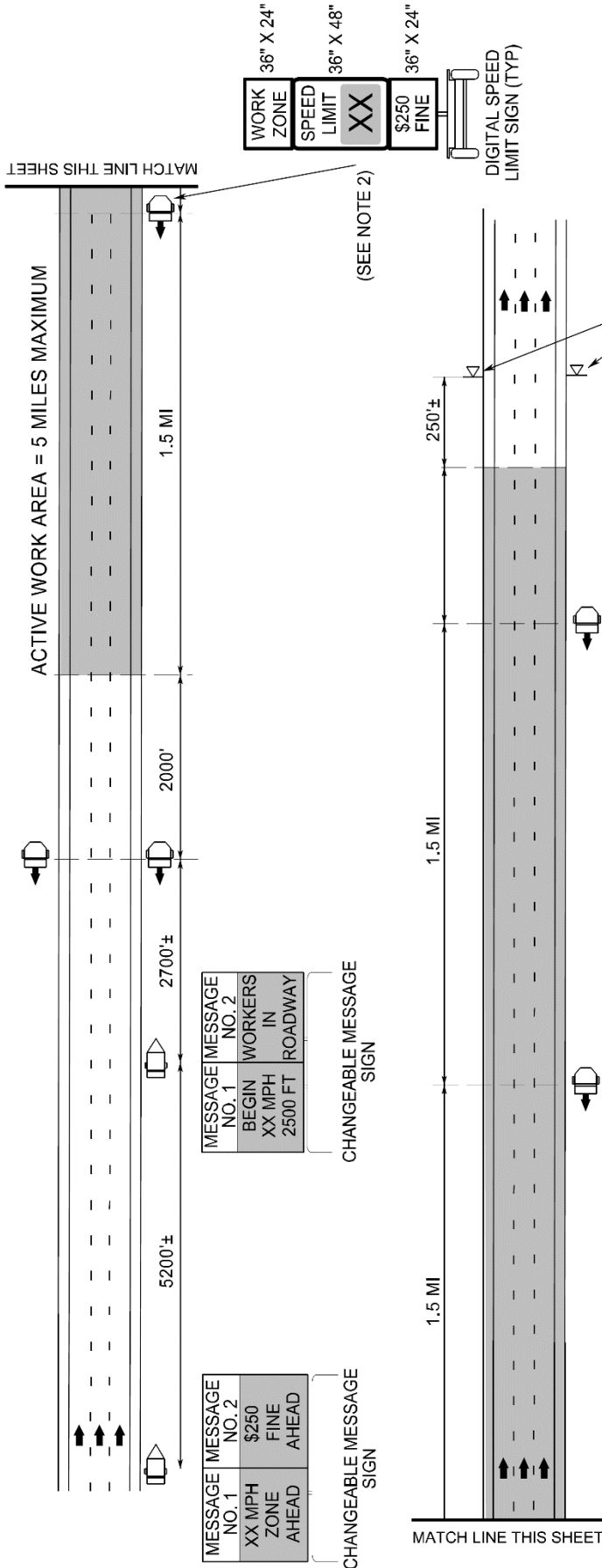
Pay Item

Work Zone Digital Speed Limit Signs

Pay Unit

Each

WORK ZONE VARIABLE SPEED LIMIT USING DIGITAL SPEED LIMIT SIGNS



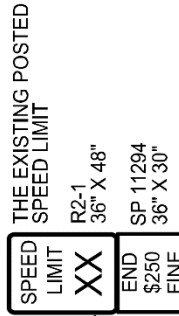
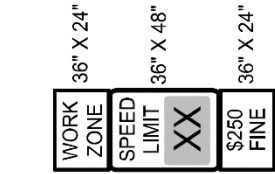
NOTES

1. THE SPEED LIMITS DISPLAYED WITHIN THE ACTIVE WORK AREA MAY VARY BETWEEN 55 MPH AND 70 MPH, DEPENDENT UPON ROAD WORK CONDITIONS AND THE EXISTING SPEED LIMIT. 55 MPH IS ONLY DISPLAYED DURING ACTIVE LANE CLOSURE OPERATIONS.
2. AT THE FIRST DIGITAL SPEED LIMIT LOCATION, PLACE A DIGITAL SPEED LIMIT SIGN ON BOTH THE INSIDE AND OUTSIDE SHOULDERS, UNLESS DIRECTED OTHERWISE BY THE ENGINEER WHEN THERE IS NOT ENOUGH ROOM ON THE INSIDE SHOULDER DUE TO NARROW MEDIAN AND PERMANENT MEDIAN BARRIER. AT SUBSEQUENT LOCATIONS DOWNSTREAM, PLACE A SINGLE DIGITAL SPEED LIMIT SIGN ON THE OUTSIDE SHOULDER.
3. THE ENGINEER MAY DETERMINE TO INSTALL THE DIGITAL SPEED LIMIT SIGNS ON THE OUTSIDE SHOULDER OR ON THE MEDIAN SIDE IF THE SIGNS ARE NOT HIGHLY VISIBLE TO ALL MOTORISTS. THIS APPLICATION IS FOR SHORT-TERM ACTIVITIES. THE MAXIMUM ACTIVE WORK AREA IS 5 MILES.
4. THE DIGITAL SPEED LIMIT SIGNS TAKE PRECEDENCE OVER EXISTING SPEED LIMIT SIGNS. ALL EXISTING SPEED LIMIT SIGNS SHALL BE COVERED OR REMOVED.
5. THE DIGITAL SPEED LIMIT SIGNS WILL BE INSTALLED (TRAILER MOUNTED OR STATIONARY MOUNTED) IN ADVANCE AND SPACED APPROXIMATELY 1.5 MILES THROUGHOUT THE ACTIVE WORK AREA, UNLESS DIRECTED OTHERWISE.
6. NCDOT HAS SOLE AUTHORITY OF THE SPEED LIMITS DISPLAYED ON THE DIGITAL SPEED LIMIT SIGNS.
7. THE WORK ZONE VARIABLE SPEED LIMIT AND THE \$250 SPEEDING PENALTY ARE SEPARATE ORDINANCES THAT MUST BE SIGNED BY THE STATE TRAFFIC ENGINEER TO BE VALID AND ENFORCEABLE. WITHOUT A SIGNED ORDINANCE, THE SPEED LIMIT ON A FACILITY SHALL REMAIN UNCHANGED.

WHEN THERE IS NOT ACTIVE WORK IN THE TRAVEL LANE

| SPEED LIMIT DISPLAY | CONDITIONS |
|--------------------------|-------------------------------------|
| | DROP-OFFS BETWEEN OPEN TRAVEL LANES |
| USE EXISTING SPEED LIMIT | PAVED SHOULDER DROP-OFFS |
| REDUCE SPEED LIMIT 5 MPH | < 1.0" |
| | 1.0" - 2.0" |
| | ≤ 3.0" |
| | > 3.0" |

DROP-OFFS BETWEEN OPEN TRAVEL LANES SHOULD NOT EXCEED 2.0"



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Duplin and Pender Counties

SEQUENTIAL FLASHING WARNING LIGHTS:

(10/08/2016)

Description

Furnish and install Sequential Flashing Warning Lights on drums used for merging tapers during nightly work activities.

The purpose of these lights is to assist the motorist in determining which direction to merge when approaching a lane closure. It's also designed to reduce the number of late merges resulting in devices being struck and having to be reset to maintain positive guidance at the merge point. The successive flashing of the lights shall occur from the upstream end of the merging taper to the downstream end of the merging taper in order to identify the desired vehicle path.

Materials

The Sequential Flashing Warning Lights shall meet all of the requirements for warning lights within the current edition of the Manual of Uniform Traffic Control Devices (MUTCD).

Each light unit shall be capable of operating fully and continuously for a minimum of 200 hours when equipped with a standard battery set.

Each light in the sequence shall be flashed at a rate of not less than 55 times per minute and not more than 75 times per minute. The flash rate and flash duration shall be consistent throughout the sequence.

Supply a Type 3 Certification (Independent Test Lab results) documenting all actual test results for the specified parameters contained in the Institute of Transportation Engineer's (ITE's) *Purchase Specification for Flashing and Steady Burn Warning Lights*. The laboratory shall also identify all manufacturer codes and part numbers for the incandescent lamp or LED clusters, lenses, battery, and circuitry, and the total width of the light with the battery in place. The complete assembly shall be certified as crashworthy when firmly affixed to the channelizing device.

All Sequential Flashing Warning Lights shall be on the NCDOT Work Zone Traffic Control Approved Products List.

Construction Methods

Sequential Flashing Warning Lights are to be used for night time lane closures.

These lights shall flash sequentially beginning with the first light and continuing until the final light.

The Sequential Flashing Warning Lights shall automatically flash in sequence when placed on the drums that form the merging taper.

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Duplin and Pender Counties

The number of lights used in the drum taper shall equal the number of drums used in the taper.

Drums are the only channelizing device allowed to mount sequential flashing warning lights.

The Sequential Flashing Warning Lights shall be weather independent and visual obstructions shall not interfere with the operation of the lights.

The Sequential Flashing Warning Lights shall automatically sequence when placed in line in an open area with a distance between lights of 10 to 100 feet. A 10 foot stagger in the line of lights shall have no adverse effect on the operation of the lights.

If one light fails, the flashing sequence shall continue. If more than 1 light fails, all of the lights are to be automatically turned to the "off" mode. Non-sequential flashing is prohibited.

When lane closures are not in effect, the Sequential Flashing Warning Lights shall be deactivated.

Measurement and Payment

Sequential Flashing Warning Lights will be measured and paid as the maximum number of sequential flashing warning lights satisfactorily installed and properly functioning at any one time during the life of the project.

This includes all materials and labor to install, maintain and remove all the Sequential Flashing Warning Lights.

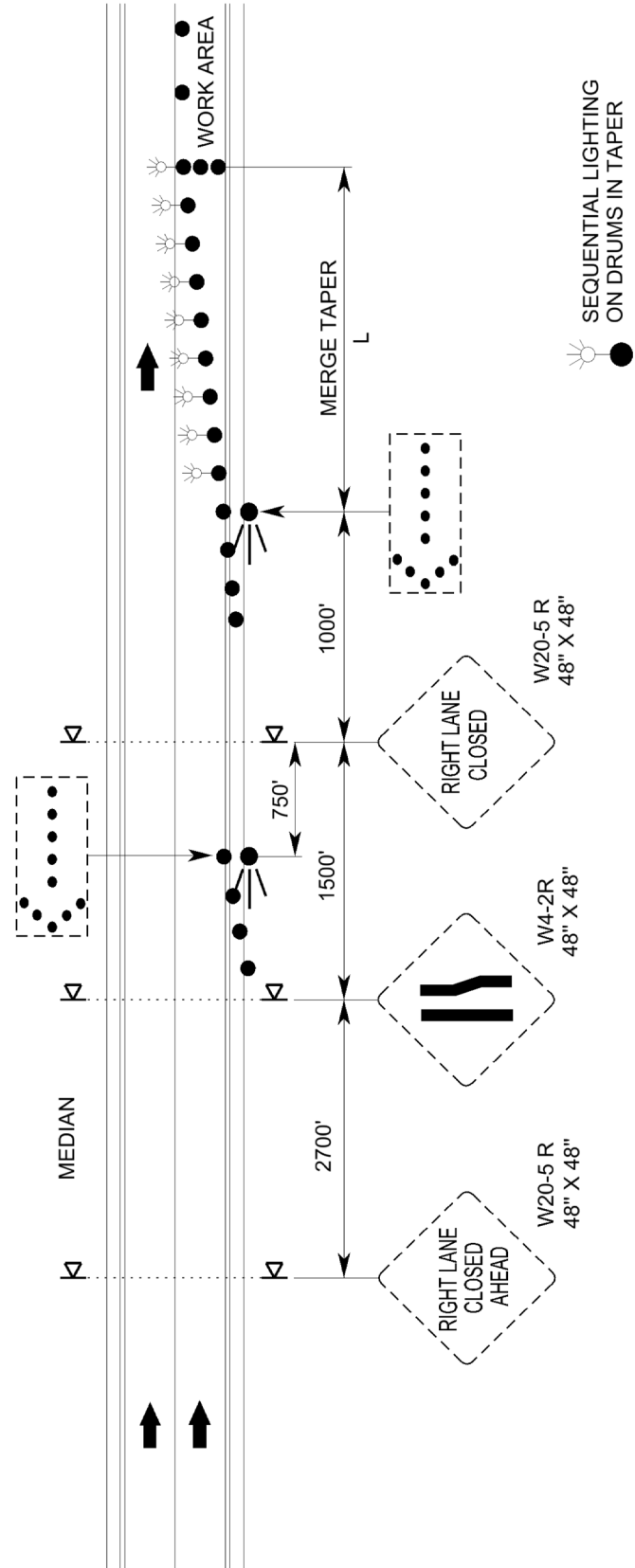
Pay Item

Sequential Flashing Warning Lights

Pay Unit

Each

SEQUENTIAL FLASHING WARNING LIGHTS



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Duplin and Pender Counties

INTERSTATE/FREEWAY MAXIMUM LANE CLOSURE LENGTH:

(03/20/17)

The maximum lane closure length on this project is 2 miles. This supersedes the allowable 5 mile maximum lane closure length located in Traffic Operations Section (1B) of the Interstate/Freeway Resurfacing Provision.

All quantities for required traffic control devices, digital speed limit signs, work zone presence lighting and law enforcement hours as well as paving production rates are to be based on this requirement.

WORK ZONE TRAFFIC CONTROL FOR DRAINAGE REPAIR:

GENERAL REQUIREMENTS

When personnel and/or equipment are working on the shoulder adjacent to a divided facility and within 10 feet of an open travel lane, close the nearest open travel lane using Standard Drawing No. 1101.02 of the *2018 Roadway Standard Drawings*.

When personnel and/or equipment are working within a lane of travel of a divided facility, close the lane using Standard Drawing No. 1101.02 of the *2018 Roadway Standard Drawings* or as directed by the Engineer. Conduct the work so that all personnel and/or equipment remain within the closed travel lane. Perform work only when weather and visibility conditions allow safe operations as directed by the Engineer.

Drainage Repair in Median:

For drainage repair work in the median, close the median shoulder with drums, in both directions of I-40 using Roadway Standard Drawing 1101.04. When completing any necessary concrete pours in the median, close the left lane where the concrete truck will be positioned, using Roadway Standard Drawing 1101.02, sheet 4.

Drainage Repair on Shoulder:

For drainage repair work on the shoulder close the nearest open travel lane using Standard Drawing No. 1101.04 of the 2018 Roadway Standard Drawings and install temporary barrier based on the length of need, flare rate and clear zone as defined in the AASHTO Roadway Design Guide and in the Roadway Standard drawings.

Temporary barrier shall be placed / located a minimum two-foot offset (shy distance) from the edge of an open travel lane.

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Install temporary barrier a maximum of (1) week prior to beginning work in the area. Once temporary barrier is installed at any location proceed in a continuous manner to complete the work at that location unless directed by the engineer.

Do not place barrier directly on any surface other than asphalt or concrete.

Install temporary barrier with the traffic flow beginning with the upstream side of traffic. Remove temporary barrier against the flow of traffic beginning with the downstream side of traffic.

Protect the approach end of movable/portable concrete barrier at all times during the installation and removal of the barrier by either a truck mounted attenuator (maximum 72 hours) or a temporary crash cushion.

Protect the approach end of movable/portable concrete barrier from oncoming traffic at all times by a temporary crash cushion.

When barrier is placed on a roadway shoulder, install shoulder closure signs and devices in advance of the barrier in accordance with the NCDOT Roadway Standard Drawings.

| Pay Item | Pay Unit |
|--|-----------------|
| Portable Concrete Barrier | LF |
| Remove & Reset Portable Concrete Barrier | LF |
| Temporary Crash Cushion | EA |
| Remove & Reset Temporary Crash Cushion | EA |

EC-1

STABILIZATION REQUIREMENTS:

(3-11-16)

S-2A

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective April 1, 2019 issued by the North Carolina Department of Environmental Quality Division of Water Resources. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

SEEDING AND MULCHING:

(East Crimp)

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

All Roadway Areas

March 1 - August 31

50# Tall Fescue
10# Centipede
25# Bermudagrass (hulled)
500# Fertilizer
4000# Limestone
10# Millet

September 1 - February 28

50# Tall Fescue
10# Centipede
35# Bermudagrass (unhulled)
500# Fertilizer
4000# Limestone
25# Choose ONE of the Following
Rye Grain,
Wheat FFR 555, or
Roane Wheat

Waste and Borrow Locations

March 1 – August 31

75# Tall Fescue
25# Bermudagrass (hulled)
500# Fertilizer
4000# Limestone

September 1 - February 28

75# Tall Fescue
35# Bermudagrass (unhulled)
500# Fertilizer
4000# Limestone

Note: 50# of Bahiagrass may be substituted for either Centipede or Bermudagrass only upon Engineer's request.

EC-2

Approved Tall Fescue Cultivars

| | | | |
|----------------------------|-----------------|-----------------|--------------------|
| 06 Dust | Escalade | Justice | Scorpion |
| 2 nd Millennium | Essential | Kalahari | Serengeti |
| 3 rd Millennium | Evergreen 2 | | Shelby |
| Apache III | Falcon IV | Kitty Hawk 2000 | Sheridan |
| Avenger | Falcon NG | Legitimate | Signia |
| Barlexas | Falcon V | Lexington | Silver Hawk |
| Barlexas II | Faith | LSD | Sliverstar |
| Bar Fa | Fat Cat | Magellan | Shenandoah Elite |
| Barrera | Festnova | Matador | Sidewinder |
| Barrington | Fidelity | Millennium SRP | Skyline |
| Barrobusto | Finelawn Elite | Monet | Solara |
| Barvado | Finelawn Xpress | Mustang 4 | Southern Choice II |
| Biltmore | Finesse II | Ninja 2 | Speedway |
| Bingo | Firebird | Ol' Glory | Spyder LS |
| Bizem | Firecracker LS | Olympic Gold | Sunset Gold |
| Blackwatch | Firenza | Padre | Taccoa |
| Blade Runner II | Five Point | Patagonia | Tanzania |
| Bonsai | Focus | Pedigree | Trio |
| Braveheart | Forte | Picasso | Tahoe II |
| Bravo | Garrison | Piedmont | Talladega |
| Bullseye | Gazelle II | Plantation | Tarheel |
| Cannavaro | Gold Medallion | Proseeds 5301 | Terrano |
| Catalyst | Grande 3 | Prospect | Titan ltd |
| Cayenne | Greenbrooks | Pure Gold | Titanium LS |
| Cessane Rz | Greenkeeper | Quest | Tracer |
| Chipper | Gremlin | Raptor II | Traverse SRP |
| Cochise IV | Greystone | Rebel Exeda | Tulsa Time |
| Constitution | Guardian 21 | Rebel Sentry | Turbo |
| Corgi | Guardian 41 | Rebel IV | Turbo RZ |
| Corona | Hemi | Regiment II | Tuxedo RZ |
| Coyote | Honky Tonk | Regenerate | Ultimate |
| Darlington | Hot Rod | Rendition | Venture |
| Davinci | Hunter | Rhambler 2 SRP | Umbrella |
| Desire | Inferno | Rembrandt | Van Gogh |
| Dominion | Innovator | Reunion | Watchdog |
| Dynamic | Integrity | Riverside | Wolfpack II |
| Dynasty | Jaguar 3 | RNP | Xtremegreen |
| Endeavor | Jamboree | Rocket | |

On cut and fill slopes 2:1 or steeper Centipede shall be applied at the rate of 5 pounds per acre and add 20# of Sericea Lespedeza from January 1 - December 31.

EC-3

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.

All areas seeded and mulched shall be tacked with asphalt. Crimping of straw in lieu of asphalt tack shall not be allowed on this project.

CRIMPING STRAW MULCH:

Crimping shall be required on this project adjacent to any section of roadway where traffic is to be maintained or allowed during construction. In areas within six feet of the edge of pavement, straw is to be applied and then crimped. After the crimping operation is complete, an additional application of straw shall be applied and immediately tacked with a sufficient amount of undiluted emulsified asphalt.

Straw mulch shall be of sufficient length and quality to withstand the crimping operation.

Crimping equipment including power source shall be subject to the approval of the Engineer providing that maximum spacing of crimper blades shall not exceed 8".

CONCRETE WASHOUT STRUCTURE:

(01-03-19)

(DIV3)

Description

Concrete washout structures are enclosures above or below grade to contain concrete waste water and associated concrete mix from washing out ready-mix trucks, drums, pumps, or other equipment. Concrete washouts must collect and retain all the concrete washout water and solids, so that this material does not migrate to surface waters or into the ground water. These enclosures are not intended for concrete waste not associated with wash out operations.

The concrete washout structure may include constructed devices above or below ground and/or commercially available devices designed specifically to capture concrete wash water.

Materials

| Item | Section |
|----------------------|----------------|
| Temporary Silt Fence | 1605 |

Safety Fence shall meet the specifications as provided elsewhere in this contract.

Geomembrane basin liner shall meet the following minimum physical properties for low permeability; it shall consist of a polypropylene or polyethylene 10 mil think geomembrane. If the minimum setback dimensions can be achieved the liner is not required. (5 feet above groundwater, 50 feet from top of bank of perennial stream, other surface water body, or wetland.)

Construction Methods

Build an enclosed earthen berm or excavate to form an enclosure in accordance with the details and as directed.

Install temporary silt fence around the perimeter of the enclosure in accordance with the details and as

EC-4

directed if structure is not located in an area where existing erosion and sedimentation control devices are capable to containing any loss of sediment.

Post a sign with the words “Concrete Washout” in close proximity of the concrete washout area, so it is clearly visible to site personnel. Install safety fence as directed for visibility to construction traffic.

The construction details for the above grade and below grade concrete washout structures can be found on the following web page link:

<https://connect.ncdot.gov/resources/roadside/SoilWaterDocuments/ConcreteWashoutStructuredetail.pdf>

Alternate details for accommodating concrete washout may be submitted for review and approval.

The alternate details shall include the method used to retain and dispose of the concrete waste water within the project limits and in accordance with the minimum setback requirements. (5 feet above groundwater, 50 feet from top of bank of perennial stream, other surface water body, or wetland.)

Maintenance and Removal

Maintain the concrete washout structure(s) to provide adequate holding capacity plus a minimum freeboard of 12 inches. Remove and dispose of hardened concrete and return the structure to a functional condition after reaching 75% capacity.

Inspect concrete washout structures for damage and maintain for effectiveness.

Remove the concrete washout structures and sign upon project completion. Grade the earth material to match the existing contours and permanently seed and mulch area.

Measurement and Payment

Concrete Washout Structure will be paid for per each enclosure installed in accordance with the details. If alternate details are approved then those details will also be paid for per each approved and installed device.

Temporary Silt Fence will be measured and paid for in accordance with Article 1605-5 of the *Standard Specifications*.

No measurement will be made for other items or for over excavation or stockpiling.

Payment will be made under:

| Pay Item | Pay Unit |
|----------------------------|-----------------|
| Concrete Washout Structure | Each |

RESPONSE FOR EROSION CONTROL:

Description

Furnish the labor, materials, tools and equipment necessary to move personnel, equipment, and supplies to the project necessary for the pursuit of any or all of the following work as shown herein, by an approved subcontractor.

EC-5

| Section | Erosion Control Item | Unit |
|---------|----------------------------------|--------|
| 1605 | Temporary Silt Fence | LF |
| 1606 | Special Sediment Control Fence | LF/TON |
| 1615 | Temporary Mulching | ACR |
| 1620 | Seed - Temporary Seeding | LB |
| 1620 | Fertilizer - Temporary Seeding | TN |
| 1631 | Matting for Erosion Control | SY |
| SP | Coir Fiber Mat | SY |
| 1640 | Coir Fiber Baffles | LF |
| SP | Permanent Soil Reinforcement Mat | SY |
| 1660 | Seeding and Mulching | ACR |
| 1661 | Seed - Repair Seeding | LB |
| 1661 | Fertilizer - Repair Seeding | TON |
| 1662 | Seed - Supplemental Seeding | LB |
| 1665 | Fertilizer Topdressing | TON |
| SP | Safety/Highly Visible Fencing | LF |
| SP | Response for Erosion Control | EA |

Construction Methods

Provide an approved subcontractor who performs an erosion control action as described in the NPDES Inspection Form SPPP30. Each erosion control action may include one or more of the above work items.

Measurement and Payment

Response for Erosion Control will be measured and paid for by counting the actual number of times the subcontractor moves onto the project, including borrow and waste sites, and satisfactorily completes an erosion control action described in Form 1675. The provisions of Article 104-5 of the *Standard Specifications* will not apply to this item of work.

Payment will be made under:

| Pay Item | Pay Unit |
|------------------------------|-----------------|
| Response for Erosion Control | Each |

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

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buffer, wetland, endangered vegetation, culturally sensitive areas or water. The fence shall be installed prior to any land disturbing activities.

Interior boundaries for jurisdictional areas noted above shall be delineated by stakes and highly visible flagging.

Jurisdictional boundaries at staging areas, waste sites, or borrow pits, whether considered outside or interior boundaries shall be delineated by stakes and highly visible flagging.

Materials

(A) Safety Fencing

Polyethylene or polypropylene fence shall be a highly visible preconstructed safety fence approved by the Engineer. The fence material shall have an ultraviolet coating.

Either wood posts or steel posts may be used. Wood posts shall be hardwood with a wedge or pencil tip at one end, and shall be at least 5 ft. in length with a minimum nominal 2" x 2" cross section. Steel posts shall be at least 5 ft. in length, and have a minimum weight of 0.85 lb./ft. of length.

(B) Boundary Flagging

Wooden stakes shall be 4 feet in length with a minimum nominal 3/4" x 1-3/4" cross section. The flagging shall be at least 1" in width. The flagging material shall be vinyl and shall be orange in color and highly visible.

Construction Methods

No additional clearing and grubbing is anticipated for the installation of this fence. The fence shall be erected to conform to the general contour of the ground.

(A) Safety Fencing

Posts shall be set at a maximum spacing of 10 ft., maintained in a vertical position and hand set or set with a post driver. Posts shall be installed a minimum of 2 ft. into the ground. If hand set, all backfill material shall be thoroughly tamped. Wood posts may be sharpened to a dull point if power driven. Posts damaged by power driving shall be removed and replaced prior to final acceptance. The tops of all wood posts shall be cut at a 30-degree angle. The wood posts may, at the option of the Contractor, be cut at this angle either before or after the posts are erected.

The fence geotextile shall be attached to the wood posts with one 2" galvanized wire staple across each cable or to the steel posts with wire or other acceptable means.

Place construction stakes to establish the location of the safety fence in accordance with Article 105-9 or Article 801-1 of the *Standard Specifications*. No direct pay will be made for the staking of the safety fence. All stakeouts for safety fence shall be considered incidental to the work being paid for as "Construction Surveying", except that where there is no pay item for construction surveying, all safety fence stakeout will be performed by state forces.

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The Contractor shall be required to maintain the safety fence in a satisfactory condition for the duration of the project as determined by the Engineer.

(B) Boundary Flagging

Boundary flagging delineation of interior boundaries shall consist of wooden stakes on 25 feet maximum intervals with highly visible orange flagging attached. Stakes shall be installed a minimum of 6” into the ground. Interior boundaries may be staked on a tangent that runs parallel to buffer but must not encroach on the buffer at any location. Interior boundaries of hand clearing shall be identified with a different colored flagging to distinguish it from mechanized clearing.

Boundary flagging delineation of interior boundaries will be placed in accordance with Article 105-9 or Article 801-1 of the *Standard Specifications*. No direct pay will be made for delineation of the interior boundaries. This delineation will be considered incidental to the work being paid for as *Construction Surveying*, except that where there is no pay item or construction surveying the cost of boundary flagging delineation shall be included in the unit prices bid for the various items in the contract. Installation for delineation of all jurisdictional boundaries at staging areas, waste sites, or borrow pits shall consist of wooden stakes on 25 feet maximum intervals with highly visible orange flagging attached. Stakes shall be installed a minimum of 6” into the ground. Additional flagging may be placed on overhanging vegetation to enhance visibility but does not substitute for installation of stakes.

Installation of boundary flagging for delineation of all jurisdictional boundaries at staging areas, waste sites, or borrow pits shall be performed in accordance with Subarticle 230-4(B)(5) or Subarticle 802-2(F) of the *Standard Specifications*. No direct pay will be made for this delineation, as the cost of same shall be included in the unit prices bid for the various items in the contract.

The Contractor shall be required to maintain alternative stakes and highly visible flagging in a satisfactory condition for the duration of the project as determined by the Engineer.

Measurement and Payment

Safety Fence will be measured and paid as the actual number of linear feet of polyethylene or polypropylene fence installed in place and accepted. Such payment will be full compensation including but not limited to furnishing and installing fence geotextile with necessary posts and post bracing, staples, tie wires, tools, equipment and incidentals necessary to complete this work.

Payment will be made under:

| Pay Item | | Pay Unit |
|-----------------|--|-----------------|
| Safety Fence | | Linear Foot |

WATTLE:

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

1060,1630,1631

T1

Description

Wattles are tubular products consisting of excelsior fibers encased in synthetic netting. Wattles are used on slopes or channels to intercept runoff and act as a velocity break. Wattles are to be placed at locations shown on the plans or as directed. Installation shall follow the detail provided in the plans and as directed. Work includes furnishing materials, installation of wattles, matting installation, and removing wattles.

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Materials

Wattle shall meet the following specifications:

| | |
|------------------------------------|----------------------------------|
| 100% Curled Wood(Excelsior) Fibers | |
| Minimum Diameter | 12 in. |
| Minimum Density | 2.5 lb/ft ³ +/- 10% |
| Net Material | Synthetic |
| Net Openings | 1 in. x 1 in. |
| Net Configuration | Totally Encased |
| Minimum Weight | 20 lb. +/- 10% per 10 ft. length |

Stakes shall be used as anchors.

Provide hardwood stakes a minimum of 2-ft. long with a 2" x 2" nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving down into the underlying soil.

Matting shall meet the requirements of Article 1060-8 of the *2018 Standard Specifications*, or shall meet specifications provided elsewhere in this contract.

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

Construction Methods

Wattles shall be secured to the soil by wire staples approximately every 1 linear foot and at the end of each section of wattle. A minimum of 4 stakes shall be installed on the downstream side of the wattle with a maximum spacing of 2 linear feet along the wattle, and according to the detail. Install a minimum of 2 stakes on the upstream side of the wattle according to the detail provided in the plans. Stakes shall be driven into the ground a minimum of 10" with no more than 2" projecting from the top of the wattle. Drive stakes at an angle according to the detail provided in the plans.

Only install wattle(s) to a height in ditch so flow will not wash around wattle and scour ditch slopes and according to the detail provided in the plans and as directed. Overlap adjoining sections of wattles a minimum of 6".

Installation of matting shall be in accordance with the detail provided in the plans, and in accordance with Article 1631-3 of the *2018 Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

The Contractor shall maintain the wattles until the project is accepted or until the wattles are removed, and shall remove and dispose of silt accumulations at the wattles when so directed in accordance with the requirements of Section 1630 of the *2018 Standard Specifications*.

Measurement and Payment

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*.

Matting will be measured and paid for in accordance with Article 1631-4 of the *2018 Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

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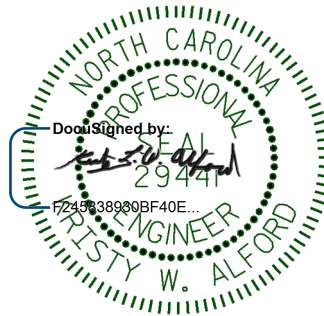
Payment will be made under:

Pay Item
Wattle

Pay Unit
Linear Foot

Project Special Provisions
Structures

| | | |
|--|------------|-------|
| Scope of Work ----- | | BP-2 |
| Submittal of Working Drawings ----- | (06-28-17) | BP-2 |
| Falsework and Formwork ----- | (04-05-12) | BP-8 |
| Crane Safety ----- | (06-20-19) | BP-14 |
| Grout for Structures ----- | (12-01-17) | BP-15 |
| Epoxy Resin Injection----- | (02-11-19) | BP-16 |
| Shotcrete Repairs----- | (02-11-19) | BP-20 |
| Concrete Repairs----- | (02-11-19) | BP-25 |
| Pourable Silicone Joint Sealant----- | (SPECIAL) | BP-28 |
| Overlay Surface Preparation for Polyester Polymer Concrete----- | (SPECIAL) | BP-30 |
| Polyester Polymer Concrete Bridge Deck Overlay | (SPECIAL) | BP-36 |
| #57 Stone | (SPECIAL) | BP-47 |
| Epoxy Coating and Debris Removal | (SPECIAL) | BP-47 |



6/28/2019

SCOPE OF WORK

This work shall consist of furnishing all labor, equipment, and materials to overlay the existing bridge decks with polyester polymer concrete and complete substructure repairs as directed in the plans. Work includes: portable lighting; existing bridge deck surface preparation; milling existing bridge deck; removing bridge deck concrete using hydro-demolition and scarification methods; overlaying the prepared bridge deck with polyester polymer concrete; installing pourable silicone joints; disposal of waste material; grooving bridge deck; pavement markings; substructure repairs using concrete, shotcrete, and epoxy resin injection; seeding and mulching all grassed areas disturbed; and all incidental items necessary to complete the project as specified and shown on the plans. No separate payment will be made for portable lighting as the cost of such is incidental to the work being performed.

Work will be performed on the existing bridges at the following locations:

- Duplin County Bridge #427 – On I-40 WBL over NC 11
- Duplin County Bridge #428 – On I-40 EBL over NC 11
- Duplin County Bridge # 429 – On I-40 EBL over NC 41
- Duplin County Bridge #430 – On I-40 WBL over NC 41
- Duplin County Bridge #435 – On I-40 WBL over Seaboard Coastline Railroad
- Duplin County Bridge #436 – On I-40 EBL over Seaboard Coastline Railroad
- Duplin County Bridge #437 – On I-40 WBL/NC 24 over Seaboard Coastline Railroad and US 117
- Duplin County Bridge #438 – On I-40 EBL/NC 24 over Seaboard Coastline Railroad and US 117
- Duplin County Bridge #449 – On I-40 WBL over NC 24
- Duplin County Bridge #450 – On I-40 EBL over NC 24
- Pender County Bridge #234 – On I-40 WBL over Rockfish Creek
- Pender County Bridge #235 – On I-40 EBL over Rockfish Creek

Contractor shall provide all necessary access; provide all traffic control; provide all staging areas, material storage, waste disposal, provide environmental controls to limit loss of materials from collection of hydro-demolition water, sawing equipment, and chipping equipment; and all else necessary to complete the work.

The contractor shall be responsible for fulfilling all requirements of the NCDOT Standard Specifications for Roads and Structures dated January 2018, except as otherwise specified herein.

SUBMITTAL OF WORKING DRAWINGS**(6-28-17)****1.0 GENERAL**

Submit working drawings in accordance with Article 105-2 of the *Standard Specifications* and this provision. For this provision, “submittals” refers to only those listed in this provision. The list of submittals contained herein does not represent a list of required

submittals for the project. Submittals are only necessary for those items as required by the contract. Make submittals that are not specifically noted in this provision directly to the Engineer. Either the Structures Management Unit or the Geotechnical Engineering Unit or both units will jointly review submittals.

If a submittal contains variations from plan details or specifications or significantly affects project cost, field construction or operations, discuss the submittal with and submit all copies to the Engineer. State the reason for the proposed variation in the submittal. To minimize review time, make sure all submittals are complete when initially submitted. Provide a contact name and information with each submittal. Direct any questions regarding submittal requirements to the Engineer, Structures Management Unit contacts or the Geotechnical Engineering Unit contacts noted below.

In order to facilitate in-plant inspection by NCDOT and approval of working drawings, provide the name, address and telephone number of the facility where fabrication will actually be done if different than shown on the title block of the submitted working drawings. This includes, but is not limited to, precast concrete items, prestressed concrete items and fabricated steel or aluminum items.

2.0 ADDRESSES AND CONTACTS

For submittals to the Structures Management Unit, use the following addresses:

Via US mail:

Mr. B. C. Hanks, P. E.
State Structures Engineer
North Carolina Department
of Transportation
Structures Management Unit
1581 Mail Service Center
Raleigh, NC 27699-1581

Attention: Mr. J. L. Bolden, P. E.

Via other delivery service:

Mr. B. C. Hanks, P. E.
State Structures Engineer
North Carolina Department
of Transportation
Structures Management Unit
1000 Birch Ridge Drive
Raleigh, NC 27610

Attention: Mr. J. L. Bolden, P. E.

Submittals may also be made via email.

Send submittals to:

jlbolden@ncdot.gov (James Bolden)

Send an additional e-copy of the submittal to the following address:

eomile@ncdot.gov (Emmanuel Omile)

mrorie@ncdot.gov (Madonna Rorie)

For submittals to the Geotechnical Engineering Unit, use the following addresses:

For projects in Divisions 1-7, use the following Eastern Regional Office address:

Via US mail:

Via other delivery service:

Mr. Chris Kreider, P. E.
Eastern Regional Geotechnical
Manager
North Carolina Department
of Transportation
Geotechnical Engineering Unit
Eastern Regional Office
1570 Mail Service Center
Raleigh, NC 27699-1570

Mr. Chris Kreider, P. E.
Eastern Regional Geotechnical
Manager
North Carolina Department
of Transportation
Geotechnical Engineering Unit
Eastern Regional Office
3301 Jones Sausage Road, Suite 100
Garner, NC 27529

Via Email: EastGeotechnicalSubmittal@ncdot.gov

For projects in Divisions 8-14, use the following Western Regional Office address:

Via US mail or other delivery service:

Mr. Eric Williams, P. E.
Western Regional Geotechnical
Manager
North Carolina Department
of Transportation
Geotechnical Engineering Unit
Western Regional Office
5253 Z Max Boulevard
Harrisburg, NC 28075

Via Email: WestGeotechnicalSubmittal@ncdot.gov

The status of the review of structure-related submittals sent to the Structures Management Unit can be viewed from the Unit's website, via the "Drawing Submittal Status" link.

The status of the review of geotechnical-related submittals sent to the Geotechnical Engineering Unit can be viewed from the Unit's website, via the "Geotechnical Construction Submittals" link.

Direct any questions concerning submittal review status, review comments or drawing markups to the following contacts:

| | |
|--|---|
| Primary Structures Contact: | James Bolden (919) 707 – 6408 (919) 250 – 4082 facsimile jlbolden@ncdot.gov |
| Secondary Structures Contacts: | Emmanuel Omile (919) 707 – 6451 Madonna Rorie (919) 707 – 6508 6508 |
| Eastern Regional Geotechnical Contact (Divisions 1-7): | Chris Kreider (919) 662 – 4710 ckreider@ncdot.gov |

Western Regional Geotechnical Contact (Divisions 8-14):

Eric Williams (704) 455 – 8902
ewilliams3@ncdot.gov

3.0 SUBMITTAL COPIES

Furnish one complete copy of each submittal, including all attachments, to the Engineer. At the same time, submit the number of hard copies shown below of the same complete submittal directly to the Structures Management Unit and/or the Geotechnical Engineering Unit.

The first table below covers “Structure Submittals”. The Engineer will receive review comments and drawing markups for these submittals from the Structures Management Unit. The second table in this section covers “Geotechnical Submittals”. The Engineer will receive review comments and drawing markups for these submittals from the Geotechnical Engineering Unit.

Unless otherwise required, submit one set of supporting calculations to either the Structures Management Unit or the Geotechnical Engineering Unit unless both units require submittal copies in which case submit a set of supporting calculations to each unit. Provide additional copies of any submittal as directed.

STRUCTURE SUBMITTALS

| Submittal | Copies Required by Structures Management Unit | Copies Required by Geotechnical Engineering Unit | Contract Reference Requiring Submittal ¹ |
|--|--|---|--|
| Arch Culvert Falsework | 5 | 0 | Plan Note, SN Sheet & “Falsework and Formwork” |
| Box Culvert Falsework ⁷ | 5 | 0 | Plan Note, SN Sheet & “Falsework and Formwork” |
| Cofferdams | 6 | 2 | Article 410-4 |
| Foam Joint Seals ⁶ | 9 | 0 | “Foam Joint Seals” |
| Expansion Joint Seals (hold down plate type with base angle) | 9 | 0 | “Expansion Joint Seals” |
| Expansion Joint Seals (modular) | 2, then 9 | 0 | “Modular Expansion Joint Seals” |

| I-5940 | BP-6 | | Duplin and Pender County |
|--|---------------------------|---|---|
| Expansion Joint Seals (strip seals) | 9 | 0 | “Strip Seals” |
| Falsework & Forms ² (substructure) | 8 | 0 | Article 420-3 & “Falsework and Formwork” |
| Falsework & Forms (superstructure) | 8 | 0 | Article 420-3 & “Falsework and Formwork” |
| Girder Erection over Railroad | 5 | 0 | Railroad Provisions |
| Maintenance and Protection of Traffic Beneath Proposed Structure | 8 | 0 | “Maintenance and Protection of Traffic Beneath Proposed Structure at Station ____” |
| Metal Bridge Railing | 8 | 0 | Plan Note |
| Metal Stay-in-Place Forms | 8 | 0 | Article 420-3 |
| Metalwork for Elastomeric Bearings ^{4,5} | 7 | 0 | Article 1072-8 |
| Miscellaneous Metalwork ^{4,5} | 7 | 0 | Article 1072-8 |
| Disc Bearings ⁴ | 8 | 0 | “Disc Bearings” |
| Overhead and Digital Message Signs (DMS) (metalwork and foundations) | 13 | 0 | Applicable Provisions |
| Placement of Equipment on Structures (cranes, etc.) | 7 | 0 | Article 420-20 |
| Precast Concrete Box Culverts | 2, then 1 reproducible | 0 | “Optional Precast Reinforced Concrete Box Culvert at Station ____” |
| Prestressed Concrete Cored Slab (detensioning sequences) ³ | 6 | 0 | Article 1078-11 |
| Prestressed Concrete Deck Panels | 6 and 1 reproducible | 0 | Article 420-3 |
| Prestressed Concrete Girder (strand elongation and detensioning sequences) | 6 | 0 | Articles 1078-8 and 1078- 11 |
| Removal of Existing Structure over Railroad | 5 | 0 | Railroad Provisions |
| | 2, then 1 reproducible | 0 | Article 420-3 |

| | | | |
|--|---------------------------|---|---|
| Revised Bridge Deck Plans (adaptation to prestressed deck panels) | | | |
| Revised Bridge Deck Plans (adaptation to modular expansion joint seals) | 2, then 1 reproducible | 0 | “Modular Expansion Joint Seals” |
| Sound Barrier Wall (precast items) | 10 | 0 | Article 1077-2 & “Sound Barrier Wall” |
| Sound Barrier Wall Steel Fabrication Plans ⁵ | 7 | 0 | Article 1072-8 & “Sound Barrier Wall” |
| Structural Steel ⁴ | 2, then 7 | 0 | Article 1072-8 |
| Temporary Detour Structures | 10 | 2 | Article 400-3 & “Construction, Maintenance and Removal of Temporary Structure at Station _____” |
| TFE Expansion Bearings ⁴ | 8 | 0 | Article 1072-8 |

FOOTNOTES

1. References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Articles refer to the *Standard Specifications*.
2. Submittals for these items are necessary only when required by a note on plans.
3. Submittals for these items may not be required. A list of pre-approved sequences is available from the producer or the Materials & Tests Unit.
4. The fabricator may submit these items directly to the Structures Management Unit.
5. The two sets of preliminary submittals required by Article 1072-8 of the *Standard Specifications* are not required for these items.
6. Submittals for Fabrication Drawings are not required. Submittals for Catalogue Cuts of Proposed Material are required. See Section 5.A of the referenced provision.
7. Submittals are necessary only when the top slab thickness is 18” or greater.

GEOTECHNICAL SUBMITTALS

| Submittal | Copies Required by Geotechnical | Copies Required by Structures | Contract Reference Requiring Submittal ¹ |
|-----------|---------------------------------------|-------------------------------------|--|
|-----------|---------------------------------------|-------------------------------------|--|

| | Engineering Unit | Management Unit | |
|--|-------------------------------|----------------------------|---|
| Drilled Pier Construction Plans ² | 1 | 0 | Subarticle 411-3(A) |
| Crosshole Sonic Logging (CSL) Reports ² | 1 | 0 | Subarticle 411-5(A)(2) |
| Pile Driving Equipment Data Forms ^{2,3} | 1 | 0 | Subarticle 450-3(D)(2) |
| Pile Driving Analyzer (PDA) Reports ² | 1 | 0 | Subarticle 450-3(F)(3) |
| Retaining Walls ⁴ | 1 drawings, 1 calculations | 2 drawings | Applicable Provisions |
| Temporary Shoring ⁴ | 1 drawings, 1 calculations | 2 drawings | “Temporary Shoring” & “Temporary Soil Nail Walls” |

FOOTNOTES

1. References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Subarticles refer to the *Standard Specifications*.
2. Submit one hard copy of submittal to the Engineer. Submit a second copy of submittal electronically (PDF via email), US mail or other delivery service to the appropriate Geotechnical Engineering Unit regional office. Electronic submission is preferred.
3. The Pile Driving Equipment Data Form is available from:
https://connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
See second page of form for submittal instructions.
4. Electronic copy of submittal is required. See referenced provision.

FALSEWORK AND FORMWORK**(4-5-12)****1.0 DESCRIPTION**

Use this Special Provision as a guide to develop temporary works submittals required by the Standard Specifications or other provisions; no additional submittals are required herein. Such temporary works include, but are not limited to, falsework and formwork.

Falsework is any temporary construction used to support the permanent structure until it becomes self-supporting. Formwork is the temporary structure or mold used to retain plastic or fluid concrete in its designated shape until it hardens. Access scaffolding is a temporary

structure that functions as a work platform that supports construction personnel, materials, and tools, but is not intended to support the structure. Scaffolding systems that are used to temporarily support permanent structures (as opposed to functioning as work platforms) are considered to be falsework under the definitions given. Shoring is a component of falsework such as horizontal, vertical, or inclined support members. Where the term “temporary works” is used, it includes all of the temporary facilities used in bridge construction that do not become part of the permanent structure.

Design and construct safe and adequate temporary works that will support all loads imposed and provide the necessary rigidity to achieve the lines and grades shown on the plans in the final structure.

2.0 MATERIALS

Select materials suitable for temporary works; however, select materials that also ensure the safety and quality required by the design assumptions. The Engineer has authority to reject material on the basis of its condition, inappropriate use, safety, or nonconformance with the plans. Clearly identify allowable loads or stresses for all materials or manufactured devices on the plans. Revise the plan and notify the Engineer if any change to materials or material strengths is required.

3.0 DESIGN REQUIREMENTS

A. Working Drawings

Provide working drawings for items as specified in the contract, or as required by the Engineer, with design calculations and supporting data in sufficient detail to permit a structural and safety review of the proposed design of the temporary work.

On the drawings, show all information necessary to allow the design of any component to be checked independently as determined by the Engineer.

When concrete placement is involved, include data such as the drawings of proposed sequence, rate of placement, direction of placement, and location of all construction joints. Submit the number of copies as called for by the contract.

When required, have the drawings and calculations prepared under the guidance of, and sealed by, a North Carolina Registered Professional Engineer who is knowledgeable in temporary works design.

If requested by the Engineer, submit with the working drawings manufacturer’s catalog data listing the weight of all construction equipment that will be supported on the temporary work. Show anticipated total settlements and/or deflections of falsework and forms on the working drawings. Include falsework footing settlements, joint take-up, and deflection of beams or girders.

As an option for the Contractor, overhang falsework hangers may be uniformly spaced, at a maximum of 36 inches, provided the following conditions are met:

| Member Type (PCG) | Member Depth, (inches) | Max. Overhang Width, (inches) | Max. Slab Edge Thickness, (inches) | Max. Screenshot Wheel Weight, (lbs.) | Bracket Min. Vertical Leg Extension, (inches) |
|-------------------|------------------------|-------------------------------|------------------------------------|--------------------------------------|---|
| II | 36 | 39 | 14 | 2000 | 26 |
| III | 45 | 42 | 14 | 2000 | 35 |
| IV | 54 | 45 | 14 | 2000 | 44 |
| MBT | 63 | 51 | 12 | 2000 | 50 |
| MBT | 72 | 55 | 12 | 1700 | 48 |

Overhang width is measured from the centerline of the girder to the edge of the deck slab.

For Type II, III & IV prestressed concrete girders (PCG), 45-degree cast-in-place half hangers and rods must have a minimum safe working load of 6,000 lbs.

For MBT prestressed concrete girders, 45-degree angle holes for falsework hanger rods shall be cast through the girder top flange and located, measuring along the top of the member, 1'-2 1/2" from the edge of the top flange. Hanger hardware and rods must have a minimum safe working load of 6,000 lbs.

The overhang bracket provided for the diagonal leg shall have a minimum safe working load of 3,750 lbs. The vertical leg of the bracket shall extend to the point that the heel bears on the girder bottom flange, no closer than 4 inches from the bottom of the member. However, for 72-inch members, the heel of the bracket shall bear on the web, near the bottom flange transition.

Provide adequate overhang falsework and determine the appropriate adjustments for deck geometry, equipment, casting procedures and casting conditions.

If the optional overhang falsework spacing is used, indicate this on the falsework submittal and advise the girder producer of the proposed details. Failure to notify the Engineer of hanger type and hanger spacing on prestressed concrete girder casting drawings may delay the approval of those drawings.

Falsework hangers that support concentrated loads and are installed at the edge of thin top flange concrete girders (such as bulb tee girders) shall be spaced so as not to exceed 75% of the manufacturer's stated safe working load. Use of dual leg hangers (such as Meadow Burke HF-42 and HF-43) are not allowed on concrete girders with thin top flanges. Design the falsework and forms supporting deck slabs and overhangs on girder bridges so that there will be no differential settlement between the girders and the deck forms during placement of deck concrete.

When staged construction of the bridge deck is required, detail falsework and forms for screed and fluid concrete loads to be independent of any previous deck pour components when the mid-span girder deflection due to deck weight is greater than 3/4".

Note on the working drawings any anchorages, connectors, inserts, steel sleeves or other such devices used as part of the falsework or formwork that remains in the permanent structure. If the plan notes indicate that the structure contains the necessary corrosion protection required for a Corrosive Site, epoxy coat, galvanize or metalize these devices. Electroplating will not be allowed. Any coating required by the Engineer will be considered incidental to the various pay items requiring temporary works.

Design falsework and formwork requiring submittals in accordance with the 1995 AASHTO *Guide Design Specifications for Bridge Temporary Works* except as noted herein.

1. Wind Loads

Table 2.2 of Article 2.2.5.1 is modified to include wind velocities up to 110 mph. In addition, Table 2.2A is included to provide the maximum wind speeds by county in North Carolina.

Table 2.2 - Wind Pressure Values

| Height Zone feet above ground | Pressure, lb/ft ² for Indicated Wind Velocity, mph | | | | |
|----------------------------------|---|----|----|-----|-----|
| | 70 | 80 | 90 | 100 | 110 |
| 0 to 30 | 15 | 20 | 25 | 30 | 35 |
| 30 to 50 | 20 | 25 | 30 | 35 | 40 |
| 50 to 100 | 25 | 30 | 35 | 40 | 45 |
| over 100 | 30 | 35 | 40 | 45 | 50 |

2. Time of Removal

The following requirements replace those of Article 3.4.8.2.

Do not remove forms until the concrete has attained strengths required in Article 420-16 of the Standard Specifications and these Special Provisions.

Do not remove forms until the concrete has sufficient strength to prevent damage to the surface.

Table 2.2A - Steady State Maximum Wind Speeds by Counties in North Carolina

| COUNTY | 25 YR (mph) | COUNTY | 25 YR (mph) | COUNTY | 25 YR (mph) |
|------------|----------------|-------------|----------------|--------------|----------------|
| Alamance | 70 | Franklin | 70 | Pamlico | 100 |
| Alexander | 70 | Gaston | 70 | Pasquotank | 100 |
| Alleghany | 70 | Gates | 90 | Pender | 100 |
| Anson | 70 | Graham | 80 | Perquimans | 100 |
| Ashe | 70 | Granville | 70 | Person | 70 |
| Avery | 70 | Greene | 80 | Pitt | 90 |
| Beaufort | 100 | Guilford | 70 | Polk | 80 |
| Bertie | 90 | Halifax | 80 | Randolph | 70 |
| Bladen | 90 | Harnett | 70 | Richmond | 70 |
| Brunswick | 100 | Haywood | 80 | Robeson | 80 |
| Buncombe | 80 | Henderson | 80 | Rockingham | 70 |
| Burke | 70 | Hertford | 90 | Rowan | 70 |
| Cabarrus | 70 | Hoke | 70 | Rutherford | 70 |
| Caldwell | 70 | Hyde | 110 | Sampson | 90 |
| Camden | 100 | Iredell | 70 | Scotland | 70 |
| Carteret | 110 | Jackson | 80 | Stanley | 70 |
| Caswell | 70 | Johnston | 80 | Stokes | 70 |
| Catawba | 70 | Jones | 100 | Surry | 70 |
| Cherokee | 80 | Lee | 70 | Swain | 80 |
| Chatham | 70 | Lenoir | 90 | Transylvania | 80 |
| Chowan | 90 | Lincoln | 70 | Tyrell | 100 |
| Clay | 80 | Macon | 80 | Union | 70 |
| Cleveland | 70 | Madison | 80 | Vance | 70 |
| Columbus | 90 | Martin | 90 | Wake | 70 |
| Craven | 100 | McDowell | 70 | Warren | 70 |
| Cumberland | 80 | Mecklenburg | 70 | Washington | 100 |
| Currituck | 100 | Mitchell | 70 | Watauga | 70 |
| Dare | 110 | Montgomery | 70 | Wayne | 80 |
| Davidson | 70 | Moore | 70 | Wilkes | 70 |
| Davie | 70 | Nash | 80 | Wilson | 80 |
| Duplin | 90 | New Hanover | 100 | Yadkin | 70 |
| Durham | 70 | Northampton | 80 | Yancey | 70 |
| Edgecombe | 80 | Onslow | 100 | | |
| Forsyth | 70 | Orange | 70 | | |

B. Review and Approval

The Engineer is responsible for the review and approval of temporary works' drawings.

Submit the working drawings sufficiently in advance of proposed use to allow for their review, revision (if needed), and approval without delay to the work.

The time period for review of the working drawings does not begin until complete drawings and design calculations, when required, are received by the Engineer.

Do not start construction of any temporary work for which working drawings are required until the drawings have been approved. Such approval does not relieve the Contractor of the responsibility for the accuracy and adequacy of the working drawings.

4.0 CONSTRUCTION REQUIREMENTS

All requirements of Section 420 of the Standard Specifications apply.

Construct temporary works in conformance with the approved working drawings. Ensure that the quality of materials and workmanship employed is consistent with that assumed in the design of the temporary works. Do not weld falsework members to any portion of the permanent structure unless approved. Show any welding to the permanent structure on the approved construction drawings.

Provide tell-tales attached to the forms and extending to the ground, or other means, for accurate measurement of falsework settlement. Make sure that the anticipated compressive settlement and/or deflection of falsework does not exceed 1 inch. For cast-in-place concrete structures, make sure that the calculated deflection of falsework flexural members does not exceed 1/240 of their span regardless of whether or not the deflection is compensated by camber strips.

A. Maintenance and Inspection

Inspect and maintain the temporary work in an acceptable condition throughout the period of its use. Certify that the manufactured devices have been maintained in a condition to allow them to safely carry their rated loads. Clearly mark each piece so that its capacity can be readily determined at the job site.

Perform an in-depth inspection of an applicable portion(s) of the temporary works, in the presence of the Engineer, not more than 24 hours prior to the beginning of each concrete placement. Inspect other temporary works at least once a month to ensure that they are functioning properly. Have a North Carolina Registered Professional Engineer inspect the cofferdams, shoring, sheathing, support of excavation structures, and support systems for load tests prior to loading.

B. Foundations

Determine the safe bearing capacity of the foundation material on which the supports for temporary works rest. If required by the Engineer, conduct load tests to verify proposed bearing capacity values that are marginal or in other high-risk situations.

The use of the foundation support values shown on the contract plans of the permanent structure is permitted if the foundations are on the same level and on the same soil as those of the permanent structure.

Allow for adequate site drainage or soil protection to prevent soil saturation and washout of the soil supporting the temporary works supports.

If piles are used, the estimation of capacities and later confirmation during construction using standard procedures based on the driving characteristics of the pile is permitted. If preferred, use load tests to confirm the estimated capacities; or, if required by the Engineer conduct load tests to verify bearing capacity values that are marginal or in other high risk situations.

The Engineer reviews and approves the proposed pile and soil bearing capacities.

5.0 REMOVAL

Unless otherwise permitted, remove and keep all temporary works upon completion of the work. Do not disturb or otherwise damage the finished work.

Remove temporary works in conformance with the contract documents. Remove them in such a manner as to permit the structure to uniformly and gradually take the stresses due to its own weight.

6.0 METHOD OF MEASUREMENT

Unless otherwise specified, temporary works will not be directly measured.

7.0 BASIS OF PAYMENT

Payment at the contract unit prices for the various pay items requiring temporary works will be full compensation for the above falsework and formwork.

CRANE SAFETY**(6-20-19)**

Comply with the manufacturer specifications and limitations applicable to the operation of any and all cranes and derricks. Prime contractors, sub-contractors, and fully operated rental companies shall comply with the current Occupational Safety and Health Administration (OSHA) regulations.

Submit all items listed below to the Engineer prior to beginning crane operations. Changes in personnel or equipment must be reported to the Engineer and all applicable items listed below must be updated and submitted prior to continuing with crane operations.

CRANE SAFETY SUBMITTAL LIST

- A. **Competent Person:** Provide the name and qualifications of the “Competent Person” responsible for crane safety and lifting operations. The named competent person will have the responsibility and authority to stop any work activity due to safety concerns.
- B. **Riggers:** Provide the qualifications and experience of the persons responsible for rigging operations. Qualifications and experience should include, but not be limited to, weight calculations, center of gravity determinations, selection and inspection of sling and rigging equipment, and safe rigging practices.
- C. **Crane Inspections:** Inspection records for all cranes shall be current and readily accessible for review upon request.
- D. **Certifications:** Crane operators shall be certified by the National Commission for the Certification of Crane Operators (NCCCO) or the National Center for Construction Education and Research (NCCER). Other approved nationally accredited programs will be considered upon request. In addition, crane operators shall have a current CDL medical card. Submit a list of crane operator(s) and include current certification for each type of crane operated (small hydraulic, large hydraulic, small lattice, large lattice) and medical evaluations for each operator.

GROUT FOR STRUCTURES

(12-1-17)

DESCRIPTION

This special provision addresses grout for use in pile blockouts, grout pockets, shear keys, dowel holes and recesses for structures. This provision does not apply to grout placed in post-tensioning ducts for bridge beams, girders, decks, end bent caps, or bent caps. Mix and place grout in accordance with the manufacturer’s recommendations, the applicable sections of the Standard Specifications and this provision.

MATERIAL REQUIREMENTS

Unless otherwise noted on the plans, use a Type 3 Grout in accordance with Section 1003 of the Standard Specifications.

Initial setting time shall not be less than 10 minutes when tested in accordance with ASTM C266.

Construction loading and traffic loading shall not be allowed until the 3 day compressive strength is achieved.

SAMPLING AND PLACEMENT

Place and maintain components in final position until grout placement is complete and accepted. Concrete surfaces to receive grout shall be free of defective concrete, laitance, oil, grease and other foreign matter. Saturate concrete surfaces with clean water and remove excess water prior to placing grout.

BASIS OF PAYMENT

No separate payment will be made for "Grout for Structures". The cost of the material, equipment, labor, placement, and any incidentals necessary to complete the work shall be considered incidental to the structure item requiring grout.

EPOXY RESIN INJECTION**(2-11-19)****GENERAL**

For repairing cracks, an applicator certified by the manufacturer of epoxy injection system to be used is required to perform the epoxy resin injection. The Contractor shall submit documentation that indicates the firm, supervisor and the workmen have completed an instruction program in the methods of restoring concrete structures utilizing the epoxy injection process and have five (5) years of relative experience with a record of satisfactory performance on similar projects.

The Contractor furnishes all materials, tools, equipment, appliances, labor and supervision required when repairing cracks with the injection of an epoxy resin adhesive.

SCOPE OF WORK

Using Epoxy Resin Injection, repair all cracks 5 mils (125 μm) wide or greater on the end bent caps and interior bent columns and caps.

Repair the column cracks to the top of the footings. Make the underwater repairs when water surface elevation is low and the water is still. For underwater repairs, use manufacturer recommended materials.

Repair any crack, void, honeycomb or spall area unsuitable for repair by injection with epoxy mortar.

COOPERATION

Cooperate and coordinate with the Technical Representative of the epoxy resin manufacturer for satisfactory performance of the work.

Have the Technical Representative present when the job begins and until the Engineer is assured that his service is no longer needed.

The expense of having this representative on the job is the Contractor's responsibility and no direct payment will be made for this expense.

TESTING

The North Carolina Department of Transportation Materials and Tests Unit will obtain cores from the repaired concrete for testing. If the failure plane is located at the repaired crack, a minimum compressive strength of 3,000 psi is required of these cores.

MATERIAL PROPERTIES

Provide a two-component structural epoxy adhesive for injection into cracks or other voids. Provide modified epoxy resin (Component "A") that conforms to the following requirements:

| | Test Method | Specification Requirements |
|---------------------------|---------------------------------------|----------------------------|
| Viscosity @ 40 ± 3°F, cps | Brookfield RVT Spindle No. 4 @ 20 rpm | 6,000 – 8,000 |
| Viscosity @ 77 ± 3°F, cps | Brookfield RVT Spindle No. 2 @ 20 rpm | 400 - 700 |
| Epoxide Equivalent Weight | ASTM D1652 | 152 - 168 |
| Ash Content, % | ASTM D482 | 1 max. |

Provide the amine curing agent (Component "B") used with the epoxy resin that meets the following requirements:

| | Test Method | Specification Requirements |
|--|---------------------------------------|----------------------------|
| Viscosity @ 40 ± 3°F, cps | Brookfield RVT Spindle No. 2 @ 20 rpm | 700 - 1400 |
| Viscosity @ 77 ± 3°F, cps | Brookfield RVT Spindle No. 2 @ 20 rpm | 105 - 240 |
| Amine Value, mg KOH/g | ASTM D664* | 490 - 560 |
| Ash Content, % | ASTM D482 | 1 max. |
| * Method modified to use perchloric acid in acetic acid. | | |

Certify that the Uncured Adhesive, when mixed in the mix ratio that the material supplier specifies, has the following properties:

- Pot Life (60 gram mass)
 - @ 77 ± 3°F - 15 minutes minimum
 - @ 100 ± 3°F - 5 minutes minimum

Certify that the Adhesive, when cured for seven (7) days at $77 \pm 3^\circ\text{F}$ unless otherwise specified, has the following properties:

| | Test Method | Specification Requirements |
|---|-------------|--|
| Ultimate Tensile Strength | ASTM D638 | 7,000 psi (min.) |
| Tensile Elongation at Break | ASTM D638 | 4% max. |
| Flexural Strength | ASTM D790 | 10,000 psi (min.) |
| Flexural Modulus | ASTM D790 | 3.5×10^5 psi |
| Compressive Yield Strength | ASTM D695 | 11,000 psi (min.) |
| Compressive Modulus | ASTM D695 | $2.0 - 3.5 \times 10^5$ psi |
| Heat Deflection Temperature Cured 28 days @ $77 \pm 3^\circ\text{F}$ | ASTM D648* | 125°F min. 135°F min. |
| Slant Shear Strength, 5,000 psi (34.5 MPa) compressive strength concrete Cured 3 days @ 40°F wet concrete Cured 7 days @ 40°F wet concrete Cured 1 day @ 77°F dry concrete | AASHTO T237 | 3,500 psi (min.) 4,000 psi (min.) 5,000 psi (min.) |
| * Cure test specimens so the peak exothermic temperature does not exceed 77°F. | | |

Use an epoxy bonding agent, as specified for epoxy mortar, as the surface seal (used to confine the epoxy resin during injection).

EQUIPMENT FOR INJECTION

Use portable positive displacement type pumps with interlock to provide positive ratio control of exact proportions of the two (2) components at the nozzle to meter and mix the two (2) injection adhesive components and inject the mixed adhesive into the crack. Use electric or air powered pumps that provide in-line metering and mixing.

Use injection equipment with automatic pressure control capable of discharging the mixed adhesive at any pre-set pressure up to 200 ± 5 psi and equipped with a manual pressure control override.

Use equipment capable of maintaining the volume ratio for the injection adhesive as prescribed by the manufacturer. A tolerance of $\pm 5\%$ by volume at any discharge pressure up to 200 psi is permitted.

Provide injection equipment with sensors on both the Component A and B reservoirs that automatically stop the machine when only one component is being pumped to the mixing head.

PREPARATION

Follow these steps prior to injecting the epoxy resin:

- (A) Remove all dirt, dust, grease, oil, efflorescence and other foreign matter detrimental to the bond of the epoxy injection surface seal system from the surfaces adjacent to the cracks or other areas of application. Acids and corrosives are not permitted.
- (B) Provide entry ports along the crack at intervals not less than the thickness of the concrete at that location, unless otherwise directed by the Engineer.
- (C) Apply surface seal material to the face of the crack between the entry ports. For through cracks, apply surface seal to both faces.
- (D) Allow enough time for the surface seal material to gain adequate strength before proceeding with the injection.

EPOXY INJECTION

Before epoxy adhesive injection occurs, the Contractor shall test discharge one pint of epoxy to calibrate the equipment and to demonstrate that the workmen and equipment are working properly.

Begin epoxy adhesive injection in vertical cracks at the lower entry port and continue until the epoxy adhesive appears at the next higher entry port adjacent to the entry port being pumped.

Begin epoxy adhesive injection in horizontal cracks at one end of the crack and continue as long as the injection equipment meter indicates adhesive is being dispensed or until adhesive shows at the next entry port.

When epoxy adhesive appears at the next adjacent port, stop the current injection and transfer the epoxy injection to the next adjacent port where epoxy adhesive appeared.

Perform epoxy adhesive injection continuously until cracks are completely filled. Any stoppage of injection for more than 15 minutes shall result in the injection equipment being cleaned, at no additional cost to the Department, before resuming injection.

If port to port travel of epoxy adhesive is not indicated, immediately stop the work and notify the Engineer.

FINISHING

When cracks are completely filled, allow the epoxy adhesive to cure for sufficient time to allow the removal of the surface seal without any draining or runback of epoxy material from the cracks.

Drill 4" diameter cored holes of the cured epoxy to the full depth of the crack to verify the cracks has been completely filled with epoxy. Three (3) cored holes are required for every 100 linear feet of crack to be injected, or as directed by the Engineer. The cored holes will be filled with Type 3 grout in accordance with Section 1003 of the *Standard Specifications*.

Remove the surface seal material and injection adhesive runs or spills from concrete surfaces.

Finish the face of the crack flush to the adjacent concrete, removing any indentations or protrusions caused by the placement of entry ports.

BASIS OF PAYMENT

Epoxy Resin Injection will be paid at the contract unit price per linear foot. Such payment will be full compensation for all materials, tools, equipment, labor, and for all incidentals necessary to complete the work.

| Pay Item | Pay Unit |
|-----------------------|-----------------|
| Epoxy Resin Injection | Linear Foot |

SHOTCRETE REPAIRS

(2-11-19)

GENERAL

The work covered by this special provision consists of removing deteriorated concrete from the structure in accordance with the limits, depth and details shown on the plans, described herein and as established by the Engineer. This work also includes removing and disposing all loose debris, cleaning and repairing reinforcing steel and applying structural shotcrete.

The location and extent of repairs shown on the plans are general in nature. The Engineer shall determine the extent of removal in the field based on an evaluation of the condition of the exposed surfaces.

Any portion of the structure that is damaged from construction operations shall be repaired to the Engineer's satisfaction, at no extra cost to the Department.

MATERIAL REQUIREMENTS

Use prepackaged shotcrete conforming to the requirements of ASTM C1480, the applicable sections of the *Standard Specifications* and the following:

| Test Description | Test Method | Age (Days) | Specified Requirements |
|---|-------------|------------|------------------------|
| Silica Fume (%) | ASTM C1240 | - | 10 (Max.) |
| Water/Cementitious Materials Ratio | - | - | 0.40 (Max.) |
| Air Content - As Shot (%) | ASTM C231 | - | 4 ± 1 |
| Slump - As Shot (Range in inches) | ASTM C143 | - | 2 - 3 |
| Minimum Compressive Strength (psi) | ASTM C39 | 7 28 | 3,000 5,000 |
| Minimum Bond Pull-off Strength (psi) | ASTM C1583 | 28 | 145 |
| Rapid Chloride Permeability Tests (range in coulombs) | ASTM C1202 | - | 100 - 1000 |

Admixtures are not allowed unless approved by the Engineer. Store shotcrete in an environment where temperatures remain above 40°F and less than 95°F

All equipment must operate in accordance with the manufacturer's specifications and material must be placed within the recommended time.

QUALITY CONTROL

(A) Qualification of Shotcrete Contractor

The shotcrete Contractor shall provide proof of experience by submitting a description of jobs similar in size and character that have been completed within the last five (5) years. The name, address and telephone number of references for the submitted projects shall also be furnished. Failure to provide appropriate documentation will result in the rejection of the proposed shotcrete contractor.

(B) Qualification of Nozzleman

The shotcrete Contractor's nozzleman shall be certified by the American Concrete Institute (ACI). Submit proof of certification to the Engineer prior to beginning repair work. The nozzleman shall maintain certification at all times while work is being performed for the Department. Failure to provide and maintain certification will result in the rejection of the proposed nozzleman.

TEMPORARY WORK PLATFORM

Prior to beginning any repair work, provide details for a sufficiently sized temporary work platform at each repair location. Design steel members to meet the requirements of the American Institute of Steel Construction Manual. Design timber members in accordance with the *National Design Specification for Stress-Grade Lumber and Its Fastenings* of the National Forest Products Association. Submit the platform design and plans for review and approval. The design and plans shall be sealed and signed by a North Carolina registered Professional Engineer. Do not install the platform until the design and plans are approved. Drilling holes in the superstructure for the purpose of attaching the platform is prohibited. Upon completion of work, remove all anchorages in the substructure and repair the substructure at no additional cost to the Department.

SURFACE PREPARATION

Prior to starting the repair operation, delineate all surfaces and areas assumed to be deteriorated by visually examining and sounding the concrete surface with a hammer or other approved method. The Engineer is the sole judge in determining the limits of deterioration.

Prior to removal, introduce a shallow saw cut approximately 1/2" in depth around the repair area at right angles to the concrete surface. Remove all deteriorated concrete 1 inch below the reinforcing steel with a 17 lb (maximum) pneumatic hammer with points that do not exceed the width of the shank or with hand picks or chisels as directed by the Engineer. Do not cut or remove the existing reinforcing steel. Unless specifically directed by the Engineer, do not remove concrete deeper than 1 inch below the reinforcing steel.

Abrasive blast all exposed concrete surfaces and existing reinforcing steel in repair areas to remove all debris, loose concrete, loose mortar, rust, scale, etc. After sandblasting examine the reinforcing steel to ensure at least 90% of the original diameter remains. If there is more than 10% reduction in the rebar diameter, splice in and securely tie supplemental reinforcing bars as directed by the Engineer.

Provide stainless welded wire fabric at each repair area larger than one square foot if the depth of the repair exceeds 2 inches from the "As Built" outside face. Provide a minimum 4" x 4" - 12 gage stainless welded wire fabric unless otherwise shown on the plans. Rigidly secure the welded wire fabric to existing steel or to 3/16" diameter stainless hook fasteners adequately spaced to prevent sagging. Encase the welded wire fabric in shotcrete a minimum depth of 1 1/2 inches.

The contractor has the option to use synthetic fiber reinforcement as an alternate to welded wire fabric if attaching welded wire fabric is impractical or if approved by the Engineer. Welded wire fabric and synthetic fiber reinforcement shall not be used in the same repair area.

Thoroughly clean the repair area of all dirt, grease, oil or foreign matter, and remove all loose or weakened material before applying shotcrete. Saturate the repair area with clean water the day before applying shotcrete. Bring the wetted surface to a saturated surface dry (SSD)

condition prior to applying shotcrete and maintain this condition until the application begins. Use a blowpipe to facilitate removal of free surface water. Only oil-free compressed air is to be used in the blowpipe.

The time between removal of deteriorated concrete and applying shotcrete shall not exceed five (5) calendar days. If the time allowance exceeds (5) calendar days, prepare the surface at the direction of the Engineer before applying shotcrete.

APPLICATION AND SURFACE FINISH

Apply shotcrete only when the surface temperature of the repair area is greater than 40°F and less than 95°F. Do not apply shotcrete to frosted surfaces. Maintain shotcrete at a minimum temperature of 40°F for three (3) calendar days after placement.

Apply shotcrete in layers. The properties of the applied shotcrete determine the proper thickness of each layer or lift.

The nozzleman should hold the nozzle three (3) to four (4) feet from the surface being covered in a position that ensures the shotcrete strikes at right angles to the surface being covered without excessive impact. The nozzleman shall maintain the water amount at a practicable minimum, so the mix properly adheres to the repair area. Water content should not become high enough to cause the mix to sag or fall from vertical or inclined surfaces, or to separate in horizontal layers.

Use shooting wires or guide strips that do not entrap rebound sand. Use guide wires to provide a positive means of checking the total thickness of the shotcrete applied. Remove the guide wires prior to the final finish coat.

To avoid leaving sand pockets in the shotcrete, blow or rake off sand that rebounds and does not fall clear of the work, or which collects in pockets in the work. Do not reuse rebound material in the work.

If a work stoppage longer than two (2) hours takes place on any shotcrete layer prior to the time it has been built up to required thickness, saturate the area with clean water and use a blowpipe as outlined previously, prior to continuing with the remaining shotcrete course. Do not apply shotcrete to a dry surface.

Finish all repaired areas, including chamfered edges, as close as practicable to their original "As Built" dimensions and configuration. Provide a minimum 2" of cover for reinforcing steel exposed during repair. Slightly build up and trim shotcrete to the final surface by cutting with the leading edge of a sharp trowel. Use a rubber float to correct any imperfections. Limit work on the finished surface to correcting imperfections caused by trowel cutting.

Immediately after bringing shotcrete surfaces to final thickness, thoroughly check for sags, bridging, and other deficiencies. Repair any imperfections at the direction of the Engineer.

Prevent finished shotcrete from drying out by maintaining 95% relative humidity at the repair and surrounding areas by fogging, moist curing or other approved means for seven (7) calendar days.

MATERIAL TESTING & ACCEPTANCE

Each day shotcreting takes place, the nozzleman shall shoot one 18" x 18" x 3" test panel in the same position as the repair work that is being done to demonstrate the shotcrete is being applied properly. Store, handle and cure the test panel in the same manner as the repaired substructure.

Approximately 72 hours after completing the final shotcrete placement, thoroughly test the surface with a hammer. At this time, the repair area should have sufficient strength for all sound sections to ring sharply. Remove and replace any unsound portions prior to the final inspection of the work. No additional compensation will be provided for removal and replacement of unsound shotcrete.

After seven (7) calendar days, core three (3) 3" diameter samples from each test panel and from the repaired structure as directed by the Engineer. Any cores taken from the structure shall penetrate into the existing structure concrete at least two (2) inches. Cores shall be inspected for delamination, sand pockets, tested for bond strength and compressive strength. If a core taken from a repaired structure unit indicates unsatisfactory application or performance of the shotcrete, take additional cores from the applicable structure unit(s) for additional evaluation and testing as directed by the Engineer. Any repair work failing to meet the requirements of this provision will be rejected and the Contractor shall implement a remediation plan to correct the deficiency at no additional cost to the Department. No extra payment will be provided for drilling extra cores. Patch all core holes in repaired structure units to the satisfaction of the Engineer. All material testing, core testing and sampling will be done by the Materials and Tests Unit of North Carolina Department of Transportation.

MEASUREMENT AND PAYMENT

Shotcrete Repairs will be measured and paid for at the contract unit price bid per cubic foot and will be full compensation for removal, containment and disposal off-site of unsound concrete including the cost of materials, labor, tools, equipment and incidentals necessary to complete the repair work. Depth will be measured from the original outside concrete face. The Contractor and Engineer will measure quantities after removal of unsound concrete and before application of repair material. Payment will also include the cost of sandblasting, surface cleaning and preparation, cleaning of reinforcing steel, placement of new steel, cost of temporary work platform, testing for soundness, curing of shotcrete and taking core samples from the test panels and substructure units.

Payment will be made under:

| Pay Item | Pay Unit |
|-------------------|-----------------|
| Shotcrete Repairs | Cubic Feet |

CONCRETE REPAIRS**(2-11-19)****DESCRIPTION**

Work includes removal of concrete in spalled, delaminated and/or cracked areas of the existing bent caps, bent columns, underside of bridge decks, deck slabs, girders, and bridge rails in reasonably close conformity with the lines, depth, and details shown on the plans, described herein and as established by the Engineer. This work also includes straightening, cleaning, and replacement of reinforcing steel, doweling new reinforcing steel, removing all loose materials, removing and disposing of debris, formwork, applying repair material, and protecting adjacent areas of the bridge and environment from material leakage. The repair material shall be one of the materials described in this Special Provision, unless otherwise noted in the plans or special provisions.

The location and extent of repairs shown on the plans described herein are general in nature. The Engineer shall determine the extent of removal in the field based on an evaluation of the condition of the exposed surfaces. The Contractor shall coordinate removal operations with the Engineer. No more than 30% of a round or square column or 30% of the bearing area under a beam shall be removed without a temporary support system and approval from the Engineer.

Repair, to the Engineer's satisfaction, any portion of the structure that is damaged from construction operations. No extra payment is provided for these repairs.

SURFACE PREPARATION

1. Adhere to the following surface preparation requirements or the repair material manufacturer's requirements, whichever is more stringent.
2. Prior to starting the repair operation, delineate all surfaces and areas assumed to be deteriorated by visually examining and sounding the concrete surface with a hammer or other approved method. The Engineer is the sole judge in determining the limits of deterioration.
3. Prior to concrete removal, introduce a shallow saw cut, 1/2" in depth, around the repair area at right angles to the concrete surface. Sawcut should be located a minimum 2" beyond the perimeter of the deteriorated concrete area to be repaired. Remove all concrete within the sawcut to a minimum depth of 1/2". If concrete removal exposes reinforcing steel, remove all deteriorated concrete 1" below the reinforcing steel with a 17 lb (maximum) pneumatic hammer, with points that do not exceed the width of the shank, or with hand picks or chisels, as directed by the Engineer. Do not cut or remove the existing reinforcing steel. Unless specifically directed by the Engineer, do not remove concrete deeper than 1" below the reinforcing steel.
4. Abrasive blast all exposed concrete surfaces and existing reinforcing steel in repair areas to remove all debris, loose concrete, loose mortar, rust, scale, etc. After blasting, examine the reinforcing steel to ensure at least 90% of the original diameter remains. If there is more than 10% reduction in the rebar diameter, splice in and securely tie supplemental reinforcing bars as directed

by the Engineer. This might require additional removal of concrete, in order to achieve an appropriate splice length of the reinforcing steel.

5. Thoroughly clean the repair area of all dirt, grease, oil, or foreign matter, and remove all loose or weakened material by abrasive blasting before applying concrete repair material. Acid etch with 15% hydrochloric acid, only if approved by the Engineer. Follow acid etching by scrubbing and flushing with copious amounts of clean water. Check the cleaning using moist pH paper. Water cleaning is complete when the paper reads ten (10) or higher.

6. Follow all abrasive blasting with vacuum cleaning.

7. The time between removal of deteriorated concrete and applying concrete repair material shall not exceed 72 hours. If the time allowance exceeds 72 hours, prepare the surface at the direction of the Engineer before applying concrete repair material.

APPLICATION AND SURFACE FINISH

Apply repair material to damp surfaces only when allowed by repair material recommendations and approved by the Engineer. Prepare damp surfaces in accordance with the *Standard Specifications* and/ or repair material manufacturer's recommendations. Use a blowpipe to facilitate removal of free surface water. Only oil-free compressed air is to be used in the blowpipe.

When surface preparation is completed, mix and apply repair material in accordance with the *Standard Specifications* and/ or repair material manufacturer's recommendations.

Use aggregate that is washed, kiln-dried, and bagged. Maximum size of aggregate shall not exceed 2/3 of the minimum depth of the repair area, or 3/4 of the depth of excavation behind the reinforcing steel, whichever is smaller.

Unless otherwise required by the repair material manufacturer, apply bonding agent to all repair areas immediately prior to placing repair material.

Repair areas shall be formed unless otherwise approved by the Engineer. Form and finish all repaired areas, including chamfered edges, as close as practicable to their original "As Built" dimensions and configuration. After applying the repair material, remove excessive material and provide a smooth, flush surface, unless directed otherwise.

Cure finished Class A concrete repair material by maintaining 95% relative humidity at the repair and surrounding areas by fogging, moist curing, or other approved means for seven (7) days. Cure polymer modified concrete repair material in accordance with manufacturer's recommendations.

REPAIR MATERIAL OPTIONS

(A) Polymer Modified Concrete Repair Material

Repair material shall be polymer modified cement mortar for vertical or overhead applications and shall be suitable for applications in marine environments. Material shall be approved for

use by NCDOT. Submit repair material to the Engineer for review and approval prior to beginning the work. Color of repair material shall be concrete gray.

(B) Class A Concrete Repair Material

Repair material shall be Class A Portland Cement Concrete as described in Article 1000-4 of the *Standard Specifications*.

TEMPORARY WORK PLATFORM

8. Prior to beginning any repair work, provide details for a sufficiently sized temporary work platform at each repair location. Design steel members to meet the requirements of the *American Institute of Steel Construction Manual*. Design timber members in accordance with the *National Design Specification for Stress-Grade Lumber and Its Fastenings* of the National Forest Products Association. Submit the platform design and plans for review and approval. The design and plans shall be sealed and signed by a North Carolina registered Professional Engineer. Do not install the platform until the design and plans are approved. Drilling holes in the superstructure for the purpose of attaching the platform is prohibited. Upon completion of work, remove all anchorages in the substructure and repair the substructure at no additional cost to the Department.

MEASUREMENT AND PAYMENT

Concrete Repairs will be measured and paid for at the contract unit price bid per cubic foot and will be full compensation for removal, containment and disposal off-site of unsound concrete including the cost of materials, reinforcing steel, labor, tools, equipment and incidentals necessary to complete the repair work. Depth will be measured from the original outside concrete face. The Contractor and Engineer will measure quantities after removal of unsound concrete and before application of repair material. Payment will also include the cost of abrasive blasting, surface cleaning and preparation, blast cleaning of reinforcing steel, placement of new reinforcing steel, cost of temporary work platform, testing of the soundness of the exposed concrete surface, furnishing and installation of repair mortar material, curing and sampling of concrete, and protection/cleaning of adjacent areas from splatter or leakage.

Reinforcing Steel that is required for the repairs will be in accordance with Section 425 of the *Standard Specifications*.

Payment will be made under:

| Pay Item | Pay Unit |
|------------------|-----------------|
| Concrete Repairs | Cubic Feet |

POURABLE SILICONE JOINT SEALANT**(SPECIAL)****SEALS**

Provide and install a low modulus silicone sealant (non-sag or self-leveling) and backer rod which conforms to the *Standard Specifications* (Subsections 1028-3 and 1028-4, respectively) and this special provision. Use silicone approved for use on joint openings as indicated on project plans and provide a seal with a working range of minimum 50% compression and extension. Silicone joint seal product shall be designated as approved for use on the NCDOT Approved Products List. If non-sag and self-leveling sealants are to be in contact with each other, they shall be from the same manufacturer and shall be compatible for such use.

SAWING THE JOINT

Joint concrete material or joint concrete header material shall have sufficient time to cure such that no damage can occur to the concrete prior to sawing to the final width and depth as specified in the plans.

When sawing the joint to receive the seal, always use a rigid guide to control the saw in the desired direction. To control the saw and to produce a straight line as indicated on the plans, anchor and positively connect a template or a track to the bridge deck. Do not saw the joint by visual means such as a chalk line. Fill the holes used for holding the template or track to the deck with an approved flowable, non-shrink, non-metallic grout.

Saw cut to the desired width and depth in one or two (2) passes of the saw by placing and spacing two (2) metal blades on the saw shaft to the desired width for the joint opening.

The desired depth is the depth of the seal plus $\frac{1}{4}$ " above the top of the seal plus approximately 1" below the bottom of the seal. An irregular bottom of sawed joint is permitted as indicated on the plans. Grind exposed corners on saw cut edges to a $\frac{1}{4}$ " chamfer.

Saw cut a straight joint, centered over the formed opening and to the desired width specified in the plans. Prevent any chipping or damage to the sawed edges of the joint.

Remove any staining or deposited material resulting from sawing with a wet blade to the satisfaction of the Engineer.

PREPARATION OF FORMED OR SAWED JOINT FOR SEAL INSTALLATION

Joint concrete material or joint concrete header material shall cure a minimum of 24 hours prior to seal installation.

After forming or sawing the joint, the Engineer will thoroughly inspect the joint opening for spalls, popouts, cracks, etc. All necessary repairs will be made by the Contractor prior to blast cleaning and installing the seal, at no cost to the Department.

Clean the joints by sandblasting the joint opening to provide a firm, clean joint surface free of curing compound, loose material, and any foreign matter. Sandblast the joint opening without causing pitting or uneven surfaces. The aggregate in the polyester polymer concrete may be exposed after sandblasting.

After blasting, either brush the surface with clean brushes made of hair, bristle, or fiber, blow the surface with compressed air, or vacuum the surface until all traces of blast products and abrasives are removed from the surface, pockets, and corners. If nozzle blasting is used to clean the joint opening, use compressed air that does not contain detrimental amounts of water or oil.

Examine the blast-cleaned surface and remove any traces of oil, grease, or smudge deposited in the cleaning operations.

Apply recommended primer in accordance with the manufacturer's recommendations. Uniformly coat the entire surface. Over application may affect adhesion. Allow to thoroughly dry before installing backer rod and sealant.

Install a circular backer rod that is a minimum 25 percent oversized into the joint approximately 1 in. below the surface. The backer rod shall be sized according to the manufacturer's recommendation for the size of the joint to be sealed as measured by the Contractor. If two (2) pieces must be joined, abut the two (2) ends and tape them together to prevent sealant run down. The backer rod may be installed by hand, but roller device shall be used to insure a consistent, uniform placement at the proper depth below the top surface.

Install the backer rod and silicone sealant in the blast-cleaned opening on the same day the surface is blast cleaned.

SEAL INSTALLATION

Install the silicone joint sealant(s) as indicated on the plans, in accordance with the manufacturer's procedures and recommendations, and as recommended below. Do not install the joint seal if the ambient air or surface temperature is below 45°F. Have a manufacturer's certified trained factory representative present during the installation of the first seal of the project, to provide guidance for the proper installation of the silicone joint sealant(s).

The sealant must be recessed a minimum ½ in. below the pavement surface to prevent traffic abrasion or snow plow damage.

After a joint has been sealed, remove excess joint sealer on the pavement or bridge deck concrete as soon as possible.

The installed system shall be watertight and will be monitored until final inspection and approval.

Do not place pavement markings on top of pourable joint seals.

(A) Watertight Integrity Test

- (1) Upon completion of each strip seal expansion joint, perform a water test on the top surface to detect any leakage. Cover the roadway section of the joint from curb to curb, or barrier rail to barrier rail, with water, either ponded or flowing, not less than 1 inch above the roadway surface at all points. Block sidewalk sections and secure an unnozzled water hose delivering approximately 1 gallon of water per minute to the inside face of the bridge railing, trained in a downward position about six (6) inches above the sidewalk, such that there is continuous flow of water across the sidewalk and down the curb face of the joint.
- (2) Maintain the ponding or flowing of water on the roadway and continuous flow across sidewalks and curbs for a period of five (5) hours. At the conclusion of the test, the

underside of the joint is closely examined for leakage. The strip seal expansion joint is considered watertight if no obvious wetness is visible on the Engineer's finger after touching a number of underdeck areas. Damp concrete that does not impart wetness to the finger is not considered a sign of leakage.

- (3) If the joint system leaks, locate the place(s) of leakage and take any repair measures necessary to stop the leakage at no additional cost to the Department. Use repair measures recommended by the manufacturer and approved by the Engineer prior to beginning corrective work.
- (4) If measures to eliminate leakage are taken, perform a subsequent water integrity test subject to the same conditions as the original test. Subsequent tests carry the same responsibility as the original test and are performed at no additional cost to the Department.

BASIS OF PAYMENT

Pourable Silicone Joint Sealant will be measured and paid for at the contract unit price bid per linear foot and will be full compensation for furnishing all material, including backer rod, labor, tools, and equipment necessary for installing these seals in place and accepted.

| Pay Item | Pay Unit |
|---------------------------------|-----------------|
| Pourable Silicone Joint Sealant | Linear Feet |

OVERLAY SURFACE PREPARATION FOR

POLYESTER POLYMER CONCRETE

(SPECIAL)

DESCRIPTION

This special provision addresses the surface preparation activities required prior to the placement of polyester polymer concrete (PPC). Unless specifically mentioned below, all requirements specified for the bridge deck are also required for the approach slabs.

Work includes: removal of unsound and sound bridge deck concrete and existing patches in deck repair areas; preparation of repair areas prior to placement of PPC bridge deck repair material; bridge deck surface preparation prior to placement of PPC overlay; and any incidentals necessary to prepare the bridge deck for placement of PPC repair material or PPC overlay, as specified or as shown on the plans.

DEFINITIONS

Scarification shall consist of the removal of any asphalt wearing surface and concrete surface to the uniform depth and limits shown on the plans.

Shotblasting shall consist of steel beads (or other materials as approved by the Engineer) "shot" out of a machine onto the bridge concrete deck concrete floor to remove soft or deteriorated concrete, and to clean the concrete deck surface for the application of the PPC overlay. Contractor shall vary the speed of the shotblaster or make multiple passes, as necessary, to achieve the required surface preparation for the PPC overlay. Areas inaccessible with shotblasting equipment may require surface preparation with sandblasting equipment and hand equipment.

EQUIPMENT

All equipment for cleaning the existing concrete surface and mixing and applying the overlay system shall be in accordance with the System Provider's recommendations, as approved by the Engineer prior to commencement of any work:

- (A) Scarifying equipment that is a power-operated, mechanical grinder capable of removing a minimum depth of 1/4" for each pass.
- (B) Shotblasting and sandblasting equipment to adequately prepare the bridge deck substrate, as required in this special provision. Provide equipment to supply oil-free and moisture-free compressed air for final surface preparation.
- (C) Equipment capable of sawing concrete to the specified plan depth.
- (D) Power driven hand tools for removal of unsound concrete are required that meet the following requirements:
 - (1) Pneumatic hammers weighing a nominal 15 lbs. or less.
 - (2) Pneumatic hammer chisel-type bits that do not exceed the diameter of the shaft in width.
- (E) Hand tools, such as hammers and chisels, for removal of final particles of unsound concrete.
- (F) Self-propelled vacuum capable of picking up dust and other loose material from prepared deck surface.
- (G) Equipment to supply oil-free and moisture-free compressed air for final surface preparation.

The equipment must operate at a noise level less than 90 decibels at a distance of 50 feet.

MANAGEMENT AND DISPOSAL OF CONCRETE DEBRIS

All concrete debris shall become the property of the Contractor. The contractor shall be responsible for disposing of all debris generated by scarification, shotblasting, sandblasting, and any other surface preparation operations, in compliance with applicable regulations concerning such disposal.

All costs associated with management and disposal of all debris shall be included in the payment of other items.

OSP PLAN SUBMITTAL

Prior to beginning surface preparation activities, the Contractor shall submit for review and approval the Overlay Surface Preparation (OSP) Plan. The OSP Plan shall detail the type of equipment that is intended to be used and the means by which the Contractor will achieve the following requirements:

- (A) Estimate depth of reinforcing steel.
- (B) Scarification of deck to depth required.
- (C) Measure depth of scarification to show completed within limits.
- (D) Measure depth of shotblasting to show completed within limits.

SURFACE PREPARATION

Prior to any construction, take the necessary precautions to ensure debris from bridge deck preparation and repairs is not allowed to fall below the bridge deck.

Remove all existing asphalt overlays and all loose, disintegrated, unsound or contaminated concrete to the limits shown on the plans with the following requirements.

During surface preparation, precaution shall be taken to assure that traffic is protected from rebound, dust, and construction activities. Appropriate shielding shall be provided as required and directed by the Engineer. During surface preparation, the Contractor shall provide suitable coverings, as needed to protect all exposed areas not to receive overlay, such as curbs, sidewalks, parapets, etc. All damage or defacement resulting from surface preparation shall be repaired to the Engineer's satisfaction at no additional cost to the Department.

(A) Sealing of Bridge Deck: Seal all expansion joints subject to run-off water from the scarification, shotblasting, and PPC placement process with material approved by the Engineer, prior to beginning any demolition. The expansion joints shall remain sealed until it has been determined that water and materials from the scarification, shotblasting, and PPC placement operations cannot be discharged through them any longer. Take all steps necessary to eliminate the flow of water or materials through the expansion joints, and any other locations water or materials could leak from the deck.

All deck drains in the immediate work area and other sections of the bridge affected by the work being performed shall be sealed prior to beginning scarification. Drains shall remain sealed until it has been determined that water and materials from the scarification, shotblasting, and PPC placement operations cannot be discharged through them any longer.

(B) Scarifying Bridge Deck: Remove any asphalt wearing surface from the bridge deck and scarify the concrete deck to remove the entire concrete surface of the deck to the uniform depth and limits shown on the plans.

It will be the Contractor's responsibility to determine amount of cover for the reinforcing steel. Use a pachometer or other approved device, as approved by Engineer, prior to scarification. Readings shall be read and recorded in the presence of the Engineer. Readings shall be recorded for each span at 1/5 points longitudinally and 1/3 points transversely. The cost for this work will be considered incidental to the cost of surface preparation of the bridge deck.

Estimated average cover to top mat:

Bridge Number 300427: 2½" +/- ½"

Bridge Number 300428: 2½" +/- ½"

Bridge Number 300429: 2½" +/- ½"

Bridge Number 300430: 2½" +/- ½"

Bridge Number 300435: 2½" +/- ½"

Bridge Number 300436: 2½" +/- ½"

Bridge Number 300437: 2½" +/- ½"

Bridge Number 300438: 2½" +/- ½"

Bridge Number 300449: 2½" +/- ½"

Bridge Number 300450: 2½" +/- ½"

Bridge Number 700234: 2½" +/- ½"

Bridge Number 700235: 2½" +/- ½"

The above top mat cover dimensions are an estimate based on the best available information. Calibrate scarifying equipment in order to avoid damaging the reinforcing steel in the bridge floor or the approach slab. Care shall be taken not to cut, stretch, or damage any exposed reinforcing steel. If reinforcing bars or bridge drainage devices are pulled up or snagged during scarification operations, cease work and consult with the Engineer to determine any necessary adjustments to the roto-milling operation.

Remove and dispose of all concrete and asphalt, and thoroughly clean the scarified surface. In areas where reinforcing steel is located in the depth to be scarified, use another method with the Engineer's approval.

The Engineer will re-inspect after each removal and require additional removals until compliance with plans and specifications are met.

Regardless of the method of removal, the removal operation shall be stopped if it is determined that sound concrete is being removed to a depth greater than required by the plans.

(C) Class II Surface Preparation (Partial Depth): At locations specified on the plans or identified by the Engineer for Class II Surface Preparation, verify the depth of removal achieved by the scarification. Remove by additional scarification or chipping with hand tools all existing patches and unsound concrete. No additional payment will be made for Class II Surface Preparation depths achieved by the initial scarification.

All patches shall be removed under Class II Surface Preparation. If any patch cannot be removed by means of scarification, the Contractor shall use hand tools to remove the patch. Areas indicated on the plans that require Class II Surface Preparation, including the locations of existing patches, are from the best information available. The Contractor shall verify prior to surface preparation the location of all existing patches.

Spalled or unsound areas of the deck not removed by scarification shall be removed to sound concrete at locations noted in the contract plans or as directed by the Engineer. Remove existing spalled or unsound areas of the bridge concrete deck by methods approved by the Engineer.

Provide a 1" deep saw cut around the perimeter of areas noted for bridge deck or patch removal. Remove, using the type of tools listed above, all concrete or patch material within the sawcut to a minimum depth of 1" and as necessary to remove unsound concrete. All loose and unsound concrete or patch material shall be removed.

If the condition of the concrete is such that deep spalls or sheer faces result, notify the Engineer for the proper course of action.

Thoroughly clean the newly exposed surface to be free of all grease, oil, curing compounds, acids, dirt, or loose debris in accordance with this special provision.

Dispose of the removed concrete, clean, repair or replace rusted or loose reinforcing steel, and thoroughly clean the newly exposed surface. Care shall be taken not to cut, stretch, or damage any exposed reinforcing steel.

In overhangs, removing concrete areas of less than 0.60 ft²/ft length of bridge without overhang support is permitted unless the Engineer directs otherwise. Overhang support is required for

areas removed greater than 0.60 ft²/ft length of bridge. Submit details of overhang support to the Engineer for approval prior to beginning the work.

- (D) Preparation of Reinforcing Steel: Remove concrete without cutting or damaging existing steel unless otherwise noted in the plans. Clean, repair, or replace rusted or loose reinforcing steel. Damaged reinforcing steel, such as bars with nicks deeper than 20% of the bar diameter, shall be repaired or replaced. Reinforcing steel which has a cross section reduced to 75% or less shall be replaced with new reinforcing steel of similar cross section area. Replacement bars shall be Grade 60 and meet the material requirements of Section 1070 of the *Standard Specifications*. Replacement bars shall be spliced to existing bars using either minimum 30 bar diameter lap splices to existing steel with 100% cross sectional area or approved mechanical connectors.

For reinforcing steel left unsupported by the concrete removal process, support and protect the exposed reinforcing steel against displacement and damage from loads, such as those caused by removal equipment and delivery buggies. All reinforcing steel damaged or dislodged by these operations shall be replaced with bars of the same size at the contractor's expense.

Reinforcing steel exposed and satisfactorily cleaned and prepared will not require additional cleaning, if encased in concrete within seven (7) days. Rebar exposed for more than seven (7) days shall be satisfactorily cleaned and prepared, prior to placement of the new concrete. The satisfactory cleanliness and preparation of the reinforcing steel shall be determined by the Engineer.

When large areas of the deck on composite bridges are removed resulting in the debonding of the primary reinforcing bars, the removal shall be performed in stages to comply with the construction sequence shown on the plans or as directed by the Engineer.

- (E) Concrete Deck Repair: Repair and fill the Class II Surface Preparation areas of the existing bridge concrete deck prior to the final surface preparation and application of the PPC overlay, at locations shown in the plans, or as determined by the Engineer, if necessary. Materials other than PPC may be used for concrete deck repairs, but shall be approved by the PPC System Provider's Technical Representative and shall be applied and prepared as required by the PPC System Provider. For concrete deck repairs with PPC:

- (1) Removal and surface preparation of the repair area shall be in accordance with and shall be paid for under pay items in this special provision.
- (2) Materials, equipment, placement, and finishing of PPC used for concrete deck repairs shall meet the requirements of and shall be paid for under pay items in the Polyester Polymer Concrete Bridge Deck Overlay special provision.

PPC repair material may be placed up to one (1) hour prior to overlay placement.

All repairs shall be placed and finished to match substrate deck grade prior to PPC placement, in order to provide a uniform overlay thickness.

Concrete deck repairs with PPC may be utilized as a stand-alone item where required on structures not to receive a PPC overlay.

- (F) Surface Cleaning: The surface of concrete substrate and repaired areas shall be prepared for application of the overlay by shotblasting in order to remove all existing grease, slurry, oils, paint, dirt, stripping, curing compound, rust, membrane, weak surface mortar, or any other

contaminants that could interfere with the proper adhesion of the overlay system. The final prepared surface shall adhere to the following requirements:

- (1) If expansion joints are not being replaced or have been replaced prior to shotblasting they shall be protected from damage from the shotblasting operation. Deck drains and areas of curb or railing above the proposed surface shall be protected from the shotblasting operation.
 - (2) The areas to receive overlay shall be cleaned by shotblasting, or abrasive sandblasting in the event that the shotblaster cannot access areas to be prepared. Do not begin shotblasting until all grinding or milling operations are completed. Cleaning shall not commence until all work involving the repair of the concrete deck surface has been completed and the deck is dry. All contaminants shall be picked up and stored in the vacuum unit and no dust shall be created during the blasting operation that will obstruct the view of motorists in adjacent roadways. The travel speed and/or number of passes of the shotblasting unit shall be adjusted, so as to result in all weak or loose surface mortar being removed, aggregates within the concrete being exposed, and open pores in the concrete exposed, as well as a visible change in the concrete color. Cleaned surfaces shall not be exposed to vehicular traffic unless approved by the Engineer. If the deck becomes contaminated before placing the overlay, the Contractor shall shotblast or abrasive sandblast the contaminated areas to the satisfaction of the Engineer at no additional cost to the Department.
 - (3) Prior to the overlay placement, any loose particles shall be removed by magnets, oil free compressed air, and vacuuming, such that no trapped particles remain. Power washing will not be allowed.
 - (4) The areas to be overlaid shall be blown off with oil and moisture free compressed air just prior to placement of the primer and shall be completely dry.
 - (5) Cleaning methods other than those detailed by specification may be suggested by the PPC System Provider and approved by the Engineer.
 - (6) All steel surfaces that will be in contact with the PPC overlay shall be cleaned in accordance with Structural Steel Paint Council (SSPC) Surface Preparation(SP) No. 10, Near-White Blast Cleaning, except that wet blasting methods shall not be allowed.
- (G) **Safety:** Provide a containment system for handling expected and unexpected blow through of the deck. The containment system shall retain runoff water and debris and protect the area under the bridge deck. The Contractor shall be responsible for any injury or damage caused by these operations. The containment system shall remain in place until the concrete has been cast and attained minimum strength.

Provide adequate lighting when performing deck preparation activities at night. Submit a lighting plan to the Engineer for approval prior to beginning work.

MEASUREMENT AND PAYMENT

Scarifying Bridge Deck will be measured and paid for at the contract unit price per square yard and will be full compensation for the milling of existing asphalt wearing surface from the bridge deck and approaches, milling of the entire concrete bridge deck, repairing or replacing any damaged reinforcing steel, and the cleaning and disposal of all waste material generated.

Shotblasting Bridge Deck will be measured and paid for at the contract unit price per square yard and will be full compensation for the shotblasting and necessary sandblasting and handwork to prepare the entire concrete bridge deck and approaches, and removal and disposal of all waste material generated.

Class II Surface Preparation will be measured and paid for at the contract unit price per square yard and will be full compensation for Class II deck preparation where required by the plans. The cost will also include removal and disposal of unsound and contaminated concrete, removal of all existing patches, cleaning, repairing, or replacing of reinforcing steel, and all materials, labor, tools, equipment and incidentals necessary to complete the work.

Payment will be made under:

Pay Item

Scarifying Bridge Deck
Shotblasting Bridge Deck
Class II Surface Preparation

Pay Unit

Square Yard
Square Yard
Square Yard

POLYESTER POLYMER CONCRETE BRIDGE DECK OVERLAY

(SPECIAL)

DESCRIPTION

This work consists of furnishing and placing a Polyester Polymer Concrete (PPC) overlay system with a High Molecular Weight Methacrylate (HMWM) resin primer on concrete surfaces. The surface of the concrete shall be prepared and the PPC overlay system shall be applied in accordance with this special provision in conformity with the lines, grades, thickness, and typical cross-sections shown on the plans or as approved by the Engineer. Unless specifically mentioned below, all requirements specified for the bridge deck are also required for the approach slabs.

Work includes: placement of HMWM primer; placement of PPC surface patching and/or overlay; and any incidentals necessary to complete the project as specified or as shown on the plans.

The System Provider is the manufacturer that will provide the PPC system for the PPC overlay. The System shall include the necessary and appropriate PPC components, as well as the necessary and appropriate HMWM resin primer components. Contractor shall not change System Provider during project, without approval from the Engineer.

Qualifications And Submittals

The Contractor shall submit the following requested items and any other relevant documents at least two (2) weeks prior to the PPC Overlay Pre-placement Conference. These submittals are for approval and shall be directed to the Engineer.

(A) Overlay System: The Contractor shall submit two (2) copies of the System Provider's material information, written installation instructions, safety data sheets, and independent test results for approval.

(B) System Provider Qualifications: The Contractor shall install an overlay system with all components provided through a single System Provider with documented experience

successfully supplying at least five (5) PPC overlay projects of similar size and scope within the past five (5) years. The Contractor shall submit documentation of the System Provider's project experience including the following:

- (1) Project Location.
- (2) Owner Agency.
- (3) Project construction date.
- (4) Overlay quantities.
- (5) Reference name and contact information for owner representative.

(C) Contractor Qualifications: The Contractor shall submit documentation of successful projects placing structural concrete bridge decks, modified concrete bridge deck overlays, or PPC overlay systems to finished grade using similar equipment as specified herein within the past five (5) years. A minimum of two (2) employees on site must have the equivalent work experience qualifications of the Contractor. The documentation of Contractors qualifications shall include the following:

- (1) Project Location.
- (2) Owner Agency.
- (3) Project construction date.
- (4) Overlay quantities.
- (5) Reference name and contact information for owner representative.

(D) System Provider Technical Representative Qualifications: The System Provider Technical Representative shall have a minimum of five (5) years of experience with PPC and be completely competent in all aspects of the work, including surface preparation, mixing, placement, curing, and testing of the PPC Overlay System. The Technical Representative shall have experience on a minimum of five (5) successful projects of similar size and scope. The Contractor shall submit documentation of the System Provider Technical Representative's experience including the following:

- (1) Years of Experience with PPC
- (2) Project location
- (3) Project construction date
- (4) Overlay quantities
- (5) Reference name and contact information for owner representative

The Technical Representative shall be available on site, for a minimum of three (3) days per project, to give the installer advice and guidance on the installation of PPC. This includes, but not limited to: deck concrete surface preparation, PPC materials, PPC application, PPC curing or any time there are questions or issues that may arise. The Technical Representative shall be on site for the first PPC overlay placement and shall remain on site until the Engineer is satisfied.

(E) Overlay Placement Plan: The Contractor shall submit an Overlay Placement Plan that includes the following:

- (1) Schedule of overlay work and testing for each bridge.
- (2) Anticipated concrete deck repair locations and repair method.
- (3) Staging plan describing overlay placement sequence including:

- (a) Construction joint locations. Longitudinal construction joints between passes shall be located along the centerline of travel lanes or edge of travel lanes.
- (b) Sequence of placement.
- (c) Placement widths.
- (d) Anticipated placement lengths.
- (e) Placement direction.
- (f) Joint locations.
- (g) Location of proposed trial overlay(s).
- (4) Description of equipment used for:
 - (a) Surface preparation including grinding and shotblasting.
 - (b) Applying HMWM primer resin.
 - (c) Measuring, mixing, placing, and finishing the PPC.
 - (d) Applying surface finish sand.
- (5) Method of protecting and finishing inlets and bridge drains.
- (6) Method for isolating expansion joints.
- (7) Method for measuring and maintaining overlay thickness and profile.
- (8) Cure time for PPC.
- (9) Storage and handling of HMWM resin and PPC components.
- (10) Procedure for disposal of excess HMWM resin, PPC, and containers.
- (11) Procedure for cleanup of mixing and placement equipment.

(F) Equipment: The Contractor shall submit documentation of current certification that mixing equipment has been calibrated (Caltrans California test CT 109 or similar accepted). The Contractor shall submit a documented history of the use of the placement equipment to successfully place PPC overlays on bridge projects for review and approval by the Engineer.

MATERIALS

The PPC shall consist of polyester resin binder and aggregate as specified below. It shall also include a compatible primer which when mixed with other specified ingredients and applied as specified herein, is capable of producing a PPC meeting the requirements of this specification.

- (1) Verification. The Contractor shall submit a Certified Test Report from independent labs for all of the materials associated with the PPC overlay in accordance with this special provision.
 - (2) Packaging and Shipment. All components shall be shipped in strong, substantial containers, bearing the manufacturer's label specifying batch/lot number, brand name, and quantity. If bulk resin is to be used, the contractor shall notify the Engineer in writing ten (10) working days prior to the delivery of the bulk resin to the job site. Bulk resin is any resin that is stored in containers in excess of 55 gallons.
 - (3) Sampling. NCDOT reserves the right to retain and test samples of components of the PPC overlay system. This includes requiring submittal of samples prior to the first installation or on-site sampling during construction.
- (A) Polyester Resin Binder: Polyester resin binder shall have the following properties:
- (1) Be an unsaturated isophthalic polyester-styrene co-polymer. The resin content shall be 12% +/-1% of the weight of the dry aggregate.
 - (2) Contain at least 1 percent by weight gamma-methacryloxypropyltrimethoxysilane, an organosilane ester silane coupler.

- (3) Be used with a promoter that is compatible with suitable methyl ethyl ketone peroxide and cumene hydroperoxide initiators.
- (4) Meet the required values for the material properties shown in Table 1, below.

Accelerators or inhibitors may be required to achieve proper setting time of PPC. They shall be used as recommended by the overlay System Provider.

Table 1
POLYESTER RESIN BINDER PROPERTIES
(Each lot sent to job shall be tested)

| Property | Test Method | Requirement |
|--|-------------|---|
| Viscosity* | ASTM D 2196 | 75 – 200 cps (RVT No.1 Spindle, 20 RPM at 77 °F) |
| Specific Gravity* | ASTM D 1475 | 1.05 to 1.10 at 77 °F |
| Elongation | ASTM D 638 | 35 percent, minimum Type I specimen, thickness 0.25 ± 0.03” at Rate = 0.45 inch/minute. |
| | ASTM D 618 | Sample Conditioning: 18/25/50+5/70 |
| Tensile Strength | ASTM D 638 | 2,500 psi, minimum Type I specimen, thickness 0.25 ± 0.03” at Rate = 0.45 inch/minute. |
| | ASTM D 618 | Sample Conditioning: 18/25/50+5/70 |
| * Test shall be performed before adding initiator. | | |

- (B) High Molecular Weight Methacrylate (HMWM) Primer: Primer for the substrate concrete surface shall be a wax-free, low odor, high molecular weight methacrylate primer, and consist of a resin, initiator, and promoter. The primer shall conform to requirements indicated in Table 2, below, and all components shall be supplied by the System Provider.

Initiator for the methacrylate resin shall consist of a metal drier and peroxide. If supplied separately from the resin, the metal drier shall not be mixed with the peroxide directly; a VIOLENT EXOTHERMIC REACTION will occur. The containers and measuring devices shall not be stored in a manner that allows leakage or spilling to contact the containers or materials of the other.

Table 2
HIGH MOLECULAR WEIGHT METHACRYLATE RESIN PROPERTIES
(Tested yearly)

| Property | Test Method | Requirement |
|--------------------|-------------|--|
| Viscosity** | ASTM D 2196 | 25 cps maximum (Brookfield RVT with UL adapter, 50 RPM at 77 °F) |
| Volatile Content** | ASTM D 2369 | 30 percent, maximum |
| Specific Gravity** | ASTM D 1475 | 0.90 minimum at 77 °F |
| Flash Point | ASTM D 3278 | 180 °F minimum |
| Vapor Pressure** | ASTM D 323 | 1.0 mm Hg, maximum at 77 °F |

| | | |
|---|-----------------------------|--|
| PCC Saturated Surface-Dry Bond Strength (Adhesive) | California Test 551, part 5 | 700 psi, minimum at 24 hours and $70 \pm 1^\circ\text{F}$ (with PPC at 12% resin content by weight of the dry aggregate), primed surface |
| **Test shall be performed before initiator is added | | |

(C) Aggregates: PPC aggregate shall have the following properties:

- (1) No more than 45 percent crushed particles retained on the No. 8 sieve when tested in accordance with American Association of State Highway and Transportation Officials (AASHTO) Test Method T335.
- (2) Fine aggregate consists of natural sand only.
- (3) Weighted-average aggregate absorption of no more than 1.0 percent when tested under AASHTO Test Methods T84 and T85.
- (4) At the time of mixing with resin, have moisture content of not more than one-half ($\frac{1}{2}$) of the weighted-average aggregate absorption when tested under AASHTO Test Method T255.
- (5) Moh's hardness of seven (7) or greater.
- (6) Comply with the requirements for the aggregate gradation indicated in Table 3, below:

Table 3
AGGREGATE GRADATION
(Tested yearly)

| Sieve Size | Percent Passing |
|------------|-----------------|
| 3/8" | 100 |
| No. 4 | 60-85 |
| No. 8 | 55-65 |
| No. 16 | 29-50 |
| No. 30 | 16-36 |
| No. 50 | 5-20 |
| No. 100 | 0-7 |
| No. 200 | 0-3 |

(D) Sand: Sand for abrasive sand finish shall have the following properties:

- (1) Commercial-quality blast sand.
- (2) Not less than 95 percent pass the No. 8 sieve and not less than 95 percent retained on the No. 20 sieve when tested under AASHTO Test Method T27.
- (3) Shall be dry at the time of application.

(E) Composite system: The composite PPC system shall have the following properties indicated in Table 4, below:

Table 4

COMPOSITE PROPERTIES
(Tested every 2 years)

| Property | Test Method | Requirement |
|---|-------------|---|
| PCC Saturated Surface Dry Bond Strength | CT 551 | 500 psi minimum at 24 hrs. and 70° F (without primer, at 12% resin content by weight of the dry aggregate, on Saturated Surface Dry Specimen) |
| Abrasion Resistance | CT 550 | <2g weight loss (at 12% resin content by weight of the dry aggregate) |
| Modulus of Elasticity | ASTM C 469 | 1,000,000 psi to 2,000,000 psi (at 12% resin content by weight of the dry aggregate) |

Construction Requirements

- (A) PPC Overlay Pre-placement Conference: A Pre-placement Conference shall be held before any overlay operations begin. Attendees shall include representatives from all parties involved in the work. If necessary, teleconferencing of attendees may be approved by the Engineer.
- (B) Trial Application: Prior to constructing the overlay, one or more trial applications shall be placed on a previously constructed concrete base to demonstrate proper initial set time and the effectiveness of the mixing, placing, and finishing equipment proposed. The set time can be determined as the time elapsed from resin catalyzation until the in-place PPC cannot be deformed by pressing with a finger, indicating the resin binder is no longer in a liquid state. Each trial application shall be the planned paving width, at least ten (10) feet long, and the same thickness as the specified overlay. Conditions during the construction of the trial application(s) and equipment used shall be similar to those to be used for construction of the overlay. The location of the trial application(s) shall be approved by the Engineer. Trial applications shall be properly disposed of off-site by the Contractor, if removal is necessary.

The number of trial applications required shall be as many as necessary for the Contractor to demonstrate the ability to construct an acceptable trial overlay section and competency to perform the work. However, the installer or proposed equipment/techniques may be rejected if not shown to be acceptable after three (3) trials.

Overlay direct tension bond testing shall be performed in accordance with Section (F)(1) of this special provision. Acceptable test results shall be achieved on a trial application before the installation may proceed.

- (C) Equipment: All equipment for cleaning the existing concrete surface and mixing and applying the overlay system shall be in accordance with the System Provider's recommendations, as approved by the Engineer prior to commencement of any work.
- (1) Surface Preparation Equipment: Provide appropriate scarifying, shotblasting, sandblasting and other equipment to adequately prepare the bridge deck substrate, as required in the Overlay Surface Preparation for Polyester Polymer Concrete special provision.
 - (2) Mixing Equipment: A continuous automated mixer shall be used for all PPC overlay applications. The continuous mixer shall:

- (a) Employ an auger screw/chute device capable of sufficiently mixing catalyzed resin with dry aggregate.
- (b) Employ a plural component pumping system capable of handling polyester binder resin and catalyst while maintaining proper ratios to achieve set/cure times within the specified limits. Catalyzed resin shall flow through a static mix tube for sufficient duration to completely mix the liquid system.
- (c) Be equipped with an automatic metering device that measures and records aggregate and resin volumes. Record volumes at least every five (5) minutes, including time and date. Submit recorded volumes at the end of the work shift to the Engineer.
- (d) Have a visible readout gage that displays volumes of aggregate and resin being recorded.
- (e) Produce a satisfactory mix consistently during the entire placement.

A portable mechanical mixer of appropriate size for proposed batches, as recommended by the System Provider and approved by the Engineer, may be used for all PPC patching applications and for smaller area overlay applications if approved by the Engineer.

- (3) Finishing Equipment: Finishing may be accomplished with a Self-Propelled Slip-Form Paving Machine or Vibratory Screed.

- (a) Self-Propelled Slip-Form Paving Machine: A self-propelled slip-form paving machine, which is modified or specifically built to effectively place the PPC overlay in a manner that meets the objectives and requirements of the project, may be used for PPC overlay applications. The paving machine shall:

- (i) Employ a vibrating pan to consolidate and finish the PPC.
- (ii) Be fitted with hydraulically controlled grade automation to establish the finished profile. The automation shall be fitted with substrate grade averaging devices on both sides of the new placement; the device shall average 15 feet in front and behind the automation sensors; or the sensor shall be constructed to work with string-line control. It is acceptable to match grade when placing lanes adjacent to previously placed PPC.
- (iii) Be calibrated for the projects requirements, and calibrated periodically following the manufacturers recommendations.
- (iv) Have sufficient engine power and weight to provide adequate vibration of the finishing pan while maintaining consistent forward placement speed.
- (v) Be capable of both forward and reverse motion under its own power.

- (b) Vibratory Screed: A vibratory screed may be used for finishing PPC, but must be approved by the Engineer at least two (2) weeks prior to PPC placement.

- (D) Concrete Deck Repairs and Surface Preparation: All areas that require removal of existing patches or unsound concrete shall be removed and prepared in accordance with the requirements of the Overlay Surface Preparation for Polyester Polymer Concrete special provision. Placement of concrete for deck repair material shall be Polyester Polymer Concrete in accordance with this special provision. Prepare all concrete deck and repaired deck surfaces in accordance with the requirements of the Overlay Surface Preparation for Polyester Polymer Concrete special provision.

(E) Application of Overlay: Methods indicated in this special provision are typical of general installations and may be modified per the System Provider's recommendations as approved by the Engineer. The application of the overlay shall not begin until the concrete deck is completely surface dry in accordance with ASTM D4263, with a wait time revised from 16 hours to two (2) hours, or as directed by the System Provider's Technical Representative. The concrete surface temperature shall be between 40° and 100° F. Night work may be required when temperatures cannot be met during the day.

During overlay application, precaution shall be taken to assure that traffic is protected from rebound, dust, and construction activities. Appropriate shielding shall be provided as required and directed by the Engineer.

During overlay application, the Contractor shall provide suitable coverings (e.g. heavy duty drop cloths) as needed to protect all exposed areas not to receive overlay, such as curbs, sidewalks, parapets, etc. All damage or defacement resulting from this application shall be cleaned and/or repaired to the Engineer's satisfaction at no additional cost to the Department.

(1) HMWM Primer Application: Immediately before placing primer, all exposed surfaces shall be completely dry and blown clean with oil-free compressed air. Exposed surfaces shall be protected from precipitation and heavy dew during and after the application of the primer.

After the exposed surfaces have been prepared and are dry, primer shall be applied in accordance with the System Provider's recommendations. Primer shall be placed within five (5) minutes of mixing at approximately 90 ft²/ gal or the rate acceptable to the Engineer.

Primer shall be applied by flooding and uniformly spread to completely cover surfaces to receive overlay. Care shall be taken to avoid heavy application that results in excess ponding. Excess material shall be removed or distributed to meet the required application rate. Primer shall be reapplied to any areas that appear dry prior to overlay placement.

Primer shall not be allowed to leak onto areas that have not received surface preparation.

(2) PPC Application: The PPC shall be applied during the interval between 15 minutes and two (2) hours after the primer has been applied. The PPC shall be placed prior to gelling and within 15 minutes following addition of initiator, unless otherwise recommended by the System Provider's Technical Representative.

The polyester resin binder shall be initiated and blended completely. Aggregate shall be added and mixed sufficiently when a portable mechanical mixer is used.

PPC shall have an initial set time of at least 30 minutes and at most 90 minutes. The set time can be determined in the field when the in-place PPC cannot be deformed by pressing with a finger, indicating that the resin binder is no longer in a liquid state. If the initial set is not within 30 to 90 minutes, the material shall be removed and replaced.

The overlay shall be consolidated and finished to the required grade and cross-section using PPC placement equipment as defined herein.

If a vibratory screed is used, prior to placing the PPC, place and fasten screed rails in position to ensure finishing the new surface to the required profile. Do not treat screed rails with parting compound to facilitate their removal. Prior to placing the overlay, attach

a filler block to the bottom of the screed and pass it over the overlay area to check the thickness. The filler block thickness shall be equal to the design overlay thickness as shown in the plans. Remove all concrete that the block does not clear.

Place the PPC in one operation. Provide a minimum overlay thickness as shown in the plans.

Although the paver or screed may yield a finished or nearly finished surface, additional finishing may be necessary. PPC shall be finished, as necessary, through traditional concrete finishing methods, producing a slight resin bleed indicating complete consolidation of aggregates.

Finishing of PPC used as patching of an existing deck surface or overlay shall be completed and finished using traditional concrete hand finishing methods and hand concrete finishing tools. Such patches shall be placed flush with the top of the existing deck surface.

Resin content shall be as specified in the Materials section of this special provision and to yield a PPC consistency that requires surface applied consolidation and finishing to consolidate aggregates and yield a slight sheen of bleed resin on top surface yet does not yield excess bleed resin.

A surface friction sand finish of at least 2.2 lbs/ yd² shall be broadcast onto the glossy surface immediately after sufficient finishing and before resin gelling occurs. To ensure adequate pavement friction, the completed PPC overlay surface shall be free of any smooth or "glassy" areas such as those resulting from insufficient quantities of surface aggregate. Any such surface defects shall be repaired by the Contractor in the manner recommended by the System Provider and approved by the Engineer at no additional cost to the Department.

After application of surface friction sand, unless otherwise indicated on the plans, groove the bridge floor in accordance with Subarticle 420-14(B) of the *Standard Specifications*. Vehicular traffic may travel across a deck surface that has not been grooved; however, the entire deck area shall be grooved after the PPC overlay achieves design strength and no later than seven (7) calendar days after completion of the overlay unless otherwise approved by the Engineer.

Before completion of the project, all deck joints shall be sawcut, prepared, and sealed according to the details in the plans.

After the PPC material has set, if final sawcutting for joint seals will not be done within 12 hours, at minimum, a single sawcut shall be made at the approximate midpoint of each joint. The sawcut shall be made within 12 hours or prior to opening of PPC placement to traffic, if traffic will be allowed within 12 hours. Two (2) saw cuts may be made, but final saw cutting for the joints shall be done in accordance with the special provisions for the installation of the joint seals.

Any surface that is scarified shall be covered with the PPC overlay before traffic is returned to the bridge deck, unless otherwise approved by the Engineer.

Upon approval by the Engineer, if traffic is to be returned to the site, but the overlay is not completed within the allowable lane closure time and is more than ¾ inch higher in elevation than the adjacent pavement, the PPC overlay edges shall be tapered. The leading

edge of the overlay shall be tapered at a 4:1 (horizontal: vertical) slope. Tapered edges longitudinal to the direction of traffic and tapered edges on the trailing edge of the overlay and shall be at a 45 degree slope. Tapers of 45 degrees may remain, and PPC overlay may be placed adjacent. Tapers with a 4:1 (horizontal: vertical) slope shall be sawcut square to the overlay surface, prior to placing adjacent PPC overlay.

The Contractor shall collect a ticket for each pass or portion of a pass that is provided by each mixer, and ensure that the following information is shown on each ticket:

- (a) Project Number.
- (b) Bridge Number.
- (c) Date and Time.
- (d) Location of Placement (Lane and Station Limits or location and length of placement along the length of the bridge).
- (e) Aggregate Weight.
- (f) Polyester Resin Binder Weight.

The tickets shall be available on site for Inspection personnel to use in tabulating quantities.

Curing: The Contractor shall allow the overlay to cure sufficiently before subjecting it to loads or traffic of any nature that may damage the overlay. Cure time depends upon the ambient and deck temperatures as well as initiator/accelerator levels.

The overlay shall be considered cured to a traffic ready state when a minimum reading of 25 on a properly calibrated Swiss hammer is achieved. Other rebound hammers may be used as approved by the Engineer.

(F) Acceptance Testing: Acceptance of the deck repairs, surface preparation, and PPC overlay will be determined by the Engineer based on vertical axis bond tests, and smoothness quality testing performed by the Engineer, assisted by the Contractor.

- (1) Overlay Direct Tension Bond Testing: Direct tension bond (pull-off) tests shall be performed after 24 hours by the Contractor in accordance to ASTM C1583. At a minimum, three (3) direct tension bond tests shall be performed on each bridge overlay. For bridges with deck areas greater than 25,000 square feet, additional tests shall be performed at a frequency of one test per 25,000 square feet of additional deck area, rounded up. Additional testing may be required as directed by the Engineer.

The test result shall be the average of the tests for each structure. Test cores shall be drilled a minimum of 1/2" below the bond line.

The average minimum bond strength of the PPC overlay system on normal weight concrete shall be 250 psi, with no individual test measured below 225 psi. An acceptable test will demonstrate that the overlay bond strength is sufficient by producing a concrete subsurface failure area greater than 50% of the test surface area, at a minimum depth of 1/4". The Contractor shall repair all direct tension test locations with PPC overlay in accordance with this special provision.

Direct tension bond testing shall be performed by an independent testing firm and shall be arranged by the Contractor. The Contractor may perform the direct tension bond testing with the approval of the Engineer. Testing shall be performed using a calibrated tensile loading device, in the presence of the Engineer. The tensile loading device shall be

calibrated annually. The cost of direct tension bond testing shall be included in the bid price for *Placing and Finishing PPC Overlay* item.

- (2) Smoothness Quality Testing: As soon as practical after the PPC has hardened sufficiently, the Contractor shall test the finished surface with an approved rolling straightedge that is designed, constructed, and adjusted, so that it will accurately indicate or mark all deck areas which deviate from a plane surface by more than $\frac{1}{8}$ " in 10'. The Contractor shall remove all high areas in the hardened surface in excess of $\frac{1}{8}$ " in 10' with an approved grinding or cutting machine. Additionally, the final PPC deck surface shall not deviate from the line and elevation indicated on the plans by more than 0.3" over any 50' length. If approved by the Engineer, correct low areas in an acceptable manner.

(G) Corrective Work

- (1) Repair of Surface Defects: The repair materials and finishing methods for surface defects in the overlay shall be in accordance to those used for the application of the overlay. All surface defects shall be repaired to the satisfaction of the Engineer before acceptance of the work is made.
- (2) Correction for Smoothness: Areas showing high spots of more than $\frac{1}{8}$ " in 10' shall be marked and ground until the high spot does not exceed $\frac{1}{8}$ " in 10'. Ground surface may be sawcut grooved to restore the texture if ordered by the Engineer. Areas showing low spots of more than $\frac{1}{8}$ " in 10' shall be marked and a proposed repair procedure shall be submitted to the Engineer. The use of the proposed repair procedure shall be as recommended by the System Provider and approved by the Engineer.
- (3) Replacement of Defective Overlay: A defective overlay, or portion thereof, resulting in failing overlay pull bond test results shall be removed and replaced at the Contractor's expense. The Contractor shall submit a written corrective work proposal to the Engineer, which shall include the methods and procedures that will be used. The Contractor shall not commence corrective work until the methods and procedures have been approved in writing by the Engineer. The Engineer's approval shall not relieve the Contractor of the responsibility of producing work in conformity with the Contract.
- (4) Repair of Cracking: After a one-week cure period, if cracks are in the overlay, the Contractor shall fill the cracks with properly catalyzed and mixed HMWM primer material at no cost to the Department. Care shall be taken to fill the cracks only and ensure minimal HMWM primer is left on the finished surface of the overlay.

Measurement and Payment

Concrete Deck Repair for Polyester Polymer Concrete Overlay will be measured and paid for at the contract unit price bid per square yard and will be full compensation for placement of concrete deck repair material and shall include the cost of labor, tools, equipment and incidentals necessary to complete the work.

Polyester Polymer Concrete Materials will be measured as the actual volume of PPC material complete-in-place. The volume shall include material used for overlay, patching of existing unsound concrete deck surface or overlays, and bridge deck concrete repairs as directed by the Engineer. Tickets provided to the project inspector, showing quantities of PPC produced, shall be sufficient to calculate volume of material placed. Materials placed for trial application(s) shall be

included in this Pay Item if placed and remaining on the bridge deck as part of the permanent overlay. *Polyester Polymer Concrete Materials* will be paid for at the contract unit price per cubic yard and will be full compensation to furnish the PPC material, including HMWM primer, freight to the project site, receiving, storage, and disposal of any unused PPC overlay material. Payment by cubic foot will be based on a 135 lbs/ ft³ unit weight and quantities recorded by calibrated mixer unit readouts.

Placing and Finishing Polyester Polymer Concrete Overlay will be measured and paid for as the contract unit price bid per square yard of overlay placement and final surface finishing. Payment will be full compensation for all labor, equipment, and all incidentals necessary to complete the PPC overlay placement. Construction and removal (if required) of trial application(s), including concrete base surfaces, will not be measured and paid for separately, but shall be incidental to complete the work.

Payment will be made under:

Pay Item

Concrete Deck Repair for Polyester Polymer Concrete Overlay
Polyester Polymer Concrete Materials
Placing & Finishing Polyester Polymer Concrete Overlay

Pay Unit

Square Yard
Cubic Yard
Square Yard

#57 STONE

(SPECIAL)

Provide stone meeting the requirements of Class VI in Section 1016 of the *Standard Specifications*. After removal of damaged slope protection concrete and excavation, the Contractor shall install the Class VI stone on geotextile for drainage as detailed in the plans.

The #57 Stone shall be placed in two lifts; each lift shall be compacted by hand as acceptable to the Engineer.

#57 Stone will be measured and paid for at the contract unit price bid per ton and will be full compensation for the cost of materials, placement and compaction, labor, tools, equipment and incidentals necessary to complete the repair work.

Payment will be made under:

Pay Item

#57 Stone

Pay Unit

Ton

EPOXY COATING AND DEBRIS REMOVAL

(SPECIAL)

GENERAL

This work applies to all bents and end bents of all bridges throughout the project as noted in the plans. Pressure wash, clean and epoxy coat top of the all bent and end bent caps under open joints and at the expansion joints of steel girder spans after painting of all girders is concluded.

Debris removal from the top of bent caps shall be incidental to epoxy coating the top of bent caps.

Use a Type 4A flexible and moisture insensitive epoxy coating in accordance with Section 1081 of the *Standard Specifications*. Provide a Type 3 material certification in accordance with Article 106-3 showing the proposed epoxy meets Type 4A requirements.

SURFACES

Apply the epoxy protective coating to the top surface area, including chamfer area of bent caps under open joints and expansion joints of the steel girder spans, excluding areas under elastomeric bearings.

Thoroughly clean all dust, dirt, grease, oil, laitance and other objectionable material from the concrete surfaces to be coated. Air blast all surfaces immediately before applying the protective coating.

Use only cleaning agents preapproved by the Engineer.

APPLICATION

Apply epoxy protective coating only when the air temperature is at least 40°F and rising, but less than 95°F and the surface temperature of the area to be coated is at least 40°F. Remove any excess or free-standing water from the surfaces before applying the coating. Apply one coat of epoxy protective coating at a rate such that it covers between 100 and 200 sf/gal.

Under certain combinations of circumstances, the cured epoxy protective coating may develop an oily condition on the surface due to amine blush. This condition is not detrimental to the applied system.

Apply the coating so the entire designated surface of the concrete is covered and all pores are filled. To provide a uniform appearance, use the exact same material on all visible surfaces.

BASIS OF PAYMENT

Epoxy Coating will be measured and paid for by the contract unit price per square foot and shall be full compensation for furnishing all material, labor, tools and equipment necessary for cleaning and coating the tops of bent caps. Debris removal from the top of bent caps shall be incidental to epoxy coating the top of bent caps.

Pay Item

Epoxy Coating

Pay Unit

Square Feet

PROJECT SPECIAL PROVISION

(10-18-95) (Rev. 3-21-17)

Z-1a

PERMITS

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

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

The Contractor shall comply with all applicable permit conditions during construction of this project. Those conditions marked by * are the responsibility of the Department and the Contractor has no responsibility in accomplishing those conditions.

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

The Contractor's attention is also directed to Articles 107-10 and 107-13 of the *2018 Standard Specifications* and the following:

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

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

**NATIONWIDE PERMIT 3
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
FINAL NOTICE OF ISSUANCE AND MODIFICATION OF NATIONWIDE PERMITS
FEDERAL REGISTER
AUTHORIZED MARCH 19, 2017**

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

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

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

removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

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

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

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

NATIONWIDE PERMIT GENERAL CONDITIONS

The following General Conditions must be followed in order for any authorization by a NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.
(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.
(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.
3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.
6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

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

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

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

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

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

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

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

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

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

16. Wild and Scenic Rivers. (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status,

unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

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

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

17. Tribal Rights. No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

* (c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that

might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have “no effect” on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

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

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

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

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

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory

birds or eagles, including whether “incidental take” permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

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

* (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed.

(d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

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

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

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

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

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

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

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

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

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

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

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

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-

lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

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

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

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

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

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

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

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

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill

material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

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

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

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

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:
“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To

validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

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

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

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

(c) The signature of the permittee certifying the completion of the activity and mitigation.

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

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

* 32. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the

prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

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

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

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

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

(2) Location of the proposed activity;

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

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

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

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

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

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

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

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

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

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and

supporting materials if the district engineer has established tools and procedures for electronic submittals.

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

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

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

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

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

DISTRICT ENGINEER'S DECISION

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal

individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the individual crossings of waters of the United States to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51, 52, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects. For those NWPs that have a waivable 300 linear foot limit for losses of intermittent and ephemeral stream bed and a 1/2-acre limit (i.e., NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52), the loss of intermittent and ephemeral stream bed, plus any other losses of jurisdictional waters and wetlands, cannot exceed 1/2-acre.

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

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

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

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31, or to evaluate PCNs for activities authorized by NWPs 21, 49, and 50), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

FURTHER INFORMATION

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

DEFINITIONS

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

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

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

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

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

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

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water’s surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National

Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the acres or linear feet of stream bed that are filled or excavated as a result of the regulated activity. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the

primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Protected tribal resources: Those natural resources and properties of traditional or customary religious or cultural importance, either on or off Indian lands, retained by, or reserved by or for, Indian tribes through treaties, statutes, judicial decisions, or executive orders, including tribal trust resources.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine- marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water

surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: 1) held in trust by the United States for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States. If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbodies” include streams, rivers, lakes, ponds, and wetlands.

FINAL 2017 REGIONAL CONDITIONS

NOTICE ABOUT WEB LINKS IN THIS DOCUMENT:

The web links (both internal to our Wilmington District and any external links to collaborating agencies) in this document are valid at the time of publication. However, the Wilmington District Regulatory Program web page addresses, as with other agency web sites, may change over the timeframe of the five-year Nationwide Permit renewal cycle, in response to policy mandates or technology advances. While we will make every effort to check on the integrity of our web links and provide re-direct pages whenever possible, we ask that you report any broken links to us so we can keep the page information current and usable. We apologize in advanced for any broken links that you may encounter, and we ask that you navigate from the Regulatory home page (Regulatory Permit Program Wetlands and Streams) of the Wilmington District Corps of Engineers, to the “Permits” section of our web site to find links for pages that cannot be found by clicking directly on the listed web link in this document.

Final 2017 Regional Conditions for Nationwide Permits (NWP) in the Wilmington District

1.0 Excluded Waters

The Corps has identified waters that will be excluded from the use of all NWP’s during certain timeframes. These waters are:

1.1 Anadromous Fish Spawning Areas

Waters of the United States identified by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas are excluded during the period between February 15 and June 30, without prior written approval from the Corps and either NCDMF or NCWRC.

1.2 Trout Waters Moratorium

Waters of the United States in the designated trout watersheds of North Carolina are excluded during the period between October 15 and April 15 without prior written approval from the NCWRC, or from the Eastern Band of Cherokee Indians (EBCI) Fisheries and Wildlife Management (FWM) office if the project is located on EBCI trust land. (See Section 2.7 for information on the designated trout watersheds).

1.3 Sturgeon Spawning Areas as Designated by the National Marine Fisheries Service (NMFS)

Waters of the United States designated as sturgeon spawning areas are excluded during the period between February 1 and June 30, without prior written approval from the NMFS.

* **2.0 Waters Requiring Additional Notification**

The Corps has identified waters that will be subject to additional notification requirements for activities authorized by all NWPs. These waters are:

* **2.1 Western NC Counties that Drain to Designated Critical Habitat**

For proposed activities within waters of the United States that require a Pre-Construction Notification (PCN) and are located in the sixteen counties listed below, permittees must provide a copy of the PCN to the U.S. Fish and Wildlife Service (USFWS), 160 Zillicoa Street, Asheville, North Carolina 28801. This PCN must be sent concurrently to the U.S. Fish and Wildlife Service and the Corps Asheville Regulatory Field Office. Please see General Condition 18 for specific notification requirements related to the Endangered Species Act and the below website for information on the location of designated critical habitat.

Counties with tributaries that drain to designated critical habitat that require notification to the Asheville U.S. Fish and Wildlife Service: Avery, Cherokee, Forsyth, Graham, Haywood, Henderson, Jackson, Macon, Mecklenburg, Mitchell, Stokes, Surry, Swain, Transylvania, Union and Yancey.

Website and office addresses for Endangered Species Act Information:

The Wilmington District has developed the following website for permittees which provides guidelines on how to review linked websites and maps in order to fulfill NWP General Condition 18 requirements:

<http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram/AgencyCoordination/ESA.asp>

Permittees who do not have internet access may contact the appropriate U.S. Fish and Wildlife Service offices listed below or Corps at (910) 251-4633:

Asheville U.S. Fish and Wildlife Service Office counties: All counties west of and including Anson, Stanly, Davidson, Forsythe and Stokes Counties.

U.S. Fish and Wildlife Service
Asheville Field Office
160 Zillicoa Street
Asheville, NC 28801
Telephone: (828) 258-3939

Raleigh U.S. Fish and Wildlife Service Office counties: all counties east of and including Richmond, Montgomery, Randolph, Guilford, and Rockingham Counties.

U.S. Fish and Wildlife Service
Raleigh Field Office
Post Office Box 33726

Raleigh, NC 27636-3726
Telephone: (919) 856-4520

* 2.2 Special Designation Waters

Prior to the use of any NWP, except NWP 3, that involves a discharge of dredged or fill material in any of the following identified waters and/or adjacent wetlands in North Carolina, permittees shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32). The North Carolina waters and wetlands that require additional notification requirements are:

“Outstanding Resource Waters” (ORW) or “High Quality Waters” (HQW) as designated by the North Carolina Environmental Management Commission; “Primary Nursery Areas” (PNA), including inland PNA, as designated by the North Carolina Marine Fisheries Commission and the NCWRC; or wetlands adjacent to these waters. Definitions of ORW, HQW and PNA waters can be found in the North Carolina State Administrative Code, Title 15A, Subchapters 2B and 10C (15A NCAC 02B, 15A NCAC 10C) and at the following World Wide Web page:

<http://reports.oah.state.nc.us/ncac.asp?folderName=\Title%2015A%20-%20Environmental%20Quality&lookUpError=15A%20NCAC%20000%20>. Surface water classifications for waters in North Carolina can be viewed at the North Carolina Division of Water Resources website or at the following World Wide Web Page:

<https://deq.nc.gov/about/divisions/water-resources/planning/classification-standards/classifications>

Permittees who do not have internet access may contact the Corps at (910) 251- 4633.

2.3 Coastal Area Management Act (CAMA) Areas of Environmental Concern

Non-federal permittees for any NWP in a designated “Area of Environmental Concern” (AEC) in the twenty (20) counties of Eastern North Carolina covered by the North Carolina Coastal Area Management Act (CAMA) must also obtain the required CAMA permit. Development activities for non-federal projects may not commence until a copy of the approved CAMA permit is furnished to the appropriate Wilmington District Regulatory Field Office (Wilmington Field Office – 69 Darlington Avenue, Wilmington, NC 28403, (910) 251-4802 or Washington Field Office – 2407 West 5th Street, Washington, NC 27889, (910) 251-4610).

* 2.4 Barrier Islands

Prior to the use of any NWP on a barrier island of North Carolina, permittees must submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32).

* 2.5 Mountain or Piedmont Bogs

Prior to the use of any NWP in a Bog, as classified by the North Carolina Wetland Assessment Methodology (NCWAM), permittees shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32). The latest version of NCWAM can be

viewed on the Corps RIBITS (Regulatory In-lieu Fee and Bank Information Tracking System) website or at the following World Wide Web Page:
https://ribits.usace.army.mil/ribits_apex/f?p=107:27:0::NO::

*** 2.6 Animal Waste Facilities**

Prior to use of any NWP for construction of animal waste facilities in waters of the United States, including wetlands, permittees shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32).

*** 2.7 Trout Waters**

Prior to any discharge of dredge or fill material into streams, waterbodies or wetlands within the 294 designated trout watersheds of North Carolina, the permittee shall submit a PCN (see General Condition 32) to the District Engineer prior to commencing the activity, unless other thresholds are established in the Regional Conditions in Section 4 (Additional Regional Conditions for Specific Nationwide Permits). The permittee shall also provide a copy of the notification to the appropriate NCWRC office, or to the EBCI FWM Office (if the project is located on EBCI trust land), to facilitate the determination of any potential impacts to designated Trout Waters.

Notification to the Corps will include a statement with the name of the NCWRC or EBCI FWM biologist contacted, the date of the notification, the location of work, a delineation of wetlands and waters, a discussion of alternatives to working in the mountain trout waters, why alternatives were not selected, and, if applicable, a plan to provide compensatory mitigation for all unavoidable adverse impacts to mountain trout waters.

NCWRC and NC Trout Watersheds:

| NCWRC Contact** | Counties that are entirely within Trout Watersheds* | Counties that are partially within Trout Watersheds* |
|---|--|--|
| Mountain Coordinator Balsam Depot 20830 Great Smoky Mountain Expressway Waynesville, NC 28786 Telephone: (828) 558-6011 For NCDOT Projects: NCDOT Coordinator 206 Charter. Street Albemarle, NC 28001 Telephone: (704) 982-9181 | Alleghany Jackson Ashe Macon Avery Swain Graham Transylvania Haywood Watauga | Burke McDowell Buncombe Mitchell Caldwell Polk Cherokee Rutherford Clay Surry Henderson Wilkes Madison Yancey |

*NOTE: To determine notification requirements, contact the Corps Asheville Regulatory Field Office at (828) 271-7980 or view maps for each County at the following World Wide Web page: <http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Trout/>.

**If a project is located on EBCI trust land, submit the PCN in accordance with Section 3.14. Contact the Corps Asheville Regulatory Field Office at (828) 271-7980 with questions.

*** 2.8 Western NC Waters and Corridors**

The permittee shall submit a PCN (see General Condition 32) to the District Engineer prior to commencing the activity in waters of the United States if the activity will occur within any of the following identified waters in western North Carolina, within 0.5 mile on either side of these waters, or within 0.75 mile of the Little Tennessee River, as measured from the top of the bank of the respective water (i.e., river, stream, or creek):

Brasstown Creek
Burningtown Creek
Cane River
Caney Fork
Cartoogechaye Creek
Chattooga River
Cheoah River
Cowee Creek
Cullasaja River
Deep Creek
Ellijay Creek
French Broad River
Garden Creek
Hiwassee River
Hominy Creek
Iotla Creek
Little Tennessee River (within the river or within 0.75 mile on either side of this river)
Nantahala River
Nolichucky River
North Fork French Broad River
North Toe River
Nottley River
Oconaluftee River (portion not located on trust/EBCI land)
Peachtree Creek
Shooting Creek
Snowbird Creek
South Toe River
Stecoah Creek
Swannanoa River
Sweetwater Creek

Tuckasegee River (also spelled Tuckaseegee or Tuckaseigee)
Valley River
Watauga Creek
Watauga River
Wayah Creek
West Fork French Broad River

To determine notification requirements, contact the Corps Asheville Regulatory Field Office at (828) 271-7980 or view maps for all corridors at the following World Wide Web page:
<http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Designated-Special-Waters.aspx>

3.0 List of Corps Regional Conditions for All Nationwide Permits

The following conditions apply to all Nationwide Permits in the Wilmington District:

3.1 Limitation of Loss of Stream Bed

NWPs may not be used for activities that may result in the loss or degradation of more than 300 total linear feet of stream bed, unless the District Engineer has waived the 300 linear foot limit for ephemeral and intermittent streams on a case-by-case basis and has determined that the proposed activity will result in minimal individual and cumulative adverse impacts to the aquatic environment. Waivers for the loss of ephemeral and intermittent streams must be in writing and documented by appropriate/accepted stream quality assessments*. This waiver only applies to the 300 linear feet threshold for NWPs.

This Regional Condition does not apply to NWP 23 (Approved Categorical Exclusions).

*NOTE: Permittees should utilize the most current methodology prescribed by Wilmington District to assess stream function and quality. Information can be found at:
https://ribits.usace.army.mil/ribits_apex/f?p=107:27:0::NO::

3.2 Mitigation for Loss of Stream Bed

For any NWP that results in a loss of more than 150 linear feet of stream, the permittee shall provide a mitigation proposal to compensate for more than minimal individual and cumulative adverse impacts to the aquatic environment. For stream losses of 150 linear feet or less that require a PCN, the District Engineer may determine, on a case-by-case basis, that compensatory mitigation is required to ensure that the activity results in minimal adverse effect on the aquatic environment.

3.3 Pre-construction Notification for Loss of Streambed Exceeding 150 Feet

Prior to use of any NWP for any activity which impacts more than 150 total linear feet of perennial stream, intermittent or ephemeral stream, the permittee shall submit a PCN to the District Engineer prior to commencing the activity (see General Condition 32). This applies to

NWPs that do not have specific notification requirements. If a NWP has specific notification requirements, the requirements of the NWP should be followed.

3.4 Restriction on Use of Live Concrete

For all NWPs which allow the use of concrete as a building material, live or fresh concrete, including bags of uncured concrete, may not come into contact with the water in or entering into waters of the United States. Water inside coffer dams or casings that has been in contact with wet concrete shall only be returned to waters of the United States after the concrete is set and cured and when it no longer poses a threat to aquatic organisms.

3.5 Requirements for Using Riprap for Bank Stabilization

For all NWPs that allow for the use of riprap material for bank stabilization, the following measures shall be applied:

3.5.1. Where bank stabilization is conducted as part of an activity, natural design, bioengineering and/or geoen지니어ing methods that incorporate natural durable materials, native seed mixes, and native plants and shrubs are to be utilized to the maximum extent practicable.

3.5.2. Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters. The placement of filter fabric is not required if the riprap will be pushed or “keyed” into the bank of the waterbody. A waiver from the specifications in this Regional Condition may be requested in writing. The waiver will only be issued if it can be demonstrated that the impacts of complying with this Regional Condition would result in greater adverse impacts to the aquatic environment.

3.5.3. The placement of riprap shall be limited to the areas depicted on submitted work plan drawings.

3.5.4. The riprap material shall be clean and free from loose dirt or any pollutant except in trace quantities that would not have an adverse environmental effect.

3.5.5. It shall be of a size sufficient to prevent its movement from the authorized alignment by natural forces under normal conditions.

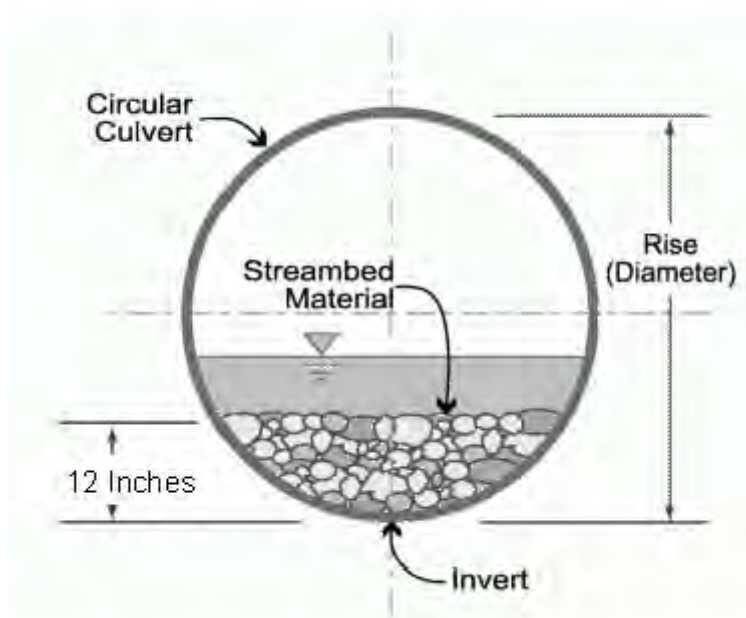
3.5.6. The riprap material shall consist of clean rock or masonry material such as, but not limited to, granite, marl, or broken concrete.

3.6 Requirements for Culvert Placement

3.6.1 For all NWPs that involve the construction/installation of culverts, measures will be included in the construction/installation that will promote the safe passage of fish and other aquatic organisms. The dimension, pattern, and profile of the stream above and below a pipe or culvert should not be modified by altering the width or depth of the stream profile in connection with the construction activity. The width, height, and gradient of a proposed culvert should be

sufficient to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow is the seasonal sustained high flow that typically occurs in the spring. Spring flows should be determined from gage data, if available. In the absence of such data, bank-full flow can be used as a comparable indicator.

In Public Trust Areas of Environmental Concern (AEC) and/or the Estuarine Waters AEC as designated by the Coastal Area Management Act (CAMA): All pipes/culverts must be sufficiently sized to allow for the burial of the bottom of the culvert at least one foot below normal bed elevation.



In all other areas: Culverts greater than 48 inches in diameter will be buried at least one foot below the bed of the stream. Culverts 48 inches in diameter or less shall be buried to maintain aquatic passage and to maintain passage during drought or low flow conditions, and every effort shall be made to maintain the existing channel slope.

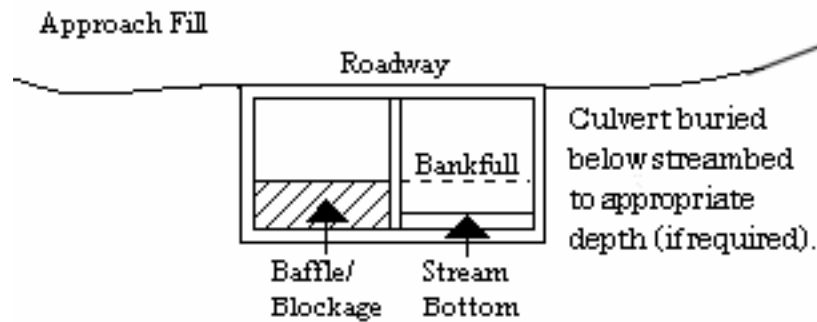
Culverts must be designed and constructed in a manner that minimizes destabilization and head cutting. Destabilizing the channel and head cutting upstream should be considered and appropriate actions incorporated in the design and placement of the culvert.

A waiver from the depth specifications in this condition may be requested, in writing, by the permittee and issued by the Corp; this request must be specific as to the reason(s) for the request. The waiver will be issued if it can be demonstrated that the proposed design would result in less impacts to the aquatic environment.

All counties: Culverts placed within riparian and/or riverine wetlands must be installed in a manner that does not restrict the flow and circulation patterns of waters of the United States.

Culverts placed across wetland fills purely for the purposes of equalizing surface water do not have to be buried, but the culverts must be of adequate size and/or number to ensure unrestricted transmission of water.

3.6.2 Bank-full flows (or less) shall be accommodated through maintenance of the existing bank-full channel cross sectional area. Additional culverts or culvert barrels at such crossings shall be allowed only to receive bank-full flows.



3.6.3 Where adjacent floodplain is available, flows exceeding bank-full should be accommodated by installing culverts at the floodplain elevation. Additional culverts or culvert barrels at such crossings should not be buried, or if buried, must have sills at the inlets to ensure that they only receive flows exceeding bank-full.

3.6.4 Excavation of existing stream channels shall be limited to the minimum necessary to construct or install the proposed culvert. The final width of the impacted stream at the culvert inlet and outlet should be no greater than the original stream width. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if the proposed design would result in less impacts to the aquatic environment and/or if it can be demonstrated that it is not practicable to restore the final width of the impacted stream at the culvert inlet and outlet to the width of the original stream channel.

3.6.5 The width of the culvert shall be comparable to the width of the stream channel. If the width of the culvert is wider than the stream channel, the culvert shall include baffles, benches and/or sills to maintain the width of the stream channel. A waiver from this condition may be requested in writing; this request must be specific as to the reason(s) for the request. The waiver will be issued if it can be demonstrated that it is not practicable or necessary to include baffles, benches or sills and the design would result in less impacts to the aquatic environment.

3.7 Notification to NCDEQ Shellfish Sanitation Section

Permittees shall notify the NCDEQ Shellfish Sanitation Section prior to dredging in or removing sediment from an area closed to shell fishing where the effluent may be released to an area open for shell fishing or swimming in order to avoid contamination from the disposal area and cause a temporary shellfish closure to be made. Such notification shall also be provided to the appropriate Corps Regulatory Field Office. Any disposal of sand to the ocean beach should occur between November 1 and April 30 when recreational usage is low. Only clean sand

should be used and no dredged sand from closed shell fishing areas may be used. If beach disposal were to occur at times other than stated above or if sand from a closed shell fishing area is to be used, a swimming advisory shall be posted, and a press release shall be issued by the permittee.

3.8 Submerged Aquatic Vegetation

Impacts to Submerged Aquatic Vegetation (SAV) are not authorized by any NWP, except NWP 48, unless EFH Consultation has been completed pursuant to the Magnuson-Stevens Fisheries Conservation and Management Act (Magnuson-Stevens Act). Permittees shall submit a PCN (See NWP General Condition 32) to the District Engineer prior to commencing the activity if the project would affect SAV. The permittee may not begin work until notified by the Corps that the requirements of the Magnuson-Stevens Act have been satisfied and that the activity is authorized.

3.9 Sedimentation and Erosion Control Structures and Measures

All PCNs will identify and describe sedimentation and erosion control structures and measures proposed for placement in waters of the United States. The structures and measures should be depicted on maps, surveys or drawings showing location and impacts to jurisdictional wetlands and streams.

3.10 Restoration of Temporary Impacts to Stream Beds

Upon completion of work that involves temporary stream impacts, streambeds are to be restored to pre-project elevations and widths using natural streambed material such that the impacted stream reach mimics the adjacent upstream and downstream reach. The impacted area shall be backfilled with natural streambed material to a depth of at least 12 inches or to the bottom depth of the impacted area if shallower than 12 inches. An engineered in-stream structure or material can be used to provide protection of a buried structure if it provides benefits to the aquatic environment and can be accomplished by a natural streambed design. A permittee may request a waiver of this condition if it is determined a buried structure needs significant physical protection beyond those provided in this condition. This condition does not apply to NWP 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities.

3.11 Restoration of Temporary Impacts to Stream Banks

Upon completion of work involving temporary stream bank impacts, stream banks are to be restored to pre-project grade and contours or beneficial grade and contours if the original bank slope is steep and unstable. Natural durable materials, native seed mixes, and native plants and shrubs are to be utilized in the restoration. Natural designs which use bioengineered and/or geo-engineered methods are to be applied. An engineered structure or material can be used to provide protection of a buried structure if it provides benefits to the stream bank environment, provided it is not in excess of the minimum amount needed for protection and does not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark. A permittee may request a waiver of this condition if it is determined a buried structure

needs significant physical protection beyond those provided in this condition. This condition does not apply to NWP 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities.

3.12 Federal Navigation Channel Setbacks and Corps Easements

3.12.1 Authorized structures and fills located in or adjacent to Federally authorized waterways will be constructed in accordance with the latest setback criteria established by the Wilmington District Engineer. You may review the setback policy at <http://www.saw.usace.army.mil/Missions/Navigation/Setbacks.aspx>. This general permit does not authorize the construction of hardened or permanently fixed structures within the Federally Authorized Channel Setback, unless the activity is approved by the Corps. The permittee shall submit a PCN (see General Condition 32) to the District Engineer prior to the construction of any structures or fills within the Federally Authorized Channel Setback.

3.12.2 The permittee shall obtain a Consent to Cross Government Easement from the Wilmington District’s Land Use Coordinator prior to any crossing of the Corps easement and/or prior to commencing construction of any structures, authorized dredging or other work within the right-of-way of, or in proximity to, a federally designated disposal area. The Land Use Coordinator may be contacted at: CESA-W-OP-N, 69 Darlington Avenue, Wilmington, North Carolina 28403-1343, email: SAWWeb-NAV@usace.army.mil

3.13 Northern Long-eared Bat – Endangered Species Act Compliance

The Wilmington District, U.S. Army Corps of Engineers has consulted with the United States Fish and Wildlife Service (USFWS) in regards to the threatened Northern long-eared bat (NLEB) (*Myotis septentrionalis*) and Standard Local Operating Procedures for Endangered Species (SLOPES) have been approved by the Corps and the USFWS. This condition concerns effects to the NLEB only and does not address effects to other federally listed species and/or federally designated critical habitat.

A. Procedures when the Corps is the lead federal* agency for a project:

The permittee must comply with (1) and (2) below when:

- the project is located in the western 41 counties of North Carolina, to include non-federal aid North Carolina Department of Transportation (NCDOT) projects, OR;
- the project is located in the 59 eastern counties of North Carolina, and is a non-NCDOT project.

*Generally, if a project is located on private property or on non-federal land, and the project is not being funded by a federal entity, the Corps will be the lead federal agency due to the requirement to obtain Department of the Army authorization to impact waters of the United States. If the project is located on federal land, contact the Corps to determine the lead federal agency.

(1) A permittee using a NWP must check to see if their project is located in the range of the NLEB by using the following website:

<http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf>. If the project is within the range of the NLEB, or if the project includes percussive activities (e.g., blasting, pile driving, etc.), the permittee is then required to check the appropriate website in the paragraph below to discover if their project:

- is located in a 12-digit Hydrologic Unit Code area (“red HUC” - shown as red areas on the map), AND/OR;
- involves percussive activities within 0.25 mile of a red HUC.

Red HUC maps - for the western 41 counties in NC (covered by the Asheville Ecological Services Field Office), check the project location against the electronic maps found at: http://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html. For the eastern 59 counties in NC (covered by the Raleigh Ecological Services Field Office), check the project location against the electronic maps found at:

https://www.fws.gov/raleigh/NLEB_RFO.html.

(2) A permittee must submit a PCN to the District Engineer, and receive written authorization from the District Engineer, prior to commencing the activity, if the activity will involve any of the following:

- tree clearing/removal, construction/installation of wind turbines in a red HUC, AND/OR;
- bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, (applies anywhere in the range of the NLEB), AND/OR;
- percussive activities in a red HUC, or within 0.25 mile of a red HUC.

The permittee may proceed with the activity without submitting a PCN to either the Corps or the USFWS, provided the activity complies with all applicable NWP terms and general and regional conditions, if the permittee’s review under A.(1) and A.(2) above shows that the project is:

- located outside of a red HUC (and there are no percussive activities), and the activity will NOT include bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, OR;
- located outside of a red HUC and there are percussive activities, but the percussive activities will not occur within 0.25-mile of a red HUC boundary, and the activity will NOT include bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, OR;

- located in a red HUC, but the activity will NOT include: tree clearing/removal; construction/installation of wind turbines; bridge removal or maintenance, unless the bridge has been inspected and there is no evidence of bat use, and/or; any percussive activities.

B. Procedures when the USACE is not the lead federal agency:

For projects where another federal agency is the lead federal agency - if that other federal agency has completed project-specific ESA Section 7(a)(2) consultation for the NLEB, and has (1) determined that the project would not cause prohibited incidental take of the NLEB, and (2) completed coordination/consultation that is required by the USFWS (per the directions on the respective USFWS office's website), that project may proceed without notification to either the USACE or the USFWS, provided all General and Regional Permit Conditions are met.

The NLEB SLOPES can be viewed on the USACE website at the following World Wide Web Page: <http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/ESA/>. Permittees who do not have internet access may contact the USACE at (910) 251- 4633.

3.14 Work on Eastern Band of Cherokee Indians Land

All PCNs submitted for activities in waters of the United States on Eastern Band of Cherokee Indians (EBCI) trust land (i.e., Qualla Boundary and non-contiguous tracts of trust land), must comply with the requirements of the latest MOU between the Wilmington District and the Eastern Band of Cherokee Indians.

4.0 Additional Regional Conditions for Specific Nationwide Permits

4.1 NWP #3 – Maintenance

4.1.1 In designated trout watersheds, a PCN is not required for impacts to a maximum of 75 linear feet (150 linear feet for temporary dewatering) of streams and waterbodies when conducting maintenance activities. Minor deviations in an existing structure's configuration, temporary structures and temporary fills are authorized as part of the maintenance activity. In designated trout watersheds, the permittee shall submit a PCN (see Regional Condition 2.7 and General Condition 32) to the District Engineer prior to commencing the activity if; 1) impacts (other than temporary dewatering to work in dry conditions) to streams or waterbodies exceed 75 linear feet; 2) temporary impacts to streams or waterbodies associated with dewatering to work in dry conditions exceeds 150 linear feet; 3) the project will involve impacts to wetlands; 4) the project involves the replacement of a bridge or spanning structure with a culvert or non-spanning structure in waters of the United States; or 5) the activity will be constructed during the trout waters moratorium (October 15 through April 15).

4.1.2 The permittee shall submit a PCN (see NWP General Condition 32) to the District Engineer prior to commencing the activity if the activity involves repair, rehabilitation or replacement of impounding structures or parts of impounding structures or fills.

4.1.3 The permittee shall submit a PCN to the District Engineer prior to commencing the activity if the activity will involve the discharge of dredged or fill material into more than 1/10-acre of wetlands or 150 linear feet of stream channel for the construction of temporary access fills and/or temporary road crossings. The PCN must include a restoration plan that thoroughly describes how all temporary fills will be removed, how pre-project conditions will be restored, and include a timetable for all restoration activities.

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER RESOURCES

WATER QUALITY GENERAL CERTIFICATION NO. 4132

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR US ARMY CORPS OF ENGINEERS

- **NATIONWIDE PERMIT 3 (MAINTENANCE),**
- **NATIONWIDE PERMIT 4 (FISH AND WILDLIFE HARVESTING, ENHANCEMENT, AND ATTRACTION DEVICES AND ACTIVITIES),**
- **NATIONWIDE PERMIT 5 (SCIENTIFIC MEASUREMENT DEVICES),**
- **NATIONWIDE PERMIT 6 (SURVEY ACTIVITIES),**
- **NATIONWIDE PERMIT 7 (OUTFALL STRUCTURES AND ASSOCIATED INTAKE STRUCTURES),**
- **NATIONWIDE PERMIT 19 (MINOR DREDGING),**
- **NATIONWIDE PERMIT 20 (RESPONSE OPERATIONS FOR OIL OR HAZARDOUS SUBSTANCES),**
- **NATIONWIDE PERMIT 22 (REMOVAL OF VESSELS),**
- **NATIONWIDE PERMIT 25 (STRUCTURAL DISCHARGES),**
- **NATIONWIDE PERMIT 30 (MOIST SOIL MANAGEMENT FOR WILDLIFE),**
- **NATIONWIDE PERMIT 32 (COMPLETED ENFORCEMENT ACTIONS),**
- **NATIONWIDE PERMIT 36 (BOAT RAMPS),**
- **REGIONAL GENERAL PERMIT 197800056 (PIERS, DOCKS AND BOATHOUSES), AND**
- **REGIONAL GENERAL PERMIT 197800125 (BOAT RAMPS)**

Water Quality Certification Number 4132 is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Regulations in 15A NCAC 02H .0500 and 15A NCAC 02B .0200 for the discharge of fill material to surface waters and wetland areas as described in 33 CFR 330 Appendix A (B) (3, 4, 5, 6, 7, 19, 20, 22, 25, 30, 32, and 36) of the US Army Corps of Engineers regulations and Regional General Permits 197800056 and 197800125.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Effective date: December 1, 2017
Signed this day: December 1, 2017

By



for Linda Culpepper
Interim Director

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Activities meeting any one (1) of the following thresholds or circumstances require written approval for a 401 Water Quality Certification from the Division of Water Resources (DWR):

- a) If any of the conditions of this Certification (listed below) cannot be met; or
 - b) Total additional permanent impacts to streams (including stream relocations or restorations) greater than 40 linear feet at an existing stream impact location; or
 - c) Total temporary and permanent impacts to wetlands or open waters equal to or greater than one-tenth (1/10) of an acre; or
 - d) Complete dewatering and drawdowns to a sediment layer related to pond/dam maintenance or removal; or
 - e) Any impacts to streams from excavation or dredging other than excavation that is conducted as preparation for installing permanent fill or structures or projects qualifying for a Nationwide Permit 19; or
 - f) Except for projects qualifying for a Nationwide permit 3, any permanent impacts to waters, or to wetlands adjacent to waters, designated as: ORW (including SAV), HQW (including PNA), SA, WS-I, WS-II, Trout, or North Carolina or National Wild and Scenic River; or
 - g) Any high-density project, as defined in 15A NCAC 02H .1003(2)(a) and by the density thresholds specified in 15A NCAC 02H .1017, which:
 - i. Disturbs one acre or more of land (including a project that disturbs less than one acre of land that is part of a larger common plan of development or sale); and
 - ii. Has permanent wetland, stream or open water impacts; and
 - iii. Is proposing new built-upon area; and
 - iv. Does not have a stormwater management plan reviewed and approved under a state stormwater program¹ or a state-approved local government stormwater program².
- Projects that have vested rights, exemptions, or grandfathering from state or locally-implemented stormwater programs and projects that satisfy state or locally-implemented stormwater programs through use of community in-lieu programs **require written approval**; or
- h) Any permanent impacts to coastal wetlands [15A NCAC 07H .0205], or Unique Wetlands (UWL); or
 - i) Any impact associated with a Notice of Violation or an enforcement action for violation(s) of NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), NC Surface Water or Wetland Standards (15A NCAC 02B .0200), or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200); or
 - * j) Any impacts to subject water bodies and/or state regulated riparian buffers along subject water bodies in the Neuse, Tar-Pamlico, or Catawba River Basins or in the Randleman Lake, Jordan Lake or Goose Creek Watersheds (or any other basin or watershed with State Regulated Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless*:

¹ e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES

² e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program

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- i. The activities are listed as “EXEMPT” from these rules; or
- ii. A Buffer Authorization Certificate is issued by the NC Division of Coastal Management (DCM); or
- iii. A Buffer Authorization Certificate or a Minor Variance is issued by a delegated or designated local government implementing a state riparian buffer program pursuant to 143-215.23.

Activities included in this General Certification that do not meet one of the thresholds listed above do not require written approval.

I. ACTIVITY SPECIFIC CONDITIONS:

- * 1. For all dam removal projects meeting the definition under G.S. 143-215.25 and requirements under G.S. 143-215.27 of a professionally supervised dam removal, the applicant shall provide documentation that any sediment that may be released has similar or lower level of contamination than sediment sampled from downstream of the dam in accordance with Session Law 2017-145.
- * 2. For the North Carolina Department of Transportation, compliance with the NCDOT’s individual NPDES permit NCS000250 shall serve to satisfy this condition. All other high-density projects that trigger threshold item (g) above shall comply with one of the following requirements: [15A NCAC 02H .0506(b)(5) and (c)(5)]
 - a. Provide a completed Stormwater Management Plan (SMP) for review and approval, including all appropriate stormwater control measure (SCM) supplemental forms and associated items, that complies with the high-density development requirements of 15A NCAC 02H .1003. Stormwater management shall be provided throughout the entire project area in accordance with 15A NCAC 02H .1003. For the purposes of 15A NCAC 02H .1003(2)(a), density thresholds shall be determined in accordance with 15A NCAC 02H .1017.
 - b. Provide documentation (including calculations, photos, etc.) that the project will not cause degradation of downstream surface waters. Documentation shall include a detailed analysis of the hydrological impacts from stormwater runoff when considering the volume and velocity of stormwater runoff from the project built upon area and the size and existing condition of the receiving stream(s).

Exceptions to this condition require application to and written approval from DWR.

II. GENERAL CONDITIONS:

- 1. When written authorization is required, the plans and specifications for the project are incorporated into the authorization by reference and are an enforceable part of the Certification. Any modifications to the project require notification to DWR and may require an application submittal to DWR with the appropriate fee. [15A NCAC 02H .0501 and .0502]

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2. No waste, spoil, solids, or fill of any kind shall occur in wetlands or waters beyond the footprint of the impacts (including temporary impacts) as authorized in the written approval from DWR; or beyond the thresholds established for use of this Certification without written authorization. [15A NCAC 02H .0501 and .0502]

No removal of vegetation or other impacts of any kind shall occur to state regulated riparian buffers beyond the footprint of impacts approved in a Buffer Authorization or Variance or as listed as an exempt activity in the applicable riparian buffer rules. [15A NCAC 02B .0200]

- * 3. In accordance with 15A NCAC 02H .0506(h) and Session Law 2017-10, compensatory mitigation may be required for losses of greater than 300 linear feet of perennial streams and/or greater than one (1) acre of wetlands. Impacts associated with the removal of a dam shall not require mitigation when the removal complies with the requirements of Part 3 of Article 21 in Chapter 143 of the North Carolina General Statutes. Impacts to isolated and other non-404 jurisdictional wetlands shall not be combined with 404 jurisdictional wetlands for the purpose of determining when impact thresholds trigger a mitigation requirement. For linear publicly owned and maintained transportation projects that are not determined to be part of a larger common plan of development by the US Army Corps of Engineers, compensatory mitigation may be required for losses of greater than 300 linear feet per perennial stream.

Compensatory stream and/or wetland mitigation shall be proposed and completed in compliance with G.S. 143-214.11. For applicants proposing to conduct mitigation within a project site, a complete mitigation proposal developed in accordance with the most recent guidance issued by the US Army Corps of Engineers Wilmington District shall be submitted for review and approval with the application for impacts.

4. All activities shall be in compliance with any applicable State Regulated Riparian Buffer Rules in Chapter 2 of Title 15A.
5. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H .0506 (b)(3) and (c)(3) and 15A NCAC 02B .0200]

Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*, or for linear transportation projects, the *NCDOT Sediment and Erosion Control Manual*.

All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.

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For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.

If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-I, WS-II, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds*.

6. Sediment and erosion control measures shall not be placed in wetlands or waters except within the footprint of temporary or permanent impacts authorized under this Certification. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0501 and .0502]
7. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within wetlands. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02B .0201]
8. An NPDES Construction Stormwater Permit (NCG010000) is required for construction projects that disturb one (1) or more acres of land. The NCG010000 Permit allows stormwater to be discharged during land disturbing construction activities as stipulated in the conditions of the permit. If the project is covered by this permit, full compliance with permit conditions including the erosion & sedimentation control plan, inspections and maintenance, self-monitoring, record keeping and reporting requirements is required. [15A NCAC 02H .0506(b)(5) and (c)(5)]

The North Carolina Department of Transportation (NCDOT) shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their individual NPDES (NCS000250) stormwater permit. [15A NCAC 02H .0506(b)(5) and (c)(5)]

9. All work in or adjacent to streams shall be conducted so that the flowing stream does not come in contact with the disturbed area. Approved best management practices from the most current version of the *NC Sediment and Erosion Control Manual*, or the *NC DOT Construction and Maintenance Activities Manual*, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(3) and (c)(3)]
10. If activities must occur during periods of high biological activity (e.g. sea turtle nesting, fish spawning, or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities. [15A NCAC 02H .0506 (b)(2) and 15A NCAC 04B .0125]

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All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) shall be implemented. Exceptions to this condition require written approval by the resource agency responsible for the given moratorium. A copy of the approval from the resource agency shall be forwarded to DWR.

Work within a designated trout watershed of North Carolina (as identified by the Wilmington District of the US Army Corps of Engineers), or identified state or federal endangered or threatened species habitat, shall be coordinated with the appropriate WRC, USFWS, NMFS, and/or DMF personnel.

11. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. [15A NCAC 02H .0506(b)(2) and (c)(2)]

Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches, to allow low flow passage of water and aquatic life.

If multiple pipes or barrels are required, they shall be designed to mimic the existing stream cross section as closely as possible, including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel shall be avoided.

When topographic constraints indicate culvert slopes of greater than 5%, culvert burial is not required, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g. rock ladders, cross vanes, etc.). Notification, including supporting documentation to include a location map of the culvert, culvert profile drawings, and slope calculations, shall be provided to DWR 60 calendar days prior to the installation of the culvert.

When bedrock is present in culvert locations, culvert burial is not required provided that there is sufficient documentation of the presence of bedrock. Notification, including supporting documentation such as a location map of the culvert, geotechnical reports, photographs, etc. shall be provided to DWR a minimum of 60 calendar days prior to the installation of the culvert. If bedrock is discovered during construction, then DWR shall be notified by phone or email within 24 hours of discovery.

If other site-specific topographic constraints preclude the ability to bury the culverts as described above and/or it can be demonstrated that burying the culvert would result in destabilization of the channel, then exceptions to this condition require application to and written approval from DWR.

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Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

The establishment of native woody vegetation and other soft stream bank stabilization techniques shall be used where practicable instead of rip-rap or other bank hardening methods.

12. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means to the maximum extent practicable (e.g. grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(5)]
13. Application of fertilizer to establish planted/seeded vegetation within disturbed riparian areas and/or wetlands shall be conducted at agronomic rates and shall comply with all other Federal, State and Local regulations. Fertilizer application shall be accomplished in a manner that minimizes the risk of contact between the fertilizer and surface waters. [15A NCAC 02B .0200 and 15A NCAC 02B .0231]
14. If concrete is used during construction, then all necessary measures shall be taken to prevent direct contact between uncured or curing concrete and waters of the state. Water that inadvertently contacts uncured concrete shall not be discharged to waters of the state. [15A NCAC 02B .0200]
15. All proposed and approved temporary fill and culverts shall be removed and the impacted area shall be returned to natural conditions within 60 calendar days after the temporary impact is no longer necessary. The impacted areas shall be restored to original grade, including each stream's original cross sectional dimensions, planform pattern, and longitudinal bed profile. For projects that receive written approval, no temporary impacts are allowed beyond those included in the application and authorization. All temporarily impacted sites shall be restored and stabilized with native vegetation. [15A NCAC 02H .0506(b)(2) and (c)(2)]
16. All proposed and approved temporary pipes/culverts/rip-rap pads etc. in streams shall be installed as outlined in the most recent edition of the *North Carolina Sediment and Erosion Control Planning and Design Manual* or the *North Carolina Surface Mining Manual* or the *North Carolina Department of Transportation Best Management Practices for Construction and Maintenance Activities* so as not to restrict stream flow or cause dis-equilibrium during use of this Certification. [15A NCAC 02H .0506(b)(2) and (c)(2)]

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17. Any rip-rap required for proper culvert placement, stream stabilization, or restoration of temporarily disturbed areas shall be restricted to the area directly impacted by the approved construction activity. All rip-rap shall be placed such that the original stream elevation and streambank contours are restored and maintained. Placement of rip-rap or other approved materials shall not result in de-stabilization of the stream bed or banks upstream or downstream of the area or in a manner that precludes aquatic life passage. [15A NCAC 02H .0506(b)(2)]
18. Any rip-rap used for stream or shoreline stabilization shall be of a size and density to prevent movement by wave, current action, or stream flows and shall consist of clean rock or masonry material free of debris or toxic pollutants. Rip-rap shall not be installed in the streambed except in specific areas required for velocity control and to ensure structural integrity of bank stabilization measures. [15A NCAC 02H .0506(b)(2)]
19. Applications for rip-rap groins proposed in accordance with 15A NCAC 07H .1401 (NC Division of Coastal Management General Permit for construction of Wooden and Rip-rap Groins in Estuarine and Public Trust Waters) shall meet all the specific conditions for design and construction specified in 15A NCAC 07H .1405.
20. All mechanized equipment operated near surface waters should be inspected and maintained regularly to prevent contamination of surface waters from fuels, lubricants, hydraulic fluids, or other toxic materials. Construction shall be staged in order to minimize the exposure of equipment to surface waters to the maximum extent practicable. Fueling, lubrication and general equipment maintenance shall be performed in a manner to prevent, to the maximum extent practicable, contamination of surface waters by fuels and oils. [15A NCAC 02H .0506 (b)(3) and (c)(3) and 15A NCAC 02B .0211 (12)]
21. Heavy equipment working in wetlands shall be placed on mats or other measures shall be taken to minimize soil disturbance. [15A NCAC 02H .0506 (b)(3) and (c)(3)]
22. In accordance with 143-215.85(b), the applicant shall report any petroleum spill of 25 gallons or more; any spill regardless of amount that causes a sheen on surface waters; any petroleum spill regardless of amount occurring within 100 feet of surface waters; and any petroleum spill less than 25 gallons that cannot be cleaned up within 24 hours.
- * 23. If an environmental document is required under the State Environmental Policy Act (SEPA), then this General Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse. If an environmental document is required under the National Environmental Policy Act (NEPA), then this General Certification is not valid until a Categorical Exclusion, the Final Environmental Assessment, or Final Environmental Impact Statement is published by the lead agency. [15A NCAC 01C .0107(a)]
24. This General Certification does not relieve the applicant of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

25. The applicant and their authorized agents shall conduct all activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act), and any other appropriate requirements of State and Federal Law. If DWR determines that such standards or laws are not being met, including failure to sustain a designated or achieved use, or that State or Federal law is being violated, or that further conditions are necessary to assure compliance, then DWR may revoke or modify a written authorization associated with this General Water Quality Certification. [15A NCAC 02H .0507(d)]
26. The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this Certification. A copy of this Certification, including all conditions shall be available at the project site during the construction and maintenance of this project. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
- * 27. When written authorization is required for use of this Certification, upon completion of all permitted impacts included within the approval and any subsequent modifications, the applicant shall be required to return a certificate of completion (available on the DWR website <https://edocs.deq.nc.gov/Forms/Certificate-of-Completion>). [15A NCAC 02H .0502(f)]
28. Additional site-specific conditions, including monitoring and/or modeling requirements, may be added to the written approval letter for projects proposed under this Water Quality Certification in order to ensure compliance with all applicable water quality and effluent standards. [15A NCAC 02H .0507(c)]
29. If the property or project is sold or transferred, the new permittee shall be given a copy of this Certification (and written authorization if applicable) and is responsible for complying with all conditions. [15A NCAC 02H .0501 and .0502]

III. GENERAL CERTIFICATION ADMINISTRATION:

- * 1. In accordance with North Carolina General Statute 143-215.3D(e), written approval for a 401 Water Quality General Certification must include the appropriate fee. An applicant for a CAMA permit under Article 7 of Chapter 113A of the General Statutes for which a Water Quality Certification is required shall only make one payment to satisfy both agencies; the fee shall be as established by the Secretary in accordance with 143-215.3D(e)(7).
2. This Certification neither grants nor affirms any property right, license, or privilege in any waters, or any right of use in any waters. This Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and this Certification does not create any prescriptive right or any right of priority regarding any usage of water. This Certification shall not be interposed as a defense in any action respecting the determination of riparian or littoral rights or other rights to water use. No consumptive user is deemed by virtue of this Certification to possess any prescriptive or

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other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded.

3. This Certification grants permission to the Director, an authorized representative of the Director, or DWR staff, upon the presentation of proper credentials, to enter the property during normal business hours. [15A NCAC 02H .0502(e)]
4. This General Certification shall expire on the same day as the expiration date of the corresponding Nationwide Permit and/or Regional General Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this Certification. This General Certification is rescinded when the US Army Corps of Engineers reauthorizes any of the corresponding Nationwide Permits and/or Regional General Permits or when deemed appropriate by the Director of the Division of Water Resources.
5. Non-compliance with or violation of the conditions herein set forth by a specific project may result in revocation of this General Certification for the project and may also result in criminal and/or civil penalties.
- * 6. The Director of the North Carolina Division of Water Resources may require submission of a formal application for Individual Certification for any project in this category of activity if it is deemed in the public's best interest or determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or degrade the waters so that existing uses of the waters or downstream waters are precluded.

History Note: Water Quality Certification (WQC) Number 4132 issued December 1, 2017 replaces WCQ 4085 issued March 3, 2017; WQC 3883 issued March 19, 2012; WQC Number 3687 issued November 1, 2007; WQC Number 3624 issued March 19, 2007; WQC Number 3494 issued December 31, 2004; and WQC Number 3376 issued March 18, 2002.

County : Duplin, Pender

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|----------------------|--------------|-------|--|----------|-----------|--------|
| ROADWAY ITEMS | | | | | | |
| 0001 | 0000100000-N | 800 | MOBILIZATION | Lump Sum | L.S. | |
| 0002 | 0106000000-E | 230 | BORROW EXCAVATION | 87.28 | CY | |
| 0003 | 0156000000-E | 250 | REMOVAL OF EXISTING ASPHALT PAVEMENT | 300 | SY | |
| 0004 | 0318000000-E | 300 | FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES | 49.5 | TON | |
| 0005 | 0320000000-E | 300 | FOUNDATION CONDITIONING GEOTEXTILE | 205.97 | SY | |
| 0006 | 0366000000-E | 310 | 15" RC PIPE CULVERTS, CLASS III | 128 | LF | |
| 0007 | 0372000000-E | 310 | 18" RC PIPE CULVERTS, CLASS III | 32 | LF | |
| 0008 | 0453000000-E | 310 | *** PIPE END SECTION (15") | 18 | EA | |
| 0009 | 0453000000-E | 310 | *** PIPE END SECTION (18") | 4 | EA | |
| 0010 | 0986000000-E | SP | GENERIC PIPE ITEM 12" CAA PIPE CULVERTS, 0.060" THICK | 642 | LF | |
| 0011 | 0986000000-E | SP | GENERIC PIPE ITEM 12" HDPE PIPE CULVERTS | 566 | LF | |
| 0012 | 0986000000-E | SP | GENERIC PIPE ITEM 15" CAA PIPE CULVERTS, 0.060" THICK | 66 | LF | |
| 0013 | 0986000000-E | SP | GENERIC PIPE ITEM 15" HDPE PIPE CULVERTS | 60 | LF | |
| 0014 | 0992000000-E | SP | GENERIC PIPE ITEM 12" CAA PIPE ELBOWS, 0.060" THICK | 49 | EA | |
| 0015 | 0992000000-E | SP | GENERIC PIPE ITEM 12" HDPE PIPE ELBOWS | 88 | EA | |
| 0016 | 0992000000-E | SP | GENERIC PIPE ITEM 15" CAA PIPE ELBOWS, 0.060" THICK | 11 | EA | |

County : Duplin, Pender

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|---|-----------------|-----------|--------|
| 0017 | 0992000000-E | SP | GENERIC PIPE ITEM 15" HDPE PIPE ELBOWS | 10 EA | | |
| 0018 | 0992000000-E | SP | GENERIC PIPE ITEM REPAIR FLARED END SECTION | 19 EA | | |
| 0019 | 1121000000-E | 520 | AGGREGATE BASE COURSE | 2,007 TON | | |
| 0020 | 1245000000-E | SP | SHOULDER RECONSTRUCTION | 43.43 SMI | | |
| 0021 | 1260000000-E | SP | AGGREGATE SHOULDER BORROW | 10,696 TON | | |
| 0022 | 1297000000-E | 607 | MILLING ASPHALT PAVEMENT, **** DEPTH (1-1/2") | 101,824 SY | | |
| 0023 | 1308000000-E | 607 | MILLING ASPHALT PAVEMENT, **** TO ***** (1-1/2" TO 2-1/2") | 1,392,046 SY | | |
| 0024 | 1519000000-E | 610 | ASPHALT CONC SURFACE COURSE, TYPE S9.5B | 2,101 TON | | |
| 0025 | 1524200000-E | 610 | ASPHALT CONC SURFACE COURSE, TYPE S9.5D | 135,421 TON | | |
| 0026 | 1575000000-E | 620 | ASPHALT BINDER FOR PLANT MIX | 141 TON | | |
| 0027 | 1577000000-E | 620 | POLYMER MODIFIED ASPHALT BIN- DER FOR PLANT MIX | 11,189 TON | | |
| 0028 | 1662000000-E | 650 | OPEN-GRADED ASPHALT FRICTION COURSE, TYPE FC-1 MODIFIED | 56,912 TON | | |
| 0029 | 1840000000-E | 665 | MILLED RUMBLE STRIPS (ASPHALT CONCRETE) | 623,640 LF | | |
| 0030 | 1880000000-E | SP | GENERIC PAVING ITEM PATCHING EXISTING PAVEMENT (FULL DEPTH) | 620 TON | | |
| 0031 | 2253000000-E | 840 | PIPE COLLARS | 9.24 CY | | |
| 0032 | 2286000000-N | 840 | MASONRY DRAINAGE STRUCTURES | 136 EA | | |
| 0033 | 2364200000-N | 840 | FRAME WITH TWO GRATES, STD 840.20 | 136 EA | | |

County : Duplin, Pender

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|--|--------------|-----------|--------|
| 0034 | 2365000000-N | 840 | FRAME WITH TWO GRATES, STD 840.22 | 3 EA | | |
| 0035 | 2473000000-N | SP | GENERIC DRAINAGE ITEM DROP INLET REPAIR | 25 EA | | |
| 0036 | 2473000000-N | SP | GENERIC DRAINAGE ITEM REMOVE & REPLACE CONCRETE APRON FOR DROP INLET | 88 EA | | |
| 0037 | 2549000000-E | 846 | 2'-6" CONCRETE CURB & GUTTER | 700 LF | | |
| 0038 | 2556000000-E | 846 | SHOULDER BERM GUTTER | 23,300 LF | | |
| 0039 | 2752000000-E | SP | GENERIC PAVING ITEM REMOVE & REPLACE 2'-6" CURB & GUTTER | 300 LF | | |
| 0040 | 3030000000-E | 862 | STEEL BEAM GUARDRAIL | 775 LF | | |
| 0041 | 3150000000-N | 862 | ADDITIONAL GUARDRAIL POSTS | 131 EA | | |
| 0042 | 3210000000-N | 862 | GUARDRAIL END UNITS, TYPE CAT-1 | 32 EA | | |
| 0043 | 3287000000-N | SP | GUARDRAIL END UNITS, TYPE TL-3 | 46 EA | | |
| 0044 | 3319000000-N | SP | GUARDRAIL ANCHOR UNITS, TYPE B-83 | 2 EA | | |
| 0045 | 3420000000-E | SP | GENERIC GUARDRAIL ITEM REMOVE & REPLACE EXISTING GUARDRAIL | 40,681 LF | | |
| 0046 | 3435000000-N | SP | GENERIC GUARDRAIL ITEM GUARDRAIL PRE-FAB ANCHOR POSTS | 11 EA | | |
| 0047 | 3435000000-N | SP | GENERIC GUARDRAIL ITEM REMOVE & RESET ANCHOR UNIT, TYPE B-83 | 22 EA | | |
| 0048 | 3435000000-N | SP | GENERIC GUARDRAIL ITEM REMOVE & RESET END UNIT, TYPE CAT-1 | 30 EA | | |
| 0049 | 3435000000-N | SP | GENERIC GUARDRAIL ITEM REMOVE & RESET END UNIT, TYPE TL-3 | 47 EA | | |

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| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|--|--------------|-----------|--------|
| 0050 | 3649000000-E | 876 | RIP RAP, CLASS B | 20 TON | | |
| 0051 | 3656000000-E | 876 | GEOTEXTILE FOR DRAINAGE | 80 SY | | |
| 0052 | 4400000000-E | 1110 | WORK ZONE SIGNS (STATIONARY) | 2,080 SF | | |
| 0053 | 4405000000-E | 1110 | WORK ZONE SIGNS (PORTABLE) | 78 SF | | |
| 0054 | 4413000000-E | SP | WORK ZONE ADVANCE/GENERAL WARNING SIGNING | 27 SF | | |
| 0055 | 4420000000-N | 1120 | PORTABLE CHANGEABLE MESSAGE SIGN | 6 EA | | |
| 0056 | 4423000000-N | SP | WORK ZONE DIGITAL SPEED LIMIT SIGNS | 6 EA | | |
| 0057 | 4434000000-N | SP | SEQUENTIAL FLASHING WARNING LIGHTS | 36 EA | | |
| 0058 | 4457000000-N | SP | TEMPORARY TRAFFIC CONTROL | Lump Sum | L.S. | |
| 0059 | 4465000000-N | 1160 | TEMPORARY CRASH CUSHIONS | 4 EA | | |
| 0060 | 4470000000-N | 1160 | REMOVE & RESET TEMPORARY CRASH CUSHION | 118 EA | | |
| 0061 | 4480000000-N | 1165 | TMA | 2 EA | | |
| 0062 | 4485000000-E | 1170 | PORTABLE CONCRETE BARRIER | 2,200 LF | | |
| 0063 | 4500000000-E | 1170 | REMOVE & RESET PORTABLE CONCRETE BARRIER | 27,860 LF | | |
| 0064 | 4510000000-N | 1190 | LAW ENFORCEMENT | 590 HR | | |
| 0065 | 4600000000-N | SP | GENERIC TRAFFIC CONTROL ITEM LANE CLOSURE | 570 EA | | |
| 0066 | 4600000000-N | SP | GENERIC TRAFFIC CONTROL ITEM RAMP/LOOP CLOSURE | 75 EA | | |
| 0067 | 4685000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS) | 8,150 LF | | |

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| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|---|----------|-----------|--------|
| 0068 | 4695000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS) | 2,933 | LF | |
| 0069 | 4720000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING CHARACTER (90 MILS) | 18 | EA | |
| 0070 | 4725000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS) | 97 | EA | |
| 0071 | 4726110000-E | 1205 | HEATED-IN-PLACE THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS) | 6 | EA | |
| 0072 | 4815000000-E | 1205 | PAINT PAVEMENT MARKING LINES (6") | 704,187 | LF | |
| 0073 | 4825000000-E | 1205 | PAINT PAVEMENT MARKING LINES (12") | 7,509 | LF | |
| 0074 | 4845000000-N | 1205 | PAINT PAVEMENT MARKING SYMBOL | 36 | EA | |
| 0075 | 4847040000-E | 1205 | POLYUREA PAVEMENT MARKING LINES (6", 30 MILS) | 5,706 | LF | |
| 0078 | 4855000000-E | 1205 | REMOVAL OF PAVEMENT MARKING LINES (6") | 4,492 | LF | |
| 0079 | 4875000000-N | 1205 | REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS | 1 | EA | |
| 0080 | 4891000000-E | 1205 | GENERIC PAVEMENT MARKING ITEM THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS) | 512 | LF | |
| 0081 | 4895000000-N | SP | GENERIC PAVEMENT MARKING ITEM MARKERS FOR DRAINAGE STRUCTURE & CONCRETE PAD | 89 | EA | |
| 0082 | 4900000000-N | 1251 | PERMANENT RAISED PAVEMENT MARKERS | 41 | EA | |
| 0083 | 4905000000-N | 1253 | SNOWPLOWABLE PAVEMENT MARKERS | 4,976 | EA | |
| 0084 | 6000000000-E | 1605 | TEMPORARY SILT FENCE | 30,640 | LF | |
| 0085 | 6009000000-E | 1610 | STONE FOR EROSION CONTROL, CLASS B | 10 | TON | |

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| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|---|---------------|-----------|--------|
| 0086 | 6012000000-E | 1610 | SEDIMENT CONTROL STONE | 10 TON | | |
| 0087 | 6015000000-E | 1615 | TEMPORARY MULCHING | 0.4 ACR | | |
| 0088 | 6018000000-E | 1620 | SEED FOR TEMPORARY SEEDING | 20 LB | | |
| 0089 | 6021000000-E | 1620 | FERTILIZER FOR TEMPORARY SEED- ING | 0.1 TON | | |
| 0090 | 6029000000-E | SP | SAFETY FENCE | 900 LF | | |
| 0091 | 6036000000-E | 1631 | MATTING FOR EROSION CONTROL | 69,130 SY | | |
| 0092 | 6042000000-E | 1632 | 1/4" HARDWARE CLOTH | 20 LF | | |
| 0093 | 6071010000-E | SP | WATTLE | 4,330 LF | | |
| 0094 | 6084000000-E | 1660 | SEEDING & MULCHING | 9.08 ACR | | |
| 0095 | 6090000000-E | 1661 | SEED FOR REPAIR SEEDING | 20 LB | | |
| 0096 | 6093000000-E | 1661 | FERTILIZER FOR REPAIR SEEDING | 0.1 TON | | |
| 0097 | 6117000000-N | SP | RESPONSE FOR EROSION CONTROL | 136 EA | | |
| 0098 | 6117500000-N | SP | CONCRETE WASHOUT STRUCTURE | 12 EA | | |
| 0099 | 6975000000-N | SP | GENERIC REST AREA ITEM REMOVAL OF LANDSCAPE TIMBERS & REBAR | Lump Sum | L.S. | |
| 0100 | 7444000000-E | 1725 | INDUCTIVE LOOP SAWCUT | 640 LF | | |
| 0113 | 4688000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING LINES (6", 90 MILS) | 752,652 LF | | |
| 0114 | 4700000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING LINES (12", 90 MILS) | 7,509 LF | | |

County : Duplin, Pender

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|------------------------|--------------|-------|--|----------|-----------|--------|
| STRUCTURE ITEMS | | | | | | |
| 0101 | 8161000000-E | 420 | GROOVING BRIDGE FLOORS | 92,851.3 | SF | |
| 0102 | 8559000000-E | SP | CLASS II, SURFACE PREPARATION | 1.4 | SY | |
| 0103 | 8660000000-E | SP | CONCRETE REPAIRS | 38.3 | CF | |
| 0104 | 8664000000-E | SP | SHOTCRETE REPAIRS | 88.5 | CF | |
| 0105 | 8678000000-E | SP | EPOXY RESIN INJECTION | 1,084 | LF | |
| 0106 | 8867000000-E | SP | GENERIC STRUCTURE ITEM POURABLE SILICONE JOINT SEALANT | 2,323 | LF | |
| 0107 | 8874000000-E | SP | GENERIC STRUCTURE ITEM #57 STONE | 4 | TON | |
| 0108 | 8881000000-E | SP | GENERIC STRUCTURE ITEM POLYESTER POLYMER CONCRETE MATERIALS | 326 | CY | |
| 0109 | 8893000000-E | SP | GENERIC STRUCTURE ITEM CONCRETE DECK REPAIR FOR POLY- ESTER POLYMER CONCRETE OVERLAY | 196 | SY | |
| 0110 | 8893000000-E | SP | GENERIC STRUCTURE ITEM PLACING & FINISHING POLYESTER POLYMER CONCRETE OVERLAY | 11,740.4 | SY | |
| 0111 | 8893000000-E | SP | GENERIC STRUCTURE ITEM SCARIFYING BRIDGE DECK | 11,740.4 | SY | |
| 0112 | 8893000000-E | SP | GENERIC STRUCTURE ITEM SHOTBLASTING BRIDGE DECK | 11,740.4 | SY | |

1454/Aug15/Q4176130.8/D450532160000/E112

Total Amount Of Bid For Entire Project :

GFE
DBE GOALSET: 9.0%
DBE GOAL OBT: 7.54%

Vendor 1 of 3: BARNHILL CONTRACTING CO (3516) Call Order 001 (Proposal: C204337)

Bid Information

Proposal County: DUPLIN PENDER
Vendor Address:
Signature Check: Carey Meredith Swann, III
Time Bid Received: August 20, 2019 01:14 PM
Amendment Count: 1

Bid Checksum: 5802C4ED41
Bid Total: \$27,824,419.07
Items Total: \$27,824,419.07
Time Total: \$0.00

Bidding Errors:
DBE List Goal not met.

Vendor 1 of 3: BARNHILL CONTRACTING CO (3516)
Call Order 001 (Proposal: C204337)

Bid Bond Information

| | |
|-----------------------------|--|
| Projects: | Bond Maximum: |
| Counties: | State of Incorporation: Connecticut |
| Bond ID: SNC19676243 | Agency Execution Date: 8/1/2019 12 |
| Paid by Check: No | Surety Name: Surety2000 |
| Bond Percent: 5% | Bond Agency Name: Travelers Casualty and Surety Company of America |

DBE Load Information

Letting ID: L190820
Letting Date: 08/20/2019
Call Order: 001
Contract ID: C204337
Project: STBGIM-0040 (075) STBGIM-0040 (075)
Bid Total: \$27,824,419.07
DBE Goal: 9.00% (\$2,504,197.72)

Vendor ID: 3516
Vendor Name: Barnhill Contracting Company
DBE Entered: 7.54% (\$2,098,218.36)

| <u>Vendor ID</u> | <u>DBE Name</u> | <u>Is Supplier?</u> | <u>City/State</u> | <u>Goods/Service</u> | <u>Amount</u> |
|------------------|------------------------------------|---------------------|---|----------------------|--------------------------------|
| 7621 | DOSS TRUCKING INC | No | 479 FOY LOCKAMY RD , JACKSONVILLE, NC 28540 | SubContractor | 406,648.80 Committed |
| 15844 | ATLANTIC COAST TRUCKING INC | No | P.O. BOX 88 , HOLLY RIDGE, NC 28445 | SubContractor | 453,269.76 Committed |
| 4898 | BULLINGTON CONSTRUCTION INC | No | 417 FOXGLOVE LANE , INDIAN TRAIL, NC 28079 | SubContractor | 877,579.80 Committed |
| 4142 | JERRY T BUNN TRUCKING LLC | No | 6839 FLAT ROCK RD. , SIMS, NC 27880 | SubContractor | 240,480.00 Committed |
| 4720 | MILITARY & FEDERAL CONSTRUCTION CO | No | 317-C CENTER STREET , JACKSONVILLE, NC 28546 | SubContractor | 120,240.00 Committed |

Letting: L190820
08/20/2019 02:00:00 PM

North Carolina Department of Transportation
3516 - Barnhill Contracting Company

Contract ID: C204337
Call: 001

BondID: SNC19676243

Surety Registry Agency: Surety2000

Verified?: 1

Surety Agency: Travelers Casualty and Surety Company of America

Bond Execution Date: 8/1/2019 12:04:58 PM

| Line Number | Item Number | Quantity | Unit | Unit Price | Extension Price |
|-------------------------------|--|-------------|------|----------------|-----------------|
| Section 0001 ROADWAY ITEMS | | | | | |
| 0001 | 0000100000-N | 1.000 | LS | \$665,000.0000 | \$665,000.00 |
| | MOBILIZATION | | | | |
| 0002 | 0106000000-E | 87.280 | CY | \$22.1500 | \$1,933.25 |
| | BORROW EXCAVATION | | | | |
| 0003 | 0156000000-E | 300.000 | SY | \$9.5000 | \$2,850.00 |
| | REMOVAL OF EXISTING ASPHALT PAVEMENT | | | | |
| 0004 | 0318000000-E | 49.500 | TON | \$40.0000 | \$1,980.00 |
| | FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES | | | | |
| 0005 | 0320000000-E | 205.970 | SY | \$2.7500 | \$566.42 |
| | FOUNDATION CONDITIONING GEOTEXTILE | | | | |
| 0006 | 0366000000-E | 128.000 | LF | \$135.0000 | \$17,280.00 |
| | 15" RC PIPE CULVERTS, CLASS III | | | | |
| 0007 | 0372000000-E | 32.000 | LF | \$169.0000 | \$5,408.00 |
| | 18" RC PIPE CULVERTS, CLASS III | | | | |
| 0008 | 0453000000-E | 18.000 | EA | \$1,800.0000 | \$32,400.00 |
| | *** PIPE END SECTION (15") | | | | |
| 0009 | 0453000000-E | 4.000 | EA | \$1,850.0000 | \$7,400.00 |
| | *** PIPE END SECTION (18") | | | | |
| 0010 | 0986000000-E | 642.000 | LF | \$24.0000 | \$15,408.00 |
| | GENERIC PIPE ITEM 12" CAA PIPE CULVERTS, 0.060" THICK | | | | |
| 0011 | 0986000000-E | 566.000 | LF | \$14.0000 | \$7,924.00 |
| | GENERIC PIPE ITEM 12" HDPE PIPE CULVERTS | | | | |
| 0012 | 0986000000-E | 66.000 | LF | \$32.0000 | \$2,112.00 |
| | GENERIC PIPE ITEM 15" CAA PIPE CULVERTS, 0.060" THICK | | | | |
| 0013 | 0986000000-E | 60.000 | LF | \$16.0000 | \$960.00 |
| | GENERIC PIPE ITEM 15" HDPE PIPE CULVERTS | | | | |
| 0014 | 0992000000-E | 49.000 | EA | \$217.0000 | \$10,633.00 |
| | GENERIC PIPE ITEM 12" CAA PIPE ELBOWS, 0.060" THICK | | | | |
| 0015 | 0992000000-E | 88.000 | EA | \$88.0000 | \$7,744.00 |
| | GENERIC PIPE ITEM 12" HDPE PIPE ELBOWS | | | | |
| 0016 | 0992000000-E | 11.000 | EA | \$285.0000 | \$3,135.00 |
| | GENERIC PIPE ITEM 15" CAA PIPE ELBOWS, 0.060" THICK | | | | |
| 0017 | 0992000000-E | 10.000 | EA | \$125.0000 | \$1,250.00 |
| | GENERIC PIPE ITEM 15" HDPE PIPE ELBOWS | | | | |
| 0018 | 0992000000-E | 19.000 | EA | \$600.0000 | \$11,400.00 |
| | GENERIC PIPE ITEM REPAIR FLARED END SECTION | | | | |
| 0019 | 1121000000-E | 2007.000 | TON | \$52.0000 | \$104,364.00 |
| | AGGREGATE BASE COURSE | | | | |
| 0020 | 1245000000-E | 43.430 | SMI | \$1,442.8300 | \$62,662.11 |
| | SHOULDER RECONSTRUCTION | | | | |
| 0021 | 1260000000-E | 10696.000 | TON | \$23.0000 | \$246,008.00 |
| | AGGREGATE SHOULDER BORROW | | | | |
| 0022 | 1297000000-E | 101824.000 | SY | \$2.1500 | \$218,921.60 |
| | MILLING ASPHALT PAVEMENT, ***"DEPTH (1-1/2") | | | | |
| 0023 | 1308000000-E | 1392046.000 | SY | \$1.3000 | \$1,809,659.80 |
| | MILLING ASPHALT PAVEMENT, ***"TO *****" (1-1/2" TO 2-1/2") | | | | |

| | | | | | |
|------|--|----------------|--|--------------|----------------|
| 0024 | 1519000000-E | 2101.000 TON | | \$56.0000 | \$117,656.00 |
| | ASPHALT CONC SURFACE COURSE, TYPE S9.5B | | | | |
| 0025 | 1524200000-E | 135421.000 TON | | \$49.0000 | \$6,635,629.00 |
| | ASPHALT CONC SURFACE COURSE, TYPE S9.5D | | | | |
| 0026 | 1575000000-E | 141.000 TON | | \$470.0000 | \$66,270.00 |
| | ASPHALT BINDER FOR PLANT MIX | | | | |
| 0027 | 1577000000-E | 11189.000 TON | | \$550.0000 | \$6,153,950.00 |
| | POLYMER MODIFIED ASPHALT BIN- DER FOR PLANT MIX | | | | |
| 0028 | 1662000000-E | 56912.000 TON | | \$63.0000 | \$3,585,456.00 |
| | OPEN-GRADED ASPHALT FRICTION COURSE, TYPE FC-1 MODIFIED | | | | |
| 0029 | 1840000000-E | 623640.000 LF | | \$0.1600 | \$99,782.40 |
| | MILLED RUMBLE STRIPS (ASPHALT CONCRETE) | | | | |
| 0030 | 1880000000-E | 620.000 TON | | \$180.0000 | \$111,600.00 |
| | GENERIC PAVING ITEM PATCHING EXISTING PAVEMENT (FULL DEPTH) | | | | |
| 0031 | 2253000000-E | 9.240 CY | | \$417.0000 | \$3,853.08 |
| | PIPE COLLARS | | | | |
| 0032 | 2286000000-N | 136.000 EA | | \$1,715.0000 | \$233,240.00 |
| | MASONRY DRAINAGE STRUCTURES | | | | |
| 0033 | 2364200000-N | 136.000 EA | | \$445.0000 | \$60,520.00 |
| | FRAME WITH TWO GRATES, STD 840.20 | | | | |
| 0034 | 2365000000-N | 3.000 EA | | \$445.0000 | \$1,335.00 |
| | FRAME WITH TWO GRATES, STD 840.22 | | | | |
| 0035 | 2473000000-N | 25.000 EA | | \$1,245.0000 | \$31,125.00 |
| | GENERIC DRAINAGE ITEM DROP INLET REPAIR | | | | |
| 0036 | 2473000000-N | 88.000 EA | | \$1,825.0000 | \$160,600.00 |
| | GENERIC DRAINAGE ITEM REMOVE & REPLACE CONCRETE APRON FOR DROP INLET | | | | |
| 0037 | 2549000000-E | 700.000 LF | | \$36.0000 | \$25,200.00 |
| | 2'-6" CONCRETE CURB & GUTTER | | | | |
| 0038 | 2556000000-E | 23300.000 LF | | \$33.0000 | \$768,900.00 |
| | SHOULDER BERM GUTTER | | | | |
| 0039 | 2752000000-E | 300.000 LF | | \$42.0000 | \$12,600.00 |
| | GENERIC PAVING ITEM REMOVE & REPLACE 2'-6" CURB & GUTTER | | | | |
| 0040 | 3030000000-E | 775.000 LF | | \$21.0000 | \$16,275.00 |
| | STEEL BEAM GUARDRAIL | | | | |
| 0041 | 3150000000-N | 131.000 EA | | \$45.0000 | \$5,895.00 |
| | ADDITIONAL GUARDRAIL POSTS | | | | |
| 0042 | 3210000000-N | 32.000 EA | | \$550.0000 | \$17,600.00 |
| | GUARDRAIL END UNITS, TYPE CAT-1 | | | | |
| 0043 | 3287000000-N | 46.000 EA | | \$3,600.0000 | \$165,600.00 |
| | GUARDRAIL END UNITS, TYPE TL-3 | | | | |
| 0044 | 3319000000-N | 2.000 EA | | \$2,100.0000 | \$4,200.00 |
| | GUARDRAIL ANCHOR UNITS, TYPE B-83 | | | | |
| 0045 | 3420000000-E | 40681.000 LF | | \$15.8000 | \$642,759.80 |
| | GENERIC GUARDRAIL ITEM REMOVE & REPLACE EXISTING GUARDRAIL | | | | |
| 0046 | 3435000000-N | 11.000 EA | | \$450.0000 | \$4,950.00 |
| | GENERIC GUARDRAIL ITEM GUARDRAIL PRE-FAB ANCHOR POSTS | | | | |
| 0047 | 3435000000-N | 22.000 EA | | \$50.0000 | \$1,100.00 |
| | GENERIC GUARDRAIL ITEM REMOVE & RESET ANCHOR UNIT, TYPE B-83 | | | | |
| 0048 | 3435000000-N | 30.000 EA | | \$50.0000 | \$1,500.00 |

| GENERIC GUARDRAIL ITEM REMOVE & RESET END UNIT, TYPE CAT-1 | | | | | |
|--|--------------|------------|-----|----------------|--------------|
| 0049 | 3435000000-N | 47.000 | EA | \$100.0000 | \$4,700.00 |
| GENERIC GUARDRAIL ITEM REMOVE & RESET END UNIT, TYPE TL-3 | | | | | |
| 0050 | 3649000000-E | 20.000 | TON | \$56.0000 | \$1,120.00 |
| RIP RAP, CLASS B | | | | | |
| 0051 | 3656000000-E | 80.000 | SY | \$6.0000 | \$480.00 |
| GEOTEXTILE FOR DRAINAGE | | | | | |
| 0052 | 4400000000-E | 2080.000 | SF | \$7.7500 | \$16,120.00 |
| WORK ZONE SIGNS (STATIONARY) | | | | | |
| 0053 | 4405000000-E | 78.000 | SF | \$5.7500 | \$448.50 |
| WORK ZONE SIGNS (PORTABLE) | | | | | |
| 0054 | 4413000000-E | 27.000 | SF | \$100.0000 | \$2,700.00 |
| WORK ZONE ADVANCE/GENERAL WARNING SIGNING | | | | | |
| 0055 | 4420000000-N | 6.000 | EA | \$8,600.0000 | \$51,600.00 |
| PORTABLE CHANGEABLE MESSAGE SIGN | | | | | |
| 0056 | 4423000000-N | 6.000 | EA | \$4,100.0000 | \$24,600.00 |
| WORK ZONE DIGITAL SPEED LIMIT SIGNS | | | | | |
| 0057 | 4434000000-N | 36.000 | EA | \$120.0000 | \$4,320.00 |
| SEQUENTIAL FLASHING WARNING LIGHTS | | | | | |
| 0058 | 4457000000-N | 1.000 | LS | \$376,350.0000 | \$376,350.00 |
| TEMPORARY TRAFFIC CONTROL | | | | | |
| 0059 | 4465000000-N | 4.000 | EA | \$9,250.0000 | \$37,000.00 |
| TEMPORARY CRASH CUSHIONS | | | | | |
| 0060 | 4470000000-N | 118.000 | EA | \$2,500.0000 | \$295,000.00 |
| REMOVE & RESET TEMPORARY CRASH CUSHION | | | | | |
| 0061 | 4480000000-N | 2.000 | EA | \$16,000.0000 | \$32,000.00 |
| TMA | | | | | |
| 0062 | 4485000000-E | 2200.000 | LF | \$32.0000 | \$70,400.00 |
| PORTABLE CONCRETE BARRIER | | | | | |
| 0063 | 4500000000-E | 27860.000 | LF | \$5.9000 | \$164,374.00 |
| REMOVE & RESET PORTABLE CONC- RETE BARRIER | | | | | |
| 0064 | 4510000000-N | 590.000 | HR | \$50.0000 | \$29,500.00 |
| LAW ENFORCEMENT | | | | | |
| 0065 | 4600000000-N | 570.000 | EA | \$1,700.0000 | \$969,000.00 |
| GENERIC TRAFFIC CONTROL ITEM LANE CLOSURE | | | | | |
| 0066 | 4600000000-N | 75.000 | EA | \$2,230.0000 | \$167,250.00 |
| GENERIC TRAFFIC CONTROL ITEM RAMP/LOOP CLOSURE | | | | | |
| 0067 | 4685000000-E | 8150.000 | LF | \$1.0000 | \$8,150.00 |
| THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS) | | | | | |
| 0068 | 4695000000-E | 2933.000 | LF | \$1.2000 | \$3,519.60 |
| THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS) | | | | | |
| 0069 | 4720000000-E | 18.000 | EA | \$130.0000 | \$2,340.00 |
| THERMOPLASTIC PAVEMENT MARKING CHARACTER (90 MILS) | | | | | |
| 0070 | 4725000000-E | 97.000 | EA | \$120.0000 | \$11,640.00 |
| THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS) | | | | | |
| 0071 | 4726110000-E | 6.000 | EA | \$175.0000 | \$1,050.00 |
| HEATED-IN-PLACE THERMOPLASTIC PAVEMENT MARKING SYMBOL | | | | | |
| 0072 | 4815000000-E | 704187.000 | LF | \$0.4000 | \$281,674.80 |
| PAINT PAVEMENT MARKING LINES (6") | | | | | |

| | | | | | |
|------|---|-----------|-----|--------------|--------------|
| 0073 | 4825000000-E | 7509.000 | LF | \$0.6500 | \$4,880.85 |
| | PAINT PAVEMENT MARKING LINES (12") | | | | |
| 0074 | 4845000000-N | 36.000 | EA | \$40.0000 | \$1,440.00 |
| | PAINT PAVEMENT MARKING SYMBOL | | | | |
| 0075 | 4847040000-E | 5706.000 | LF | \$3.5000 | \$19,971.00 |
| | POLYUREA PAVEMENT MARKING LINES (6", 30 MILS) | | | | |
| 0078 | 4855000000-E | 4492.000 | LF | \$1.0000 | \$4,492.00 |
| | REMOVAL OF PAVEMENT MARKING LINES (6") | | | | |
| 0079 | 4875000000-N | 1.000 | EA | \$100.0000 | \$100.00 |
| | REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS | | | | |
| 0080 | 4891000000-E | 512.000 | LF | \$10.0000 | \$5,120.00 |
| | GENERIC PAVEMENT MARKING ITEM THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS) | | | | |
| 0081 | 4895000000-N | 89.000 | EA | \$30.0000 | \$2,670.00 |
| | GENERIC PAVEMENT MARKING ITEM MARKERS FOR DRAINAGE STRUCTURE & CONCRETE PAD | | | | |
| 0082 | 4900000000-N | 41.000 | EA | \$10.0000 | \$410.00 |
| | PERMANENT RAISED PAVEMENT MARKERS | | | | |
| 0083 | 4905000000-N | 4976.000 | EA | \$26.2500 | \$130,620.00 |
| | SNOWPLOWABLE PAVEMENT MARKERS | | | | |
| 0084 | 6000000000-E | 30640.000 | LF | \$3.2000 | \$98,048.00 |
| | TEMPORARY SILT FENCE | | | | |
| 0085 | 6009000000-E | 10.000 | TON | \$175.0000 | \$1,750.00 |
| | STONE FOR EROSION CONTROL, CLASS B | | | | |
| 0086 | 6012000000-E | 10.000 | TON | \$170.0000 | \$1,700.00 |
| | SEDIMENT CONTROL STONE | | | | |
| 0087 | 6015000000-E | 0.400 | ACR | \$2,000.0000 | \$800.00 |
| | TEMPORARY MULCHING | | | | |
| 0088 | 6018000000-E | 20.000 | LB | \$20.0000 | \$400.00 |
| | SEED FOR TEMPORARY SEEDING | | | | |
| 0089 | 6021000000-E | 0.100 | TON | \$4,000.0000 | \$400.00 |
| | FERTILIZER FOR TEMPORARY SEED-ING | | | | |
| 0090 | 6029000000-E | 900.000 | LF | \$3.2000 | \$2,880.00 |
| | SAFETY FENCE | | | | |
| 0091 | 6036000000-E | 69130.000 | SY | \$1.4000 | \$96,782.00 |
| | MATTING FOR EROSION CONTROL | | | | |
| 0092 | 6042000000-E | 20.000 | LF | \$37.0000 | \$740.00 |
| | 1/4" HARDWARE CLOTH | | | | |
| 0093 | 6071010000-E | 4330.000 | LF | \$5.0000 | \$21,650.00 |
| | WATTLE | | | | |
| 0094 | 6084000000-E | 9.080 | ACR | \$2,000.0000 | \$18,160.00 |
| | SEEDING & MULCHING | | | | |
| 0095 | 6090000000-E | 20.000 | LB | \$20.0000 | \$400.00 |
| | SEED FOR REPAIR SEEDING | | | | |
| 0096 | 6093000000-E | 0.100 | TON | \$4,000.0000 | \$400.00 |
| | FERTILIZER FOR REPAIR SEEDING | | | | |
| 0097 | 6117000000-N | 136.000 | EA | \$100.0000 | \$13,600.00 |
| | RESPONSE FOR EROSION CONTROL | | | | |
| 0098 | 6117500000-N | 12.000 | EA | \$4,700.0000 | \$56,400.00 |
| | CONCRETE WASHOUT STRUCTURE | | | | |
| 0099 | 6975000000-N | 1.000 | LS | \$5,535.0000 | \$5,535.00 |

| GENERIC REST AREA ITEM REMOVAL OF LANDSCAPE TIMBERS &REBAR | | | | |
|--|--|---------------|--------------|-----------------|
| 0100 | 7444000000-E | 640.000 LF | \$6.2500 | \$4,000.00 |
| | INDUCTIVE LOOP SAWCUT | | | |
| 0113 | 4688000000-E | 752652.000 LF | \$0.7000 | \$526,856.40 |
| | THERMOPLASTIC PAVEMENT MARKING LINES (6", 90 MILS) | | | |
| 0114 | 4700000000-E | 7509.000 LF | \$1.8000 | \$13,516.20 |
| | THERMOPLASTIC PAVEMENT MARKING LINES (12", 90 MILS) | | | |
| Section 0001 Total | | | | \$25,753,653.81 |
| Section 0004 STRUCTURE ITEMS | | | | |
| 0101 | 8161000000-E | 92851.300 SF | \$1.2000 | \$111,421.56 |
| | GROOVING BRIDGE FLOORS | | | |
| 0102 | 8559000000-E | 1.400 SY | \$600.0000 | \$840.00 |
| | CLASS II, SURFACE PREPARATION | | | |
| 0103 | 8660000000-E | 38.300 CF | \$1,835.0000 | \$70,280.50 |
| | CONCRETE REPAIRS | | | |
| 0104 | 8664000000-E | 88.500 CF | \$1,450.0000 | \$128,325.00 |
| | SHOTCRETE REPAIRS | | | |
| 0105 | 8678000000-E | 1084.000 LF | \$115.0000 | \$124,660.00 |
| | EPOXY RESIN INJECTION | | | |
| 0106 | 8867000000-E | 2323.000 LF | \$35.0000 | \$81,305.00 |
| | GENERIC STRUCTURE ITEM POURABLE SILICONE JOINT SEALANT | | | |
| 0107 | 8874000000-E | 4.000 TON | \$1,300.0000 | \$5,200.00 |
| | GENERIC STRUCTURE ITEM #57 STONE | | | |
| 0108 | 8881000000-E | 326.000 CY | \$3,430.0000 | \$1,118,180.00 |
| | GENERIC STRUCTURE ITEM POLYESTER POLYMER CONCRETE MATERIALS | | | |
| 0109 | 8893000000-E | 196.000 SY | \$220.0000 | \$43,120.00 |
| | GENERIC STRUCTURE ITEM CONCRETE DECK REPAIR FOR POLY- ESTER POLYMER CONCRETE OVERLAY | | | |
| 0110 | 8893000000-E | 11740.400 SY | \$12.0000 | \$140,884.80 |
| | GENERIC STRUCTURE ITEM PLACING & FINISHING POLYESTER POLYMER CONCRETE OVERLAY | | | |
| 0111 | 8893000000-E | 11740.400 SY | \$17.0000 | \$199,586.80 |
| | GENERIC STRUCTURE ITEM SCARIFYING BRIDGE DECK | | | |
| 0112 | 8893000000-E | 11740.400 SY | \$4.0000 | \$46,961.60 |
| | GENERIC STRUCTURE ITEM SHOTBLASTING BRIDGE DECK | | | |
| Section 0004 Total | | | | \$2,070,765.26 |
| Item Total | | | | \$27,824,419.07 |

ELECTRONIC BID SUBMISSION

By submitting this bid electronically, I hereby acknowledge that all requirements included in the hard copy proposal, addendum, amendments, plans, standard specifications, supplemental specifications and special provisions are part of the bid and contract. Further, I acknowledge that I have read, understand, accept, acknowledge and agree to comply with all statements in this electronic bid.

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NON-COLLUSION, DEBARMENT AND GIFT BAN CERTIFICATION

The prequalified bidder declares (or certifies, verifies, or states) under penalty of perjury under the laws of the United States that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the prequalified bidder has not been convicted of violating N.C.G.S. §133-24 within the last three years, and that the prequalified bidder intends to do the work with his own bonafide employees or subcontractors and will not bid for the benefit of another contractor.

By submitting this non-collusion, debarment and gift ban certification, the Contractor is attesting his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. §133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

DEBARMENT CERTIFICATION OF PREQUALIFIED BIDDER

Conditions for certification:

1. The prequalified bidder shall provide immediate written notice to the Department if at any time the bidder learns that his certification was erroneous when he submitted his debarment certification or explanation that is file with the Department, or has become erroneous because of changed circumstances.
2. The terms covered transaction, debarred, suspended, ineligible, lower tier

covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded, as used in this provision, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. A copy of the Federal Rules requiring this certification and detailing the definitions and coverages may be obtained from the Contract Officer of the Department.

3. The prequalified bidder agrees by submitting this form, that he will not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in NCDOT contracts, unless authorized by the Department.

4. For Federal Aid projects, the prequalified bidder further agrees that by submitting this form he will include the Federal- Aid Provision titled Required Contract Provisions Federal-Aid Construction Contract (Form FHWA PR 1273) provided by the Department, without subsequent modification, in all lower tier covered transactions.

5. The prequalified bidder may rely upon a certification of a participant in a lower tier covered transaction that he is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless he knows that the certification is erroneous. The bidder may decide the method and frequency by which he will determine the eligibility of his subcontractors.

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

7. Except as authorized in paragraph 6 herein, the Department may terminate any contract if the bidder knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available by the Federal Government.

DEBARMENT CERTIFICATION

The prequalified bidder certifies to the best of his knowledge and belief, that he and his principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or

commission of embezzlement, theft, forgery, bribery, falsification or destruction of records; making false statements; or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph b. of this certification; and

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

e. Will submit a revised Debarment Certification immediately if his status changes and will show in his bid proposal an explanation for the change in status.

If the prequalified bidder cannot certify that he is not debarred, he shall provide an explanation with this submittal. An explanation will not necessarily result in denial of participation in a contract.

Failure to submit a non-collusion and debarment certification will result in the prequalified bidder's bid being considered non-responsive.

EXPLANATION:

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Award Limits on Multiple Projects

By answering YES to this statement, the bidder acknowledges that they are using the award limits on multiple projects? **Yes** **No**

A bidder who desires to bid on more than one project on which bids are to be opened on the same date, and who also desires to avoid receiving an award of more projects than he is equipped to handle, may bid on any number of projects but may limit the total amount of work awarded to him on selected projects by completing the AWARD LIMITS ON MULTIPLE PROJECTS.

The Award Limits on Multiple Projects must be filled in on each project bid for which the Bidder desires protection.

It is the desire of the Bidder to be awarded contracts, the value of which will not exceed a total of for those

projects indicated herein, for which bids will be opened on (MM/DD/YY)

The Award Limits shall apply to the following projects:

Contract Number
County

Contract Number
County

Contract Number
County

Contract Number
County

Contract Number
County

Contract Number
County

It is agreed that if I am (we are) the low Bidder(s) on indicated projects, the total value of which is more than the above stipulated award limits, the Board of Transportation will award me (us) projects from among those indicated

that have a total value not to exceed the award limit and will result in the lowest total bids to the Department of Transportation.

DBE List Summary

Project: STBGIM-0040 (075)

Bidder ID: 3516

Bid Total: 27,824,419.07

Business Name: Barnhill Contracting Company

Goal: 9.00% (2,504,197.72)

Total Entered: 7.54% (2,098,218.36)

| ID | Name | Is Supplier? | Item Count | Amount | Is Complete? |
|-------|------------------------------------|--------------|------------|------------|--------------|
| 7621 | DOSS TRUCKING INC | No | 4 | 406,648.80 | Yes |
| 15844 | ATLANTIC COAST TRUCKING INC | No | 3 | 453,269.76 | Yes |
| 4898 | BULLINGTON CONSTRUCTION INC | No | 11 | 877,579.80 | Yes |
| 4142 | JERRY T BUNN TRUCKING LLC | No | 2 | 240,480.00 | Yes |
| 4720 | MILITARY & FEDERAL CONSTRUCTION CO | No | 2 | 120,240.00 | Yes |

Name: DOSS TRUCKING INC ID: 7621

Address: 479 FOY LOCKAMY RD , JACKSONVILLE, NC 28540

Used As: SubContractor DBE Items Total:\$406,648.80

Items for DOSS TRUCKING INC

| Line Number | Item Number | Quantity | Unit | Unit Price | Extension Price |
|--------------------|--|----------|------|------------|-----------------|
| Section 0001 | | | | | |
| ROADWAY ITEMS | | | | | |
| 0023 | 1308000000-E | 108000 | SY | \$0.5000 | \$54,000.00 |
| | MILLING ASPHALT PAVEMENT, ***"TO *****" (1-1/2" TO 2-1/2") | | | | |
| | Note: Back haul Millings to Plant at \$3.00 tn | | | | |
| 0024 | 1519000000-E | 378 | TON | \$6.0000 | \$2,268.00 |
| | ASPHALT CONC SURFACE COURSE, TYPE S9.5B | | | | |
| | Note: Haul Mix To Map | | | | |
| 0025 | 1524200000-E | 25200 | TON | \$8.6000 | \$216,720.00 |
| | ASPHALT CONC SURFACE COURSE, TYPE S9.5D | | | | |
| | Note: Haul Mix to Map at \$6.00 tn | | | | |
| | Stockpile Plant at \$9.00 tn | | | | |
| 0028 | 1662000000-E | 13104 | TON | \$10.2000 | \$133,660.80 |
| | OPEN-GRADED ASPHALT FRICTION COURSE, TYPE FC-1 MODIFIED | | | | |
| | Note: Haul Mix To Map \$6.00 tn | | | | |
| | Stockpile Plant \$9.00 tn | | | | |
| Section 0001 Total | | | | | \$406,648.80 |
| Item Total | | | | | \$406,648.80 |

Name: ATLANTIC COAST TRUCKING INC ID: 15844

Address: P.O. BOX 88 , HOLLY RIDGE, NC 28445

Used As: SubContractor DBE Items Total:\$453,269.76

Items for ATLANTIC COAST TRUCKING INC

| Line Number | Item Number | Quantity | Unit | Unit Price | Extension Price |
|--|--------------|----------|------|------------|-----------------|
| Section 0001 | | | | | |
| ROADWAY ITEMS | | | | | |
| 0023 | 1308000000-E | 142200 | SY | \$0.5000 | \$71,100.00 |
| MILLING ASPHALT PAVEMENT, ***"TO *****" (1-1/2" TO 2-1/2") | | | | | |
| Note: Back Haul Millings to Plant | | | | | |
| 0025 | 1524200000-E | 42000 | TON | \$6.3100 | \$265,020.00 |
| ASPHALT CONC SURFACE COURSE, TYPE S9.5D | | | | | |
| Note: Haul Mix To Map \$4.75 tn | | | | | |
| Stockpile Plant \$9.00 tn | | | | | |
| 0028 | 1662000000-E | 13104 | TON | \$8.9400 | \$117,149.76 |
| OPEN-GRADED ASPHALT FRICTION COURSE, TYPE FC-1 MODIFIED | | | | | |
| Note: Haul Mix to Map \$4.75 tn | | | | | |
| Stockpile Plant \$9.00 tn | | | | | |
| Section 0001 Total | | | | | \$453,269.76 |
| Item Total | | | | | \$453,269.76 |

Name: BULLINGTON CONSTRUCTION INC ID: 4898

Address: 417 FOXGLOVE LANE , INDIAN TRAIL, NC 28079

Used As: SubContractor DBE Items Total:\$877,579.80

Items for BULLINGTON CONSTRUCTION INC

| Line Number | Item Number | Quantity | Unit | Unit Price | Extension Price |
|--|--------------|-----------|------|---------------|-----------------|
| Section 0001 | | | | | |
| ROADWAY ITEMS | | | | | |
| 0001 | 0000100000-N | 1.000 | LS | \$13,000.0000 | \$13,000.00 |
| MOBILIZATION | | | | | |
| Note: Bond and mobilization | | | | | |
| 0040 | 3030000000-E | 775.000 | LF | \$21.0000 | \$16,275.00 |
| STEEL BEAM GUARDRAIL | | | | | |
| 0041 | 3150000000-N | 131.000 | EA | \$45.0000 | \$5,895.00 |
| ADDITIONAL GUARDRAIL POSTS | | | | | |
| 0042 | 3210000000-N | 32.000 | EA | \$550.0000 | \$17,600.00 |
| GUARDRAIL END UNITS, TYPE CAT-1 | | | | | |
| 0043 | 3287000000-N | 46.000 | EA | \$3,600.0000 | \$165,600.00 |
| GUARDRAIL END UNITS, TYPE TL-3 | | | | | |
| 0044 | 3319000000-N | 2.000 | EA | \$2,100.0000 | \$4,200.00 |
| GUARDRAIL ANCHOR UNITS, TYPE B-83 | | | | | |
| 0045 | 3420000000-E | 40681.000 | LF | \$15.8000 | \$642,759.80 |
| GENERIC GUARDRAIL ITEM REMOVE & REPLACE EXISTING GUARDRAIL | | | | | |
| 0046 | 3435000000-N | 11.000 | EA | \$450.0000 | \$4,950.00 |
| GENERIC GUARDRAIL ITEM GUARDRAIL PRE-FAB ANCHOR POSTS | | | | | |
| 0047 | 3435000000-N | 22.000 | EA | \$50.0000 | \$1,100.00 |
| GENERIC GUARDRAIL ITEM REMOVE & RESET ANCHOR UNIT, TYPE B-83 | | | | | |
| 0048 | 3435000000-N | 30.000 | EA | \$50.0000 | \$1,500.00 |
| GENERIC GUARDRAIL ITEM REMOVE & RESET END UNIT, TYPE CAT-1 | | | | | |
| 0049 | 3435000000-N | 47.000 | EA | \$100.0000 | \$4,700.00 |
| GENERIC GUARDRAIL ITEM REMOVE & RESET END UNIT, TYPE TL-3 | | | | | |
| Section 0001 Total | | | | | \$877,579.80 |
| Item Total | | | | | \$877,579.80 |

Name: JERRY T BUNN TRUCKING LLC ID: 4142

Address: 6839 FLAT ROCK RD. , SIMS, NC 27880

Used As: SubContractor DBE Items Total:\$240,480.00

Items for JERRY T BUNN TRUCKING LLC

| <u>Line Number</u> | <u>Item Number</u> | <u>Quantity</u> | <u>Unit</u> | <u>Unit Price</u> | <u>Extension Price</u> |
|-----------------------|---|-----------------|-------------|-------------------|------------------------|
| Section 0001 | | | | | |
| ROADWAY ITEMS | | | | | |
| 0025 | 1524200000-E | 14520 | TON | \$9.0000 | \$130,680.00 |
| | ASPHALT CONC SURFACE COURSE, TYPE S9.5D | | | | |
| Note: Stockpile Plant | | | | | |
| 0028 | 1662000000-E | 12200 | TON | \$9.0000 | \$109,800.00 |
| | OPEN-GRADED ASPHALT FRICTION COURSE, TYPE FC-1 MODIFIED | | | | |
| Note: Stockpile Plant | | | | | |
| Section 0001 Total | | | | | \$240,480.00 |
| Item Total | | | | | \$240,480.00 |

Name: MILITARY & FEDERAL CONSTRUCTION CO ID: 4720

Address: 317-C CENTER STREET , JACKSONVILLE, NC 28546

Used As: SubContractor DBE Items Total:\$120,240.00

Items for MILITARY & FEDERAL CONSTRUCTION CO

| <u>Line Number</u> | <u>Item Number</u> | <u>Quantity</u> | <u>Unit</u> | <u>Unit Price</u> | <u>Extension Price</u> |
|-----------------------|---|-----------------|-------------|-------------------|------------------------|
| Section 0001 | | | | | |
| ROADWAY ITEMS | | | | | |
| 0025 | 1524200000-E | 7260 | TON | \$9.0000 | \$65,340.00 |
| | ASPHALT CONC SURFACE COURSE, TYPE S9.5D | | | | |
| Note: Stockpile Plant | | | | | |
| 0028 | 1662000000-E | 6100 | TON | \$9.0000 | \$54,900.00 |
| | OPEN-GRADED ASPHALT FRICTION COURSE, TYPE FC-1 MODIFIED | | | | |
| Note: Stockpile Plant | | | | | |
| Section 0001 Total | | | | | \$120,240.00 |
| Item Total | | | | | \$120,240.00 |

THIS PROPOSAL CONTAINS THE FOLLOWING ERRORS/WARNINGS (IF ANY)
DBE List Goal not met.

This Bid contains 1 amendment files

000001 08/16/2019 PAVEMENT MARKING UPDATES

Electronic Bid Submission

By submitting this bid electronically, I hereby acknowledge that all requirements included in the hard copy proposal, addendum, amendments, plans, standard specifications, supplemental specifications and special provisions are part of the bid and contract. Further, I acknowledge that I have read, understand, accept, acknowledge and agree to comply with all statements in this electronic bid.

I hereby certify that I have the authority to submit this bid.

Signature _____

Agency _____

Date _____

Signature _____

Agency _____

Date _____

Signature _____

Agency _____

Date _____

| Line # | ItemNumber | Sec # | Description | Quantity Unit | Unit Bid Price | Amount Bid |
|----------------------|--------------|-------|--|----------------|----------------|------------|
| ROADWAY ITEMS | | | | | | |
| 0001 | 0000100000-N | 800 | MOBILIZATION | Lump Sum LS | 665,000.00 | 665,000.00 |
| 0002 | 0106000000-E | 230 | BORROW EXCAVATION | 87.28 CY | 22.15 | 1,933.25 |
| 0003 | 0156000000-E | 250 | REMOVAL OF EXISTING ASPHALT PAVEMENT | 300 SY | 9.50 | 2,850.00 |
| 0004 | 0318000000-E | 300 | FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES | 49.5 TON | 40.00 | 1,980.00 |
| 0005 | 0320000000-E | 300 | FOUNDATION CONDITIONING GEOTEXTILE | 205.97 SY | 2.75 | 566.42 |
| 0006 | 0366000000-E | 310 | 15" RC PIPE CULVERTS, CLASS III | 128 LF | 135.00 | 17,280.00 |
| 0007 | 0372000000-E | 310 | 18" RC PIPE CULVERTS, CLASS III | 32 LF | 169.00 | 5,408.00 |
| 0008 | 0453000000-E | 310 | *** PIPE END SECTION (15") | 18 EA | 1,800.00 | 32,400.00 |
| 0009 | 0453000000-E | 310 | *** PIPE END SECTION (18") | 4 EA | 1,850.00 | 7,400.00 |
| 0010 | 0986000000-E | SP | GENERIC PIPE ITEM 12" CAA PIPE CULVERTS, 0.060" THICK | 642 LF | 24.00 | 15,408.00 |
| 0011 | 0986000000-E | SP | GENERIC PIPE ITEM 12" HDPE PIPE CULVERTS | 566 LF | 14.00 | 7,924.00 |
| 0012 | 0986000000-E | SP | GENERIC PIPE ITEM 15" CAA PIPE CULVERTS, 0.060" THICK | 66 LF | 32.00 | 2,112.00 |
| 0013 | 0986000000-E | SP | GENERIC PIPE ITEM 15" HDPE PIPE CULVERTS | 60 LF | 16.00 | 960.00 |
| 0014 | 0992000000-E | SP | GENERIC PIPE ITEM 12" CAA PIPE ELBOWS, 0.060" THICK | 49 EA | 217.00 | 10,633.00 |
| 0015 | 0992000000-E | SP | GENERIC PIPE ITEM 12" HDPE PIPE ELBOWS | 88 EA | 88.00 | 7,744.00 |
| 0016 | 0992000000-E | SP | GENERIC PIPE ITEM 15" CAA PIPE ELBOWS, 0.060" THICK | 11 EA | 285.00 | 3,135.00 |

| Line # | ItemNumber | Sec # | Description | Quantity Unit | Unit Bid Price | Amount Bid |
|--------|--------------|-------|---|-----------------|----------------|--------------|
| 0017 | 0992000000-E | SP | GENERIC PIPE ITEM 15" HDPE PIPE ELBOWS | 10 EA | 125.00 | 1,250.00 |
| 0018 | 0992000000-E | SP | GENERIC PIPE ITEM REPAIR FLARED END SECTION | 19 EA | 600.00 | 11,400.00 |
| 0019 | 1121000000-E | 520 | AGGREGATE BASE COURSE | 2,007 TON | 52.00 | 104,364.00 |
| 0020 | 1245000000-E | SP | SHOULDER RECONSTRUCTION | 43.43 SMI | 1,442.83 | 62,662.11 |
| 0021 | 1260000000-E | SP | AGGREGATE SHOULDER BORROW | 10,696 TON | 23.00 | 246,008.00 |
| 0022 | 1297000000-E | 607 | MILLING ASPHALT PAVEMENT, **** DEPTH (1-1/2") | 101,824 SY | 2.15 | 218,921.60 |
| 0023 | 1308000000-E | 607 | MILLING ASPHALT PAVEMENT, **** TO ***** (1-1/2" TO 2-1/2") | 1,392,046 SY | 1.30 | 1,809,659.80 |
| 0024 | 1519000000-E | 610 | ASPHALT CONC SURFACE COURSE, TYPE S9.5B | 2,101 TON | 56.00 | 117,656.00 |
| 0025 | 1524200000-E | 610 | ASPHALT CONC SURFACE COURSE, TYPE S9.5D | 135,421 TON | 49.00 | 6,635,629.00 |
| 0026 | 1575000000-E | 620 | ASPHALT BINDER FOR PLANT MIX | 141 TON | 470.00 | 66,270.00 |
| 0027 | 1577000000-E | 620 | POLYMER MODIFIED ASPHALT BIN- DER FOR PLANT MIX | 11,189 TON | 550.00 | 6,153,950.00 |
| 0028 | 1662000000-E | 650 | OPEN-GRADED ASPHALT FRICTION COURSE, TYPE FC-1 MODIFIED | 56,912 TON | 63.00 | 3,585,456.00 |
| 0029 | 1840000000-E | 665 | MILLED RUMBLE STRIPS (ASPHALT CONCRETE) | 623,640 LF | 0.16 | 99,782.40 |
| 0030 | 1880000000-E | SP | GENERIC PAVING ITEM PATCHING EXISTING PAVEMENT (FULL DEPTH) | 620 TON | 180.00 | 111,600.00 |
| 0031 | 2253000000-E | 840 | PIPE COLLARS | 9.24 CY | 417.00 | 3,853.08 |
| 0032 | 2286000000-N | 840 | MASONRY DRAINAGE STRUCTURES | 136 EA | 1,715.00 | 233,240.00 |
| 0033 | 2364200000-N | 840 | FRAME WITH TWO GRATES, STD 840.20 | 136 EA | 445.00 | 60,520.00 |

| Line # | ItemNumber | Sec # | Description | Quantity Unit | Unit Bid Price | Amount Bid |
|--------|--------------|-------|--|---------------|----------------|------------|
| 0034 | 2365000000-N | 840 | FRAME WITH TWO GRATES, STD 840.22 | 3 EA | 445.00 | 1,335.00 |
| 0035 | 2473000000-N | SP | GENERIC DRAINAGE ITEM DROP INLET REPAIR | 25 EA | 1,245.00 | 31,125.00 |
| 0036 | 2473000000-N | SP | GENERIC DRAINAGE ITEM REMOVE & REPLACE CONCRETE APRON FOR DROP INLET | 88 EA | 1,825.00 | 160,600.00 |
| 0037 | 2549000000-E | 846 | 2'-6" CONCRETE CURB & GUTTER | 700 LF | 36.00 | 25,200.00 |
| 0038 | 2556000000-E | 846 | SHOULDER BERM GUTTER | 23,300 LF | 33.00 | 768,900.00 |
| 0039 | 2752000000-E | SP | GENERIC PAVING ITEM REMOVE & REPLACE 2'-6" CURB & GUTTER | 300 LF | 42.00 | 12,600.00 |
| 0040 | 3030000000-E | 862 | STEEL BEAM GUARDRAIL | 775 LF | 21.00 | 16,275.00 |
| 0041 | 3150000000-N | 862 | ADDITIONAL GUARDRAIL POSTS | 131 EA | 45.00 | 5,895.00 |
| 0042 | 3210000000-N | 862 | GUARDRAIL END UNITS, TYPE CAT-1 | 32 EA | 550.00 | 17,600.00 |
| 0043 | 3287000000-N | SP | GUARDRAIL END UNITS, TYPE TL-3 | 46 EA | 3,600.00 | 165,600.00 |
| 0044 | 3319000000-N | SP | GUARDRAIL ANCHOR UNITS, TYPE B-83 | 2 EA | 2,100.00 | 4,200.00 |
| 0045 | 3420000000-E | SP | GENERIC GUARDRAIL ITEM REMOVE & REPLACE EXISTING GUARDRAIL | 40,681 LF | 15.80 | 642,759.80 |
| 0046 | 3435000000-N | SP | GENERIC GUARDRAIL ITEM GUARDRAIL PRE-FAB ANCHOR POSTS | 11 EA | 450.00 | 4,950.00 |
| 0047 | 3435000000-N | SP | GENERIC GUARDRAIL ITEM REMOVE & RESET ANCHOR UNIT, TYPE B-83 | 22 EA | 50.00 | 1,100.00 |
| 0048 | 3435000000-N | SP | GENERIC GUARDRAIL ITEM REMOVE & RESET END UNIT, TYPE CAT-1 | 30 EA | 50.00 | 1,500.00 |
| 0049 | 3435000000-N | SP | GENERIC GUARDRAIL ITEM REMOVE & RESET END UNIT, TYPE TL-3 | 47 EA | 100.00 | 4,700.00 |

| Line # | ItemNumber | Sec # | Description | Quantity Unit | Unit Bid Price | Amount Bid |
|--------|--------------|-------|--|---------------|----------------|------------|
| 0050 | 3649000000-E | 876 | RIP RAP, CLASS B | 20 TON | 56.00 | 1,120.00 |
| 0051 | 3656000000-E | 876 | GEOTEXTILE FOR DRAINAGE | 80 SY | 6.00 | 480.00 |
| 0052 | 4400000000-E | 1110 | WORK ZONE SIGNS (STATIONARY) | 2,080 SF | 7.75 | 16,120.00 |
| 0053 | 4405000000-E | 1110 | WORK ZONE SIGNS (PORTABLE) | 78 SF | 5.75 | 448.50 |
| 0054 | 4413000000-E | SP | WORK ZONE ADVANCE/GENERAL WARNING SIGNING | 27 SF | 100.00 | 2,700.00 |
| 0055 | 4420000000-N | 1120 | PORTABLE CHANGEABLE MESSAGE SIGN | 6 EA | 8,600.00 | 51,600.00 |
| 0056 | 4423000000-N | SP | WORK ZONE DIGITAL SPEED LIMIT SIGNS | 6 EA | 4,100.00 | 24,600.00 |
| 0057 | 4434000000-N | SP | SEQUENTIAL FLASHING WARNING LIGHTS | 36 EA | 120.00 | 4,320.00 |
| 0058 | 4457000000-N | SP | TEMPORARY TRAFFIC CONTROL | Lump Sum LS | 376,350.00 | 376,350.00 |
| 0059 | 4465000000-N | 1160 | TEMPORARY CRASH CUSHIONS | 4 EA | 9,250.00 | 37,000.00 |
| 0060 | 4470000000-N | 1160 | REMOVE & RESET TEMPORARY CRASH CUSHION | 118 EA | 2,500.00 | 295,000.00 |
| 0061 | 4480000000-N | 1165 | TMA | 2 EA | 16,000.00 | 32,000.00 |
| 0062 | 4485000000-E | 1170 | PORTABLE CONCRETE BARRIER | 2,200 LF | 32.00 | 70,400.00 |
| 0063 | 4500000000-E | 1170 | REMOVE & RESET PORTABLE CONCRETE BARRIER | 27,860 LF | 5.90 | 164,374.00 |
| 0064 | 4510000000-N | 1190 | LAW ENFORCEMENT | 590 HR | 50.00 | 29,500.00 |
| 0065 | 4600000000-N | SP | GENERIC TRAFFIC CONTROL ITEM LANE CLOSURE | 570 EA | 1,700.00 | 969,000.00 |
| 0066 | 4600000000-N | SP | GENERIC TRAFFIC CONTROL ITEM RAMP/LOOP CLOSURE | 75 EA | 2,230.00 | 167,250.00 |
| 0067 | 4685000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS) | 8,150 LF | 1.00 | 8,150.00 |

| Line # | ItemNumber | Sec # | Description | Quantity Unit | Unit Bid Price | Amount Bid |
|--------|--------------|-------|---|---------------|----------------|------------|
| 0068 | 4695000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS) | 2,933 LF | 1.20 | 3,519.60 |
| 0069 | 4720000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING CHARACTER (90 MILS) | 18 EA | 130.00 | 2,340.00 |
| 0070 | 4725000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS) | 97 EA | 120.00 | 11,640.00 |
| 0071 | 4726110000-E | 1205 | HEATED-IN-PLACE THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS) | 6 EA | 175.00 | 1,050.00 |
| 0072 | 4815000000-E | 1205 | PAINT PAVEMENT MARKING LINES (6") | 704,187 LF | 0.40 | 281,674.80 |
| 0073 | 4825000000-E | 1205 | PAINT PAVEMENT MARKING LINES (12") | 7,509 LF | 0.65 | 4,880.85 |
| 0074 | 4845000000-N | 1205 | PAINT PAVEMENT MARKING SYMBOL | 36 EA | 40.00 | 1,440.00 |
| 0075 | 4847040000-E | 1205 | POLYUREA PAVEMENT MARKING LINES (6", 30 MILS) | 5,706 LF | 3.50 | 19,971.00 |
| 0078 | 4855000000-E | 1205 | REMOVAL OF PAVEMENT MARKING LINES (6") | 4,492 LF | 1.00 | 4,492.00 |
| 0079 | 4875000000-N | 1205 | REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS | 1 EA | 100.00 | 100.00 |
| 0080 | 4891000000-E | 1205 | GENERIC PAVEMENT MARKING ITEM THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS) | 512 LF | 10.00 | 5,120.00 |
| 0081 | 4895000000-N | SP | GENERIC PAVEMENT MARKING ITEM MARKERS FOR DRAINAGE STRUCTURE & CONCRETE PAD | 89 EA | 30.00 | 2,670.00 |
| 0082 | 4900000000-N | 1251 | PERMANENT RAISED PAVEMENT MARKERS | 41 EA | 10.00 | 410.00 |
| 0083 | 4905000000-N | 1253 | SNOWPLOWABLE PAVEMENT MARKERS | 4,976 EA | 26.25 | 130,620.00 |
| 0084 | 6000000000-E | 1605 | TEMPORARY SILT FENCE | 30,640 LF | 3.20 | 98,048.00 |
| 0085 | 6009000000-E | 1610 | STONE FOR EROSION CONTROL, CLASS B | 10 TON | 175.00 | 1,750.00 |
| 0086 | 6012000000-E | 1610 | SEDIMENT CONTROL STONE | 10 TON | 170.00 | 1,700.00 |

| Line # | ItemNumber | Sec # | Description | Quantity Unit | Unit Bid Price | Amount Bid |
|--------|--------------|-------|---|----------------|----------------|------------|
| 0087 | 6015000000-E | 1615 | TEMPORARY MULCHING | 0.4 ACR | 2,000.00 | 800.00 |
| 0088 | 6018000000-E | 1620 | SEED FOR TEMPORARY SEEDING | 20 LB | 20.00 | 400.00 |
| 0089 | 6021000000-E | 1620 | FERTILIZER FOR TEMPORARY SEED- ING | 0.1 TON | 4,000.00 | 400.00 |
| 0090 | 6029000000-E | SP | SAFETY FENCE | 900 LF | 3.20 | 2,880.00 |
| 0091 | 6036000000-E | 1631 | MATTING FOR EROSION CONTROL | 69,130 SY | 1.40 | 96,782.00 |
| 0092 | 6042000000-E | 1632 | 1/4" HARDWARE CLOTH | 20 LF | 37.00 | 740.00 |
| 0093 | 6071010000-E | SP | WATTLE | 4,330 LF | 5.00 | 21,650.00 |
| 0094 | 6084000000-E | 1660 | SEEDING & MULCHING | 9.08 ACR | 2,000.00 | 18,160.00 |
| 0095 | 6090000000-E | 1661 | SEED FOR REPAIR SEEDING | 20 LB | 20.00 | 400.00 |
| 0096 | 6093000000-E | 1661 | FERTILIZER FOR REPAIR SEEDING | 0.1 TON | 4,000.00 | 400.00 |
| 0097 | 6117000000-N | SP | RESPONSE FOR EROSION CONTROL | 136 EA | 100.00 | 13,600.00 |
| 0098 | 6117500000-N | SP | CONCRETE WASHOUT STRUCTURE | 12 EA | 4,700.00 | 56,400.00 |
| 0099 | 6975000000-N | SP | GENERIC REST AREA ITEM REMOVAL OF LANDSCAPE TIMBERS & REBAR | Lump Sum LS | 5,535.00 | 5,535.00 |
| 0100 | 7444000000-E | 1725 | INDUCTIVE LOOP SAWCUT | 640 LF | 6.25 | 4,000.00 |
| 0113 | 4688000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING LINES (6", 90 MILS) | 752,652 LF | 0.70 | 526,856.40 |
| 0114 | 4700000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING LINES (12", 90 MILS) | 7,509 LF | 1.80 | 13,516.20 |

| Line # | ItemNumber | Sec # | Description | Quantity Unit | Unit Bid Price | Amount Bid |
|---|--------------|-------|--|---------------|----------------|------------------------|
| 0101 | 8161000000-E | 420 | GROOVING BRIDGE FLOORS | 92,851.3 SF | 1.20 | 111,421.56 |
| 0102 | 8559000000-E | SP | CLASS II, SURFACE PREPARATION | 1.4 SY | 600.00 | 840.00 |
| 0103 | 8660000000-E | SP | CONCRETE REPAIRS | 38.3 CF | 1,835.00 | 70,280.50 |
| 0104 | 8664000000-E | SP | SHOTCRETE REPAIRS | 88.5 CF | 1,450.00 | 128,325.00 |
| 0105 | 8678000000-E | SP | EPOXY RESIN INJECTION | 1,084 LF | 115.00 | 124,660.00 |
| 0106 | 8867000000-E | SP | GENERIC STRUCTURE ITEM POURABLE SILICONE JOINT SEALANT | 2,323 LF | 35.00 | 81,305.00 |
| 0107 | 8874000000-E | SP | GENERIC STRUCTURE ITEM #57 STONE | 4 TON | 1,300.00 | 5,200.00 |
| 0108 | 8881000000-E | SP | GENERIC STRUCTURE ITEM POLYESTER POLYMER CONCRETE MATERIALS | 326 CY | 3,430.00 | 1,118,180.00 |
| 0109 | 8893000000-E | SP | GENERIC STRUCTURE ITEM CONCRETE DECK REPAIR FOR POLY- ESTER POLYMER CONCRETE OVERLAY | 196 SY | 220.00 | 43,120.00 |
| 0110 | 8893000000-E | SP | GENERIC STRUCTURE ITEM PLACING & FINISHING POLYESTER POLYMER CONCRETE OVERLAY | 11,740.4 SY | 12.00 | 140,884.80 |
| 0111 | 8893000000-E | SP | GENERIC STRUCTURE ITEM SCARIFYING BRIDGE DECK | 11,740.4 SY | 17.00 | 199,586.80 |
| 0112 | 8893000000-E | SP | GENERIC STRUCTURE ITEM SHOTBLASTING BRIDGE DECK | 11,740.4 SY | 4.00 | 46,961.60 |
| TOTAL AMOUNT OF BID FOR ENTIRE PROJECT | | | | | | \$27,824,419.07 |

C204337

Contract No. _____
County DUPLIN, PENDER

Rev. 1-16-18

**EXECUTION OF CONTRACT
NON-COLLUSION, DEBARMENT AND GIFT BAN CERTIFICATION**

CORPORATION

The Contractor declares (or certifies, verifies, or states) under penalty of perjury under the laws of the United States that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this Contract, that the Contractor has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the Contractor intends to do the work with its own bonafide employees or subcontractors and did not bid for the benefit of another contractor.

By submitting this Execution of Contract, Non-Collusion and Debarment Certification, the Contractor is certifying his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

**SIGNATURE OF CONTRACTOR
BARNHILL CONTRACTING COMPANY**

Full name of Corporation

P.O. BOX 7948, ROCKY MOUNT, N.C. 27804

Address as Prequalified

Attest *Charlie E. Gates*
Secretary/Assistant Secretary
Select appropriate title

By *Carey M. Swann, III*
President/Vice President/Assistant Vice President
Select appropriate title

CHARLIE E. GATES

Print or type Signer's name

CAREY M. SWANN, III

Print or type Signer's name

CORPORATE SEAL



DEBARMENT CERTIFICATION

Conditions for certification:

1. The prequalified bidder shall provide immediate written notice to the Department if at any time the bidder learns that his certification was erroneous when he submitted his debarment certification or explanation filed with the Department, or has become erroneous because of changed circumstances.
2. The terms *covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded*, as used in this provision, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. A copy of the Federal Rules requiring this certification and detailing the definitions and coverages may be obtained from the Contract Officer of the Department.
3. The prequalified bidder agrees by submitting this form, that he will not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in NCDOT contracts, unless authorized by the Department.
4. For Federal Aid projects, the prequalified bidder further agrees that by submitting this form he will include the Federal-Aid Provision titled *Required Contract Provisions Federal-Aid Construction Contract (Form FHWA PR 1273)* provided by the Department, without subsequent modification, in all lower tier covered transactions.
5. The prequalified bidder may rely upon a certification of a participant in a lower tier covered transaction that he is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless he knows that the certification is erroneous. The bidder may decide the method and frequency by which he will determine the eligibility of his subcontractors.
6. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this provision. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
7. Except as authorized in paragraph 6 herein, the Department may terminate any contract if the bidder knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available by the Federal Government.

DEBARMENT CERTIFICATION

The prequalified bidder certifies to the best of his knowledge and belief, that he and his principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records; making false statements; or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph b. of this certification; and
- d. Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- e. Will submit a revised Debarment Certification immediately if his status changes and will show in his bid proposal an explanation for the change in status.

If the prequalified bidder cannot certify that he is not debarred, he shall provide an explanation with this submittal. An explanation will not necessarily result in denial of participation in a contract.

Failure to submit a non-collusion and debarment certification will result in the prequalified bidder's bid being considered non-responsive.

Check here if an explanation is attached to this certification.

Contract No. **C204337**

County (ies): **Duplin, Pender**

ACCEPTED BY THE
DEPARTMENT OF TRANSPORTATION

DocuSigned by:

Ronald E. Davenport, Jr.

F81B6038A47A442...

Contract Officer

9/18/2019

Date

Execution of Contract and Bonds
Approved as to Form:

DocuSigned by:

Elizabeth C. Stone

E7F92784822C49C...

Attorney General

9/18/2019

Date

Signature Sheet (Bid - Acceptance by Department)

CONTRACT PAYMENT BOND

Date of Payment Bond Execution August 28, 2019

Name of Principal Contractor Barnhill Contracting Company

Name of Surety: Travelers Casualty and Surety Company of America

Name of Contracting Body: North Carolina Department of Transportation
1020 Birch Ridge Drive, Raleigh NC 27610

Amount of Bond: \$27,824,419.07

Contract ID No.: C204337

County Name: Duplin, Pender

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL CONTRACTOR (hereafter, PRINCIPAL) and SURETY above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the Contracting Body, numbered as shown above and hereto attached:

NOW THEREFORE, if the principal shall promptly make payment to all persons supplying labor and material in the prosecution of the work provided for in said contract, and any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACT PAYMENT BOND

Affix Seal of Surety Company

Travelers Casualty and Surety Company of America
Print or type Surety Company Name

By Shirley A. Johnson, Attorney-in-fact
Print, stamp or type name of Attorney-in-Fact



Shirley A. Johnson
Signature of Attorney-in-Fact

Ellen Strazis

Signature of Witness

Ellen Strazis

Print or type Signer's name

5417 S. Miami Blvd., Durham NC 27703

Address of Attorney-in-Fact

CONTRACT PAYMENT BOND

CORPORATION

SIGNATURE OF CONTRACTOR (Principal)

Barnhill Contracting Company

Full name of Corporation

P O Box 7948, Rocky Mount, North Carolina 27804

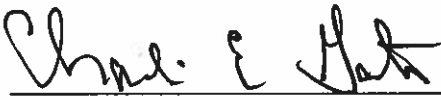
Address as prequalified

By 
Signature of ~~President, Vice President, Assistant Vice President~~
Select appropriate title

Carey M. Swann, III

Print or type Signer's name



Attest 
Signature of ~~Secretary~~, Assistant Secretary
Select appropriate title

Charlie E. Gates

Print or type Signer's name

CONTRACT PERFORMANCE BOND

Date of Performance Bond Execution: August 28, 2019

Name of Principal Contractor: Barnhill Contracting Company

Name of Surety: Travelers Casualty and Surety Company of America

Name of Contracting Body: North Carolina Department of Transportation
1020 Birch Ridge Drive, Raleigh NC 27610

Amount of Bond: \$27,824,419.07

Contract ID No.: C204337

County Name: Duplin, Pender

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL CONTRACTOR (hereafter, PRINCIPAL) and SURETY above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the Contracting Body, numbered as shown above and hereto attached:

NOW THEREFORE, if the principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Contracting Body, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Contract No.: C204337
County: Duplin, Pender

Bond No.: 107098266

Rev 5-17-11

CONTRACT PERFORMANCE BOND

Affix Seal of Surety Company

Travelers Casualty and Surety Company of America
Print or type Surety Company Name

By Shirley A. Johnson, Attorney-in-fact
Print, stamp or type name of Attorney-in-Fact



Shirley A. Johnson
Signature of Attorney-in-Fact

Ellen Strazis
Signature of Witness

Ellen Strazis
Print or type Signer's name

5417 S. Miami Blvd., Durham NC 27703
Address of Attorney-in-Fact

CONTRACT PERFORMANCE BOND

CORPORATION

SIGNATURE OF CONTRACTOR (Principal)

Barnhill Contracting Company

Full name of Corporation

P. O. Box 7948, Rocky Mount, North Carolina 27804

Address as prequalified

By _____



Signature of ~~President~~ Vice President, ~~Assistant Vice President~~
Select appropriate title

Carey M. Swann, III

Print or type Signer's name



Attest



Signature of ~~Secretary~~, Assistant Secretary
Select appropriate title

Charlie E. Gates

Print or type Signer's name



Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **Shirley A. Johnson** of Durham North Carolina, their true and lawful Attorney-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this 3rd day of February, 2017.



State of Connecticut

City of Hartford ss.

By: *Robert L. Raney*
 Robert L. Raney, Senior Vice President

On this the 3rd day of February, 2017, before me personally appeared **Robert L. Raney**, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.

My Commission expires the 30th day of June, 2021



Marie C. Tetreault
 Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

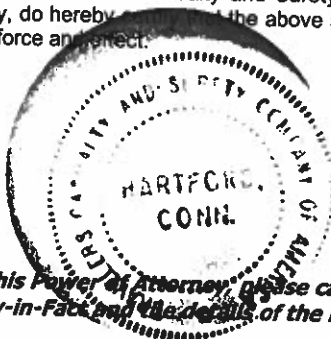
FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes**, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this 28th day of August, 2019



Kevin E. Hughes
 Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880. Please refer to the above-named Attorney-in-Fact and the details of the bond to which the power is attached.