

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

PROPOSAL

**INCLUDES ADDENDUM No. 1 DATED 10-31-16**

DATE AND TIME OF BID OPENING: **NOVEMBER 15, 2016 AT 2:00 PM**

CONTRACT ID C203916

WBS 44797.3.1

FEDERAL-AID NO. NHP-0485(044)

COUNTY MECKLENBURG

T.I.P. NO. I-5960

MILES 3.971

ROUTE NO. I 485

LOCATION I-485 FROM MM 35.8 TO MM 39.7.

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 PROPOSAL**

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

---

**PROPOSAL FOR THE CONSTRUCTION OF  
CONTRACT No. C203916 IN MECKLENBURG COUNTY, NORTH CAROLINA**

Date \_\_\_\_\_ 20 \_\_\_\_\_

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

The Bidder has carefully examined the location of the proposed work to be known as Contract No. C203916; 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 be 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 2012 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. C203916 in Mecklenburg County, for the unit or lump sum prices, as the case may be, bid by the Bidder in his bid and according to the proposal, plans, and specifications prepared by said Department, which proposal, plans, and specifications show the details covering this project, and hereby become a part of this contract.

The published volume entitled *North Carolina Department of Transportation, Raleigh, Standard Specifications for Roads and Structures, January 2012* 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.

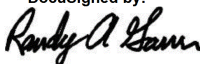
The quantities shown in the itemized proposal for the project are considered to be approximate only and are given as the basis for comparison of bids. The Department of Transportation may increase or decrease the quantity of any item or portion of the work as may be deemed necessary or expedient.

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:  
  
A7079FC32A09478...

10/31/2016

## TABLE OF CONTENTS

### COVER SHEET PROPOSAL SHEET

### PROJECT SPECIAL PROVISIONS

CONTRACT TIME AND LIQUIDATED DAMAGES: .....	G-1
INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES: .....	G-1
INTERMEDIATE CONTRACT TIME NUMBER 2 AND LIQUIDATED DAMAGES: .....	G-2
MAJOR CONTRACT ITEMS: .....	G-3
SPECIALTY ITEMS: .....	G-3
FUEL PRICE ADJUSTMENT: .....	G-3
SCHEDULE OF ESTIMATED COMPLETION PROGRESS: .....	G-4
DISADVANTAGED BUSINESS ENTERPRISE: .....	G-4
CERTIFICATION FOR FEDERAL-AID CONTRACTS: .....	G-17
U.S. DEPARTMENT OF TRANSPORTATION HOTLINE: .....	G-18
CARGO PREFERENCE ACT: .....	G-18
LOCATING EXISTING UNDERGROUND UTILITIES: .....	G-19
RESOURCE CONSERVATION AND ENV. SUSTAINABLE PRACTICES: .....	G-19
DOMESTIC STEEL: .....	G-20
REMOVABLE PAVEMENT MARKINGS - (Partial Payments for Materials): .....	G-20
MAINTENANCE OF THE PROJECT: .....	G-20
COOPERATION BETWEEN CONTRACTORS: .....	G-21
IRAN DIVESTMENT ACT: .....	G-21
GIFTS FROM VENDORS AND CONTRACTORS: .....	G-22
LIABILITY INSURANCE: .....	G-22
EROSION AND SEDIMENT CONTROL/STORMWATER CERTIFICATION: .....	G-22
PROCEDURE FOR MONITORING BORROW PIT DISCHARGE: .....	G-28
EMPLOYMENT: .....	G-29
STATE HIGHWAY ADMINISTRATOR TITLE CHANGE: .....	G-30
SUBLETTING OF CONTRACT: .....	G-30
MOBILIZATION: .....	G-30
NOTE TO CONTRACTOR: .....	G-30
ROADWAY .....	R-1

### STANDARD SPECIAL PROVISIONS

AVAILABILITY FUNDS – TERMINATION OF CONTRACTS .....	SSP-1
NCDOT GENERAL SEED SPECIFICATION FOR SEED QUALITY .....	SSP-2
ERRATA .....	SSP-5
PLANT AND PEST QUARANTINES .....	SSP-7
AWARD OF CONTRACT .....	SSP-8
MINORITY AND FEMALE EMPLOYMENT REQUIREMENTS .....	SSP-13
REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONST. CONTRACTS .....	SSP-16

ON-THE-JOB TRAINING ..... SSP-25  
 NCDENR NAME CHANGE..... SSP-28  
 MINIMUM WAGES ..... SSP-29

**UNIT PROJECT SPECIAL PROVISIONS**

TRAFFIC CONTROL ..... TC-1  
 EROSION CONTROL ..... EC-1  
 STRUCTURE / CULVERTS..... BP-1

**PROPOSAL ITEM SHEET**

ITEM SHEET(S) (TAN SHEETS)

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

(7-1-95) (Rev. 12-18-07)

108

SP1 G10 A

The date of availability for this contract is **April 1, 2017**.

The completion date for this contract is **September 30, 2017**.

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 **One Thousand Dollars (\$ 1,000.00)** per calendar day.

**INTERMEDIATE CONTRACT TIME NUMBER 1 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 **I-485 (Mainline & Ramps)** during the following time restrictions:

**DAY AND TIME RESTRICTIONS**

**Monday thru Sunday  
6:00 AM to 8:00 PM**

In addition, the Contractor shall not close or narrow a lane of traffic on **I-485 (Mainline & Ramps)**, detain and/or alter the traffic flow on or during holidays, holiday weekends, special events, or any other time when traffic is unusually heavy, including the following schedules:

**HOLIDAY AND HOLIDAY WEEKEND LANE CLOSURE RESTRICTIONS**

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

4. For **Memorial Day**, between the hours of **6:00 AM** Friday and **8:00 PM** Tuesday.
5. For **Independence Day**, between the hours of **6:00 AM** the day before Independence Day and **8:00 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 **8:00 PM** the Tuesday after Independence Day.

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

Holidays and holiday weekends shall include New Year's, Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. The Contractor shall schedule his work so that lane closures 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 **Two Thousand Five Hundred Dollars (\$ 2,500.00)** per fifteen (15) minute time period.

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

(2-20-07)

108

SP1 G14 D

The Contractor shall complete the required work of installing, maintaining and removing the traffic control devices for road closures and restoring traffic to the existing traffic pattern. The Contractor shall not close **I-485 (Ramps)** during the following time restrictions:

**DAY AND TIME RESTRICTIONS**

**Monday thru Sunday  
6:00 AM to 8:00 PM**

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

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

The liquidated damages are **Two Thousand Five Hundred Dollars (\$2,500.00)** per hour.

**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 *2012 Standard Specifications*):

<b>Line #</b>	<b>Description</b>
9	Asphalt Concrete Surface Course, Type S9.5D

**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 *2012 Standard Specifications*).

<b>Line #</b>	<b>Description</b>
24-31, 33	Long-Life Pavement Markings
32	Removable Tape
38	Permanent Pavement Markers
40-44	Erosion Control

**FUEL PRICE ADJUSTMENT:**

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

109-8

SP1 G43

Revise the *2012 Standard Specifications* as follows:

**Page 1-83, Article 109-8, Fuel Price Adjustments**, add the following:

The base index price for DIESEL #2 FUEL is \$ **1.5601** per gallon. Where any of the following are included as pay items in the contract, they will be eligible for fuel price adjustment.

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

<b>Description</b>	<b>Units</b>	<b>Fuel Usage Factor Diesel</b>
Unclassified Excavation	Gal/CY	0.29
Borrow Excavation	Gal/CY	0.29
Class IV Subgrade Stabilization	Gal/Ton	0.55
Aggregate Base Course	Gal/Ton	0.55
Sub-Ballast	Gal/Ton	0.55
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. 5-17-16)

108-2

SP1 G58

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

	<b><u>Fiscal Year</u></b>	<b><u>Progress (% of Dollar Value)</u></b>
2017	(7/01/16 - 6/30/17)	<b>64%</b> of Total Amount Bid
2018	(7/01/17 - 6/30/18)	<b>36%</b> of Total Amount Bid

The Contractor shall also furnish his own progress schedule in accordance with Article 108-2 of the *2012 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. 4-19-16)

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.

*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.  
<http://www.ncdot.org/doh/forms/files/DBE-IS.xls>

*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 amount 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 **5.0 %**

- (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://partner.ncdot.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 Expedite, the bidding software of Bid Express®.

- (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 Expedite, 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 12:00 noon 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 12:00 noon 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 12:00 noon 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 12:00 noon 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 12:00 noon 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 the next official state business day. If the contractor cannot send the information electronically, then one complete set and 9 copies of this information shall be received under the same time constraints above.

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

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

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

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

- (A) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising, written notices, use of verifiable electronic means through the use of the NCDOT Directory of Transportation Firms) the interest of all certified DBEs who have the capability to perform the work of the contract. The bidder must solicit this interest within

at least 10 days prior to bid opening to allow the DBEs to respond to the solicitation. Solicitation shall provide the opportunity to DBEs within the Division and surrounding Divisions where the project is located. The bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.

- (B) Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved.
  - (1) Where appropriate, break out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.
  - (2) Negotiate with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be sublet includes potential for DBE participation (2<sup>nd</sup> and 3<sup>rd</sup> tier subcontractors).
- (C) Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (D)
  - (1) Negotiating in good faith with interested DBEs. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as 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 Development Manager in the Business Opportunity and Work Force Development Unit 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 firm (or an approved substitute DBE firm) to meet all or part of a contract goal requirement, the contractor shall not terminate the DBE 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. A DBE may only be terminated after receiving the Engineer's written approval based upon a finding of good cause for the termination. The prime contractor must give the DBE firm five (5) calendar days to respond to the prime contractor's notice of termination and advise the prime contractor and the Department of the reasons, if any, why the firm objects to the proposed termination of its subcontract and why the Department should not approve the action.

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.

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).

### **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 *2012 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.

**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."

**LOCATING EXISTING UNDERGROUND UTILITIES:**

(3-20-12)

105

SP1 G115

Revise the *2012 Standard Specifications* as follows:

**Page 1-43, Article 105-8, line 28, after the first sentence, add the following:**

Identify excavation locations by means of pre-marking with white paint, flags, or stakes or provide a specific written description of the location in the locate request.

**RESOURCE CONSERVATION AND ENV. SUSTAINABLE PRACTICES:**

(5-21-13) (Rev. 5-19-15)

104-13

SP1 G118

In accordance with North Carolina Executive Order 156, NCGS 130A-309.14(3), and NCGS 136-28.8, it is the objective of the Department to aid in the reduction of materials that become a part of our solid waste stream, to divert materials from landfills, to find ways to recycle and reuse materials, to consider and minimize, where economically feasible, the environmental impacts associated with agency land use and acquisition, construction, maintenance and facility management for the benefit of the Citizens of North Carolina.

To achieve the mission of reducing environmental impacts across the state, the Department is committed to supporting the efforts to initiate, develop and use products and construction methods that incorporate the use of recycled, solid waste products and environmentally sustainable practices in accordance with Article 104-13 of the *Standard Specifications*.

Report the quantities of reused or recycled materials either incorporated in the project or diverted from landfills and any practice that minimizes the environmental impact on the project annually on the Project Construction Reuse and Recycling Reporting Form. The Project Construction Reuse and Recycling Reporting Form and a location tool for local recycling facilities are available at:

<http://connect.ncdot.gov/resources/Environmental/Pages/North-Carolina-Recycling-Locations.aspx>.

Submit the Project Construction Reuse and Recycling Reporting Form by August 1 annually to [valuemanagementunit@ncdot.gov](mailto:valuemanagementunit@ncdot.gov). For questions regarding the form or reporting, please contact the State Value Management Engineer at 919-707-4810.

**DOMESTIC STEEL:**

(4-16-13)

106

SP1 G120

Revise the *2012 Standard Specifications* as follows:

**Page 1-49, Subarticle 106-1(B) Domestic Steel, lines 2-7,** replace the first paragraph with the following:

All steel and iron products that are permanently incorporated into this project shall be produced in the United States except minimal amounts of foreign steel and iron products may be used provided the combined material cost of the items involved does not exceed 0.1% of the total amount bid for the entire project or \$2,500, whichever is greater. If invoices showing the cost of the material are not provided, the amount of the bid item involving the foreign material will be used for calculations. This minimal amount of foreign produced steel and iron products permitted for use is not applicable to high strength fasteners. Domestically produced high strength fasteners are required.

**REMOVABLE PAVEMENT MARKINGS - (Partial Payments for Materials):**

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

1205-10

SP1 G124

When so authorized by the Engineer, partial materials payments will be made up to 95 percent of the delivered cost of pavement marking tape, provided that these materials have been delivered on or in the vicinity of the project, stored in an acceptable manner, not to exceed the shelf life recommended by the manufacturer, and further provided the documents listed in Subarticle 109-5(C) of the *2012 Standard Specifications* have been furnished to the Engineer.

The Contractor shall be responsible for the material and the satisfactory performance of the material when used in the work.

The provisions of Article 109-6 of the *2012 Standard Specifications* will not apply to removable pavement marking materials.

**MAINTENANCE OF THE PROJECT:**

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

104-10

SP1 G125

Revise the *2012 Standard Specifications* as follows:

**Page 1-35, 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 1-35, 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 1-35, 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 *2012 Standard Specifications*.

I-5747 (DJ00186), located in the vicinity of this project is currently under construction. Contact NCDOT Resident Engineer Kevin Bridges at (980) 523-0080 for additional information.

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.

**IRAN DIVESTMENT ACT:**

(5-17-16)

SP01 G151

As a result of the Iran Divestment Act of 2015 (Act), Article 6E, N.C. General Statute § 147-86.55, the State Treasurer published the Final Divestment List (List) which includes the Final Divestment List-Iran, and the Parent and Subsidiary Guidance-Iran. These lists identify companies and persons engaged in investment activities in Iran and will be updated every 180 days. The List can be found at <https://www.nctreasurer.com/inside-the-department/OpenGovernment/Pages/Iran-Divestment-Act-Resources.aspx>

By submitting the Offer, the Contractor certifies that, as of the date of this bid, it is not on the then-current List created by the State Treasurer. The Contractor must notify the Department immediately if, at any time before the award of the contract, it is added to the List.

As an ongoing obligation, the Contractor must notify the Department immediately if, at any time during the contract term, it is added to the List. Consistent with § 147-86.59, the Contractor shall not contract with any person to perform a part of the work if, at the time the subcontract is signed, that person is on the then-current List.

During the term of the Contract, should the Department receive information that a person is in violation of the Act as stated above, the Department will offer the person an opportunity to respond and the Department will take action as appropriate and provided for by law, rule, or contract.

**GIFTS FROM VENDORS AND CONTRACTORS:**

(12-15-09)

107-1

SP1 G152

By Executive Order 24, issued by Governor Perdue, and *N.C.G.S. § 133-32*, it is unlawful for any vendor or contractor (i.e. architect, bidder, contractor, construction manager, design professional, engineer, landlord, offeror, seller, subcontractor, supplier, or vendor), to make gifts or to give favors to any State employee of the Governor's Cabinet Agencies (i.e. Administration, Commerce, Correction, Crime Control and Public Safety, Cultural Resources, Environment and Natural Resources, Health and Human Services, Juvenile Justice and Delinquency Prevention, Revenue, Transportation, and the Office of the Governor). This prohibition covers those vendors and contractors who:

- (A) Have a contract with a governmental agency; or
- (B) Have performed under such a contract within the past year; or
- (C) Anticipate bidding on such a contract in the future.

For additional information regarding the specific requirements and exemptions, vendors and contractors are encouraged to review Executive Order 24 and *N.C.G.S. § 133-32*.

Executive Order 24 also encouraged and invited other State Agencies to implement the requirements and prohibitions of the Executive Order to their agencies. Vendors and contractors should contact other State Agencies to determine if those agencies have adopted Executive Order 24.

**LIABILITY INSURANCE:**

(5-20-14)

SP1 G160

Revise the *2012 Standard Specifications* as follows:

**Page 1-60, Article 107-15 LIABILITY INSURANCE, line 16**, add the following as the second sentence of the third paragraph:

Prior to beginning services, all contractors shall provide proof of coverage issued by a workers' compensation insurance carrier, or a certificate of compliance issued by the Department of Insurance for self-insured subcontractors, irrespective of whether having regularly in service fewer than three employees.

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

(1-16-07) (Rev 11-22-16)

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 0.5 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. 3-19-13)

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 *2012 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 [http://www.ncdot.gov/doh/operations/dp\\_chief\\_eng/roadside/fieldops/downloads/Files/TurbidityReductionOptionSheet.pdf](http://www.ncdot.gov/doh/operations/dp_chief_eng/roadside/fieldops/downloads/Files/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.

**EMPLOYMENT:**

(11-15-11) (Rev. 1-17-12)

108, 102

SP1 G184

Revise the *2012 Standard Specifications* as follows:

**Page 1-20, Subarticle 102-15(O)**, delete and replace with the following:

(O) Failure to restrict a former Department employee as prohibited by Article 108-5.

**Page 1-65, Article 108-5 Character of Workmen, Methods, and Equipment, line 32**, delete all of line 32, the first sentence of the second paragraph and the first word of the second sentence of the second paragraph.

**STATE HIGHWAY ADMINISTRATOR TITLE CHANGE:**

(9-18-12)

SP1 G185

Revise the *2012 Standard Specifications* as follows:

Replace all references to “State Highway Administrator” with “Chief Engineer”.

**SUBLETTING OF CONTRACT:**

(11-18-2014)

108-6

SP1 G186

Revise the *2012 Standard Specifications* as follows:

**Page 1-66, Article 108-6 Subletting of Contract, line 37**, add the following as the second sentence of the first paragraph:

All requests to sublet work shall be submitted within 30 days of the date of availability or prior to expiration of 20% of the contract time, whichever date is later, unless otherwise approved by the Engineer.

**Page 1-67, Article 108-6 Subletting of Contract, line 7**, add the following as the second sentence of the fourth paragraph:

Purchasing materials for subcontractors is not included in the percentage of work required to be performed by the Contractor. If the Contractor sublets items of work but elects to purchase material for the subcontractor, the value of the material purchased will be included in the total dollar amount considered to have been sublet.

**MOBILIZATION:**

(09-15-15)

800

SP1 G194

Revise the *2012 Standard Specifications* as follows:

**Page 8-1, Subarticle 800-2 Measurement and Payment**, add the following as the 5<sup>th</sup> paragraph:

For projects that have a delayed availability date of 90 calendar days or more after contract execution, the first mobilization payment may be for the verified actual cost of paid bond premiums. This payment will only be made upon request by the contractor with supporting documentation including invoice and proof of payment. This payment will be limited to 1% of the amount bid for the contract and the subsequent mobilization payment will be reduced by an equal amount to follow the payment schedule as shown above. In no case will more than 5% of the amount bid for the contract be paid before the last partial pay estimate.

**NOTE TO CONTRACTOR:**

The Contractor shall not close I-485 (Mainline) at any time.

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

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

560

SP1 R07BR

**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 *2012 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 *2012 Standard Specifications*. All soil is subject to test and acceptance or rejection by the Engineer.

The Contractor will have the option of using 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, **seeding and mulching** and for all labor, tools, equipment, and incidentals necessary to complete the work. Where ASB is used, seeding and mulching will not be required.

*Borrow Excavation* will be paid in accordance with Section 230 of the *2012 Standard Specifications* for earth material furnished by the Contractor. The requirements of Article 104-5 of the *2012 Standard Specifications* pertaining to revised contract prices for overrunning minor items will not apply to the item of *Borrow Excavation*. If ASB is used for borrow, a unit weight of 140 pounds per cubic foot will be used to convert the weight of ASB to cubic yards.

*Incidental Stone Base* will be measured and paid as provided in Article 545-6 of the *2012 Standard Specifications*. If ASB is used for Incidental Stone Base, payment will be made for borrow as referenced above.

Payment will be made under:

**Pay Item**

Shoulder Reconstruction  
Borrow Excavation

**Pay Unit**

Shoulder Mile  
Cubic Yard

**SHOULDER RECONSTRUCTION PROCEDURE:**

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

560

SP1 R10BR

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.

**INCIDENTAL STONE BASE:**

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

545

SP5 R28R

**Description**

Place incidental stone base on driveways, mailboxes, etc. immediately after paving and do not have the paving operations exceed stone base placement by more than one week without written permission of the Engineer.

**Materials and Construction**

Provide and place incidental stone base in accordance with Section 545 of the *2012 Standard Specifications*.

## Measurement and Payment

*Incidental Stone Base* will be measured and paid in accordance with Article 545-6 of the *2012 Standard Specifications*.

### **ASPHALT PAVEMENTS - SUPERPAVE:**

(6-19-12) (Rev. 8-16-16)

605, 609, 610, 650

SP6 R01

Revise the *2012 Standard Specifications* as follows:

**Page 6-3, Article 605-7, APPLICATION RATES AND TEMPERATURES**, replace this article, including Table 605-1, with the following:

Apply tack coat uniformly across the existing surface at target application rates shown in Table 605-1.

Existing Surface	Target Rate (gal/sy)
	Emulsified Asphalt
New Asphalt	0.04 ± 0.01
Oxidized or Milled Asphalt	0.06 ± 0.01
Concrete	0.08 ± 0.01

Apply tack coat at a temperature within the ranges shown in Table 605-2. Tack coat shall not be overheated during storage, transport or at application.

Asphalt Material	Temperature Range
Asphalt Binder, Grade PG 64-22	350 - 400°F
Emulsified Asphalt, Grade RS-1H	130 - 160°F
Emulsified Asphalt, Grade CRS-1	130 - 160°F
Emulsified Asphalt, Grade CRS-1H	130 - 160°F
Emulsified Asphalt, Grade HFMS-1	130 - 160°F
Emulsified Asphalt, Grade CRS-2	130 - 160°F

**Page 6-6, Subarticle 607-5(A), Milled Asphalt Pavement**, line 25, add the following to the end of the paragraph:

Areas to be paid under these items include mainline, turn lanes, shoulders, and other areas milled in conjunction with the mainline and any additional equipment necessary to remove pavement in the area of manholes, water valves, curb, gutter and other obstructions.

**Page 6-6, Subarticle 607-5(C), Incidental Milling**, lines 42-48, replace the paragraph with the following:

*Incidental Milling* to be paid will be the actual number of square yards of surface milled where the Contractor is required to mill butt joints, irregular areas and intersections milled as a separate operation from mainline milling and re-mill areas that are not due to the Contractor's negligence whose length is less than 100 feet. Measurement will be made as provided in Subarticle 607-5(A) for each cut the Contractor is directed to perform. Where the Contractor elects to make multiple cuts to achieve the final depth, no additional measurement will be made. Compensation will be made at the contract unit price per square yard for *Incidental Milling*.

**Page 6-7, Article 609-3, FIELD VERIFICATION OF MIXTURE AND JOB MIX FORMULA ADJUSTMENTS**, lines 35-37, delete the second sentence of the second paragraph.

**Page 6-18, Article 610-1 DESCRIPTION**, lines 40-41, delete the last sentence of the last paragraph.

**Page 6-19, Subarticle 610-3(A), Mix Design-General**, line 5, add the following as the first paragraph:

Warm mix asphalt (WMA) is allowed for use at the Contractor's option in accordance with the NCDOT Approved Products List for WMA Technologies available at:

**<https://connect.ncdot.gov/resources/Materials/MaterialsResources/Warm%20Mix%20Asphalt%20Approved%20List.pdf>**

**Page 6-20, Subarticle 610-3(C), Job Mix Formula (JMF)**, lines 47-48, replace the last sentence of the third paragraph with the following:

The JMF mix temperature shall be within the ranges shown in Table 610-1 unless otherwise approved.

**Page 6-21, Subarticle 610-3(C) Job Mix Formula (JMF)**, replace Table 610-1 with the following:

**TABLE 610-1  
MIXING TEMPERATURE AT THE ASPHALT PLANT**

Binder Grade	JMF Mix Temperature
PG 58-28; PG 64-22	250 - 290°F
PG 70-22	275- 305°F
PG 76-22	300- 325°F

**Page 6-21, Subarticle 610-3(C) Job Mix Formula (JMF)**, lines 1-2, in the first sentence of the first paragraph, delete “and compaction”. Lines 4-7, delete the second paragraph and replace with the following:

When RAS is used, the JMF mix temperature shall be established at 275°F or higher.

**Page 6-22, Article 610-4, WEATHER, TEMPERATURE AND SEASONAL LIMITATIONS FOR PRODUCING AND PLACING ASPHALT MIXTURES**, lines 15-17, replace the second sentence of the first paragraph with the following:

Do not place asphalt material when the air or surface temperatures, measured at the location of the paving operation away from artificial heat, do not meet Table 610-5.

**Page 6-23, Article 610-4, WEATHER, TEMPERATURE AND SEASONAL LIMITATIONS FOR PRODUCING AND PLACING ASPHALT MIXTURES**, replace Table 610-5 with the following:

**TABLE 610-5  
PLACEMENT TEMPERATURES FOR ASPHALT**

Asphalt Concrete Mix Type	Minimum Surface and Air Temperature
B25.0B, C	35°F
I19.0B, C, D	35°F
SF9.5A, S9.5B	40°F <sup>A</sup>
S9.5C, S12.5C	45°F <sup>A</sup>
S9.5D, S12.5D	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 6-23, Subarticle 610-5(A), General**, lines 33-34, replace the last sentence of the third paragraph with the following:

Produce the mixture at the asphalt plant within  $\pm 25$  °F of the JMF mix temperature. The temperature of the mixture, when discharged from the mixer, shall not exceed 350°F.

**Page 6-26, Article 610-7, HAULING OF ASPHALT MIXTURE**, lines 22-23, in the fourth sentence of the first paragraph replace “so as to overlap the top of the truck bed and” with “to”. Line 28, in the last paragraph, replace “+15 °F to -25 °F of the specified JMF temperature.” with “ $\pm 25$  °F of the specified JMF mix temperature.”

**Page 6-26, Article 610-8, SPREADING AND FINISHING, line 34**, add the following new paragraph:

As referenced in Section 9.6.3 of the *HMA/QMS Manual*, use the automatic screed controls on the paver to control the longitudinal profile. Where approved by the Engineer, the Contractor has the option to use either a fixed or mobile string line.

**Page 6-29, Article 610-13, FINAL SURFACE TESTING AND ACCEPTANCE, line 39**, add the following after the first sentence in the first paragraph:

Smoothness acceptance testing using the inertial profiler is not required on ramps, loops and turn lanes.

**Page 6-30, Subarticle 610-13(A), Option 1 – Inertial Profiler, lines 15-16**, replace the fourth sentence of the fourth paragraph with the following:

The interval at which relative profile elevations are reported shall be 2”.

**Page 6-30, Subarticle 610-13(A), Option 1 – Inertial Profiler, lines 25-28**, replace the ninth paragraph with the following:

Operate the profiler at any speed as per the manufacturer’s recommendations to collect valid data.

**Page 6-30, Subarticle 610-13(A), Option 1 – Inertial Profiler, lines 30-31**, delete the third sentence of the tenth paragraph.

**Page 6-31, Subarticle 610-13(A), Option 1 – Inertial Profiler, lines 11-13**, replace the first sentence of the third paragraph with the following:

After testing, transfer the profile data from the profiler portable computer’s hard drive to a write once storage media (Flash drive, USB, DVD-R or CD-R) or electronic media approved by the Engineer.

**Page 6-31, Subarticle 610-13(A), Option 1 – Inertial Profiler, lines 17-18**, replace the first sentence of the fourth paragraph with the following:

Submit a report with the documentation and electronic data of the evaluation for each section to the Engineer within 10 days after completion of the smoothness testing. The report shall be in the tabular format for each 0.10 segment or a portion thereof with a summary of the MRI values and the localized roughness areas including corresponding project station numbers or acceptable reference points. Calculate the pay adjustments for all segments in accordance with the formulas in Sections (1) and (2) shown below. The Engineer shall review and approval all pay adjustments unless corrective action is required.

**Page 6-31, Subarticle 610-13(A)(1), Acceptance for New Construction, lines 36-37**, replace the third paragraph with the following:



The price adjustment will apply to each 0.10-mile section or prorated for a portion thereof, based on the Mean Roughness Index (MRI), the average IRI values from both wheel paths.

**Page 6-32, Subarticle 610-13(A)(2), Localized Roughness, lines 12-16,** replace the first paragraph with the following:

Areas of localized roughness shall be identified through the “Smoothness Assurance Module (SAM)” provided in the ProVAL software. Use the SAM report to optimize repair strategies by analyzing the measurements from profiles collected using inertial profilers. The ride quality threshold for localized roughness shall be 165 in/mile for any sections that are 15 ft. to 100 ft. in length at the continuous short interval of 25 ft. Submit a continuous roughness report to identify each section with project station numbers or reference points outside the threshold and identify all localized roughness, with the signature of the Operator included with the submitted IRI trace and electronic files.

**Page 6-32, Subarticle 610-13(A)(2), Localized Roughness, line 21,** add the following new paragraph:

If the Engineer does not require corrective action, the pay adjustment for each area of localized roughness shall be based on the following formula:

$$PA = (165 - LR\#) 5$$

Where:

- PA = Pay Adjustment (dollars)
- LR# = The Localized Roughness number determined from SAM report for the ride quality threshold

**Page 6-41, Subarticle 650-3(B), Mix Design Criteria,** replace Table 650-1 with the following:

<b>TABLE 650-1 OGAFC GRADATION CRITERIA</b>			
<i>Sieve Size (mm)</i>	<i>Type FC-1</i>	<i>Type FC-1 Modified</i>	<i>Type FC-2 Modified</i>
19.0	-	-	100
12.5	100	100	80 - 100
9.50	75 - 100	75 - 100	55 - 80
4.75	25 - 45	25 - 45	15 - 30
2.36	5 - 15	5 - 15	5 - 15
0.075	1.0 - 3.0	1.0 - 3.0	2.0 - 4.0

**SHOULDER WEDGE:**

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

Revise the 2012 *Standard Specifications* as follows:

**Page 6-26, Article 610-8,** add the following after line 43:

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.

**ASPHALT BINDER CONTENT OF ASPHALT PLANT MIXES:**

(11-21-00) (Rev. 7-17-12)

609

SP6 R15

The approximate asphalt binder content of the asphalt concrete plant mixtures used on this project will be as follows:

Asphalt Concrete Base Course	Type B 25.0__	4.4%
Asphalt Concrete Intermediate Course	Type I 19.0__	4.8%
Asphalt Concrete Surface Course	Type S 4.75A	6.8%
Asphalt Concrete Surface Course	Type SA-1	6.8%
Asphalt Concrete Surface Course	Type SF 9.5A	6.7%
Asphalt Concrete Surface Course	Type S 9.5__	6.0%
Asphalt Concrete Surface Course	Type S 12.5__	5.6%

The actual asphalt binder content will be established during construction by the Engineer within the limits established in the *2012 Standard Specifications*.

**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 *2012 Standard Specifications*.

The base price index for asphalt binder for plant mix is \$ **325.71** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **October 1, 2016**.

**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*.

**WEDGE COURSE:**

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

SP6 R52R

Place a wedge course at locations ahead of the paving operation as required by the Engineer.

**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 *2012 Standard Specifications* as follows:

**Page 6-10, 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 6-10, Subarticle 609-6(C) Control Charts**, delete the fourth 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 *HMA/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 6-11, Subarticle 609-6(D) Control Limits, Table 609-1 CONTROL LIMITS,** replace with the following:

<b>Mix Control Criteria</b>	<b>Target Source</b>	<b>Moving Average Limit</b>	<b>Individual Limit</b>
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:

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

**Page 6-17, Subarticle 609-9(C) Limits of Precision, Table 609-3 LIMITS OF PRECISION FOR TEST RESULTS,** replace with the following:

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

**Page 6-19, Article 610-3, COMPOSITION OF MIXTURES (MIX DESIGN AND JOB MIX FORMULA), lines 23-24**, replace the second sentence in the fifth paragraph with the following:

RAS material may constitute up to 6% by weight of total mixture for any mix with the exception of OGAFc which may constitute up to 5% by weight.

**Page 6-19, Article 610-3, COMPOSITION OF MIXTURES (MIX DESIGN AND JOB MIX FORMULA), line 32**, add the following after the fifth sentence of the fifth paragraph:

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

**PAVEMENT WIDTH VARIES:**

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

610

SP6 R76R

The Contractor's attention is directed to the fact that the existing pavement varies in width and the Contractor will be required to widen the pavement as directed by the Engineer in order to obtain a uniform edge of pavement.

**PATCHING EXISTING PAVEMENT:**

(1-15-02) (Rev. 12-18-12)

610

SP6 R88R

**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. 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.

**Materials**

The patching consists of Asphalt Concrete Base Course, Asphalt Concrete Intermediate Course, Asphalt Concrete Surface Course, or a combination of base, binder and surface course.

**Construction Methods**

Remove existing pavement at locations directed by the Engineer in accordance with Section 250 of the *2012 Standard Specifications*.

Place Asphalt Concrete Base Course, in lifts not exceeding 5.5 inches. Utilize compaction equipment suitable for compacting patches as small as 3.5 feet by 6 feet on each lift. Use an approved compaction pattern to achieve proper compaction. If patched pavement is to be open to traffic for more than 48 hours prior to overlay, use Asphalt Surface Course in the top 1.5 inches of the patch.

Schedule 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 restored.

**Measurement and Payment**

*Patching Existing Pavement* will be measured and paid as the actual number of tons of asphalt plant mix complete in place that 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. 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 all types 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.

Patching Existing Pavement will be considered a minor item. Any provisions included in the contract that 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.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Patching Existing Pavement	Ton

**ULTRA-THIN BONDED WEARING COURSE WITH ALTERNATE METHOD:**

(06-30-14) (Rev 01-29-16)

661

SP 6 R90

Revise the *2012 Standard Specifications* as follows:

**Page 6-55, Section 661 ULTRA-THIN BONDED WEARING COURSE, line 24,** replace the section with the following:

**SECTION 661  
ULTRA-THIN BONDED WEARING COURSE**

**661-1 DESCRIPTION**

Produce and place an Ultra-thin Bonded Wearing Course (UBWC), including an application of a warm Polymer-Modified Emulsion Membrane (PMEM) followed immediately with an UBWC hot mix asphalt overlay. Spray PMEM immediately before applying hot mix asphalt.

The Contractor may elect to use an alternate method for the placement of the UBWC. As an alternate to spraying PMEM prior to placement of the hot-mix asphalt (HMA) with a spray paver, the Contractor may use a non-tracking hot-applied asphalt tack coat material prior to placement of the HMA. If the alternate method is selected, submit documentation and proposed plan to Engineer prior to beginning any work.

Provide and conduct the QC and required testing for acceptance of the UBWC in accordance with the contract.

**661-2 MATERIALS**

Refer to Division 10.

<b>Item</b>	<b>Section</b>
Anti-strip Additives	1012-1(G)
Coarse Aggregate	1012-1(B)
Fine Aggregate	1012-1(C)
Mineral Filler	1012-1(D)
Polymer Modified Asphalt Binder	1020-2

Use either PG 70-28 or PG 76-22 binder in the asphalt mix design. Conform to Section 620. Ensure that the asphalt binder is compatible with the PMEM (or alternate) and the existing pavement.

Use an approved Hot Applied Tack non-tracking asphalt tack coat found on NCDOT's Approved Product List for *Non-Tracking Asphalt Tack Coat* maintained by the Materials & Tests Unit at the following website:

<https://connect.ncdot.gov/resources/Materials/MaterialsResources/Approved%20Non-Tracking%20Tack%20Coat%20Products%20for%20NC.pdf>

**661-3 COMPOSITION OF MIX**

Do not use crystalline limestone, crystalline-dolomitic limestone or marble for aggregates and do not use reclaimed asphalt pavement (RAP). Use a mixture of coarse and fine aggregate, asphalt binder, mineral filler and other additives when required. Size, uniformly grade and combine in such proportions such that the resulting mixture meets the gradation and physical requirements of Tables 661-1 and 661-2. Use the mix design and optimum asphalt content for *Ultra-thin Bonded Wearing Course Mix Design Guidelines* on file with the Materials and Tests Unit and available upon request.

Submit in writing a mix design and proposed job mix formula (JMF) targets for each required mix type and combination of aggregates to the Engineer for review and approval at least 20 days before start of asphalt mix production. Submit the mix design and proposed JMF targets on forms and in a format approved by the Department and in accordance with applicable requirements of Article 610-3.

Establish the JMF target values within the mix design criteria specified in Table 661-2 for the particular type mixture.

Have on hand at the asphalt plant, the approved mix design and JMF issued by the Department, before beginning the work.

The JMF for each mixture shall remain in effect until modified in writing by the Engineer, provided the results of QMS tests performed on material currently being produced conform with specification requirements. If a change in sources of aggregate materials needs to be made, a new mix design and JMF will be required before the new mixture is produced. When unsatisfactory results or other conditions make it necessary, the Engineer may establish a new JMF.

Determine and certify compatibility of all asphalt emulsion, asphalt binder and aggregate components.

<b>TABLE 661-1 UBWC GRADATION CRITERIA</b>	
<b>Sieves (mm)</b>	<b>% Passing by Weight</b>
12.5	100
9.50	85 - 100
4.75	28 - 44
2.36	17 - 34
1.18	13 - 23
0.600	8 - 18
0.300	6 - 13
0.150	4 - 10
0.075	3.0 - 7.0

<b>TABLE 661-2 UBWC MIX DESIGN CRITERIA</b>	
<b>Property</b>	<b>Requirement</b>
Asphalt Content, %	5.0 (minimum)
Draindown Test, AASHTO T 305	0.1% max
Moisture Sensitivity, AASHTO T 283 <sup>A</sup>	85% min
Application Rate, lb/sy	70 lb/sy
Approximate Application Depth, in.	5/8"
Asphalt PG Grade, AASHTO M 320	PG 70-28 or PG 76-22

- A. Specimens for AASHTO T 283 testing are to be compacted using the Superpave gyratory compactor. The mixtures shall be compacted using 100 gyrations to achieve specimens approximately 95 mm in height. Use mixture and compaction temperatures recommended by the binder supplier.



**661-4 CONSTRUCTION METHODS****(A) Equipment**

Use asphalt mixing plants in accordance with Article 610-5.

Furnish paving machine with the following capabilities:

- (1) Self-priming paving machine capable of spraying the PMEM, applying the hot asphalt concrete overlay and screeding the surface of the mat to the required profile and cross section in one pass at any rate between 30 and 92 ft/minute.
- (2) Receiving hopper, feed conveyor, storage tank for PMEM material, PMEM emulsion single variable-width spray bar and a variable width, heated, vibratory-tamping bar screed.
- (3) Screed with the ability to be crowned at the center both positively and negatively and have vertically and horizontally adjustable extensions to accommodate the desired pavement profile and widths.
- (4) Sprayer system capable of accurately and continuously monitoring the rate of spray and providing a uniform application across the entire width to be overlaid.
- (5) Use pavers equipped with an electronic screed control that will automatically control the longitudinal profile and cross slope of the pavement. Control the longitudinal profile through the use of either a mobile grade reference(s), including mechanical, sonic and laser grade sensing and averaging devices, an erected string line(s) when specified, joint matching shoe(s), slope control devices or the approved methods or combination of methods. Unless otherwise specified, use a mobile grade reference system capable of averaging the existing grade or pavement profile over at least a 30 ft distance or by non-contacting laser or sonar type ski with at least 4 referencing stations mounted on the paver at a minimum length of 24 ft. Establish the position of the reference system such that the average profile grade is established at the approximate midpoint of the system. The transverse cross slope shall be controlled as directed by the Engineer.

Use an erected fixed stringline for both and longitudinal profile and cross slope control when required by the contract. When an erected fixed string line is required, furnish and erect the necessary guide line for the equipment. Support the stringline with grade stakes placed at maximum intervals of 25 ft for the finished pavement grade.

Use the 30 ft minimum length mobile grade reference system or the non-contacting laser or sonar type ski with at least 4 referencing stations mounted on the paver at a minimum length of 24 ft to control the longitudinal profile when placing the initial lanes and all adjacent lanes of all layers, including resurfacing and asphalt in-lays, unless other specified or approved. A joint matching device (short 6" shoes) may be used only when approved.

Use the automatic slope control system unless otherwise approved. The Engineer may waive the use of automatic slope controls in areas where the existing surface (subgrade, base, asphalt layer, etc.) exhibits the desired cross slope of the final surface. The Engineer may also waive the use of automatic slope controls in areas where the use of such

equipment is impractical due to irregular shape or cross section (such as resurfacing). When the use of the automatic slope controls is waived, the Engineer may require the use of mobile grade references on either or both sides of the paver. Manual screed operation will be permitted in the construction of irregularly shaped and minor areas, subject to approval. Waiver of the use of automatic screed controls does not relieve the Contractor of achieving plan profile grades and cross slopes.

In the case of malfunction of the automatic screed control equipment, the paver may be manually operated for the remainder of the workday provided this method of operation produces acceptable results. Do not resume work thereafter until the automatic system is functional.

The Engineer will waive the requirement for use of pavers for spreading and finishing where irregularities or obstacles make their use impractical. Spread, rake and lute the mixture by hand methods or other approved methods in these areas.

Operate the paver as continuously as possible. Pave intersections, auxiliary lanes and other irregular areas after the main line roadway has been paved, unless otherwise approved.

Compact the wearing course with a steel double drum asphalt roller(s) with a minimum weight of 10 tons. Maintain rollers in reliable operating condition and equip with functioning water system and scrapers to prevent adhesion of the fresh mix onto the roller drums. Supply adequate roller units and compact promptly following the placement of the material.

Request approval of equipment before the start of any work. Maintain all equipment and tools in satisfactory working condition at all times.

**(B) Surface Preparation**

Perform the following items before the commencement of paving operations.

- (1) Protect and cover manhole covers, drains, grates catch basins and other such utility structures with plastic or building felt before paving and reference for location and adjustment after paving.
- (2) Remove thermoplastic traffic markings symbols, characters or other markings greater than 1/4" in thickness on the existing pavement.
- (3) Clean and completely fill pavement cracks and joints greater than 1/4" wide. Do not overband the existing cracks and joints. Apply sealant per manufacturer's recommendation.
- (4) Fill surface irregularities greater than 1" deep with a material approved by the Engineer.
- (5) Thoroughly clean the entire pavement surface, giving specific attention to accumulated mud and debris. Pressurized water and/or vacuum systems may be required to ensure a clean surface.

**(C) Application of Ultra-thin Bonded Wearing Course**

Produce, transport to the site and place the UBWC in accordance with Section 610, except as otherwise provided below.

Use only one asphalt binder PG grade for the entire project, unless the Engineer gives written approval.

Do not place UBWC between October 31 and April 1 and when the air and surface temperature is less than 60°F.

Apply the UBWC mixture at the rate per square yard as shown in Table 661-2 for the mix type shown in the plans.

Spray the PMEM at a temperature of 140°F to 180°F. Provide a uniform application across the entire width. Use a target application rate of 0.20 gal/sy and adjust according to the mix design, existing pavement type and condition for the specified project, and the manufacturer's recommendations. Ensure the rate of application is approved by the Engineer before beginning work.

Do not allow wheels or other parts of the paving machine to touch the PMEM before the hot mix asphalt concrete wearing course is applied.

Place the hot asphalt concrete wearing course over the full width of the PMEM. Apply the hot mix asphalt concrete at a temperature of 300°F to 330°F and within a maximum of 3 seconds immediately after the application of the membrane.

Before opening to traffic, allow the pavement to sufficiently cool after the rolling operation to resist damage to the pavement.

For the alternate method, use distributor equipment to uniformly place the non-tracking hot applied polymer asphalt tack coat in accordance with Section 605 and shall be applied at a temperature in accordance with the manufacturer's recommendations and at a target residual application rate of  $0.12 \pm 0.02$  gal/sy. For placing the asphalt mix, use of a spray paver is not required.

**(D) Compaction**

Compact the wearing course with at least 2 passes of a steel double drum asphalt roller before the material temperature has fallen below 185°F. Do not allow the rollers to remain stationary on the freshly placed asphalt concrete. Compact immediately following the placement of UBWC. A release agent (added to the water system) may be required to prevent adhesion of the fresh mix to the roller drum and wheels. Compact in the static mode.

**661-5 QUALITY MANAGEMENT SYSTEM FOR ASPHALT PAVEMENTS**

Produce the ultra-thin hot mix asphalt in accordance with Section 609.

**661-6 MEASUREMENT AND PAYMENT**

*Ultra-thin Bonded Wearing Course* will be measured and paid by the actual number of tons of mixture incorporated into the completed and accepted work. The hot mix asphalt pavement will be measured by being weighed in trucks on certified platform scales or other certified weighing devices. Application of Ultra-thin Hot Mix Asphalt shall be included in the per ton pay item for *Ultra-thin Bonded Wearing Course*.

*Polymer Modified Asphalt Binder for Plant Mix* will be paid in accordance with Article 620-4. Asphalt binder price adjustments when applicable will be based on Grade PG 64-22, regardless of the grade used.

Where PG 76-22 is being used in the production of ultra-thin, the grade of asphalt binder to be paid will be PG 70-28, unless otherwise approved.

For the alternate method, *Ultra-thin Bonded Wearing Course* will be measured and paid by the actual number of tons of mixture incorporated into the completed and accepted work. The hot mix asphalt pavement will be measured by being weighed in trucks on certified platform scales or other certified weighing devices. Non-tracking hot-applied polymer (NTHAP) asphalt tack coat shall be included in the per ton pay item for *Ultra-thin Bonded Wearing Course*. No other pay item shall be associated with this alternate method.

The above prices and payments will be full compensation for all work covered by this section including, but not limited to, furnishing all materials, producing, weighing, transporting, placing and compacting the polymer modified asphalt emulsion; maintaining the ultra-thin bonded wearing course until final acceptance of the project; performing QC as specified in the contract; and making any repairs or corrections to the surface of the pavement or adjacent landscape that may become necessary.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Ultra-thin Bonded Wearing Course	Ton

**MATERIALS:**

(2-21-12) (Rev. 11-22-16) 1000, 1002, 1005, 1016, 1018, 1024, 1050, 1074, 1078, 1080, 1081, 1086, 1084, 1087, 1092 SP10 R01

Revise the 2012 *Standard Specifications* as follows:

**Page 10-1, Article 1000-1, DESCRIPTION, lines 9-10**, replace the last sentence of the first paragraph with the following:

Type IL, IP, IS or IT blended cement may be used instead of Portland cement.

**Page 10-1, Article 1000-1, DESCRIPTION, line 14**, add the following:

If any change is made to the mix design, submit a new mix design (with the exception of an approved pozzolan source change).

If any major change is made to the mix design, also submit new test results showing the mix design conforms to the criteria. Define a major change to the mix design as:

- (1) A source change in coarse aggregate, fine aggregate or cement.
- (2) A pozzolan class or type change (e.g. Class F fly ash to Class C fly ash).
- (3) A quantitative change in coarse aggregate (applies to an increase or decrease greater than 5%), fine aggregate (applies to an increase or decrease greater than 5%), water (applies to an increase only), cement (applies to a decrease only), or pozzolan (applies to an increase or decrease greater than 5%).

Use materials which do not produce a mottled appearance through rusting or other staining of the finished concrete surface.

**Page 10-1, Article 1000-2, MATERIALS, line 16; Page 10-8, Subarticle 1000-7(A), Materials, line 8; and Page 10-18, Article 1002-2, MATERIALS, line 9**, add the following to the table of item references:

<b>Item</b>	<b>Section</b>
Type II Blended Cement	1024-1

**Page 10-1, Subarticle 1000-3(A), Composition and Design, lines 25-27**, replace the second paragraph with the following:

Fly ash may be substituted for cement in the mix design up to 30% at a rate of 1.0 lb of fly ash to each pound of cement replaced.

**Page 10-2, Subarticle 1000-3(A), Composition and Design, lines 12-21**, delete the third paragraph through the sixth paragraph beginning with “If any change is made to the mix design, submit...” through “...(applies to a decrease only).”

Page 10-5, Table 1000-1, REQUIREMENTS FOR CONCRETE, replace with the following:

TABLE 1000-1 REQUIREMENTS FOR CONCRETE											
Class of Concrete	Min. Comp. Strength at 28 days	Maximum Water-Cement Ratio				Consistency Max. Slump		Cement Content			
		Air-Entrained Concrete		Non Air- Entrained Concrete		Vibrated	Non- Vibrated	Vibrated		Non- Vibrated	
		Rounded Aggregate	Angular Aggre- gate	Rounded Aggregate	Angular Aggre- gate			Min.	Max.	Min.	Max.
<i>Units</i>	<i>psi</i>					<i>inch</i>	<i>inch</i>	<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>
AA	4,500	0.381	0.426	-	-	3.5	-	639	715	-	-
AA Slip Form	4,500	0.381	0.426	-	-	1.5	-	639	715	-	-
Drilled Pier	4,500	-	-	0.450	0.450	-	5-7 dry 7-9 wet	-	-	640	800
A	3,000	0.488	0.532	0.550	0.594	3.5	4	564	-	602	-
B	2,500	0.488	0.567	0.559	0.630	1.5 machine- placed 2.5 hand- placed	4	508	-	545	-
Sand Light- weight	4,500	-	0.420	-	-	4	-	715	-	-	-
Latex Modified	3,000 7 day	0.400	0.400	-	-	6	-	658	-	-	-
Flowable Fill excavatable	150 max. at 56 days	as needed	as needed	as needed	as needed	-	Flow- able	-	-	40	100
Flowable Fill non- excavatable	125	as needed	as needed	as needed	as needed	-	Flow- able	-	-	100	as needed
Pavement	4,500 design, field 650 flexural, design only	0.559	0.559	-	-	1.5 slip form 3.0 hand place	-	526	-	-	-
Precast	See Table 1077-1	as needed	as needed	-	-	6	as needed	as needed	as needed	as needed	as needed
Prestress	per contract	See Table 1078-1	See Table 1078-1	-	-	8	-	564	as needed	-	-

Page 10-6, Subarticle 1000-4(I), Use of Fly Ash, lines 36-2, replace the first paragraph with the following:

Fly ash may be substituted for cement in the mix design up to 30% at a rate of 1.0 lb of fly ash to each pound of cement replaced. Use Table 1000-1 to determine the maximum allowable water-cementitious material (cement + fly ash) ratio for the classes of concrete listed.

Page 10-7, Table 1000-3, MAXIMUM WATER-CEMENTITIOUS MATERIAL RATIO, delete the table.

**Page 10-7, Article 1000-5, HIGH EARLY STRENGTH PORTLAND CEMENT CONCRETE, lines 30-31,** delete the second sentence of the third paragraph.

**Page 10-19, Article 1002-3, SHOTCRETE FOR TEMPORARY SUPPORT OF EXCAVATIONS, line 30,** add the following at the end of Section 1002:

**(H) Handling and Storing Test Panels**

Notify the Area Materials Engineer when preconstruction or production test panels are made within 24 hours of shooting the panels. Field cure and protect test panels from damage in accordance with ASTM C1140 until the Department transports panels to the Materials and Tests Regional Laboratory for coring.

**Page 10-23, Table 1005-1, AGGREGATE GRADATION-COARSE AGGREGATE**, replace with the following:

<b>TABLE 1005-1 AGGREGATE GRADATION - COARSE AGGREGATE</b>													
<b>Percentage of Total by Weight Passing</b>													
Std. Size #	2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#10	#16	#40	#200	Remarks
4	100	90-100	20-55	0-15	-	0-5	-	-	-	-	-	A	Asphalt Plant Mix
467M	100	95-100	-	35-70	-	0-30	0-5	-	-	-	-	A	Asphalt Plant Mix
5	-	100	90-100	20-55	0-10	0-5	-	-	-	-	-	A	AST, Sediment Control Stone
57	-	100	95-100	-	25-60	-	0-10	0-5	-	-	-	A	AST, Structural Concrete, Shoulder Drain Stone, Sediment Control Stone
57M	-	100	95-100	-	25-45	-	0-10	0-5	-	-	-	A	AST, Concrete Pavement
6M	-	-	100	90-100	20-55	0-20	0-8	-	-	-	-	A	AST
67	-	-	100	90-100	-	20-55	0-10	0-5	-	-	-	A	Asphalt Plant Mix, AST, Structural Concrete
78M	-	-	-	100	98-100	75-100	20-45	0-15	-	-	-	A	Asphalt Plant Mix, AST, Structural Concrete, Weep Hole Drains
14M	-	-	-	-	100	98-100	35-70	5-20	-	0-8	-	A	Asphalt Plant Mix, AST, Structural Concrete, Weep Hole Drains
9M	-	-	-	-	100	98-100	85-100	10-40	-	0-10	-	A	AST
ABC	-	100	75-97	-	55-80	-	35-55	-	25-45	-	14-30	4-12 <sup>B</sup>	Aggregate Base Course, Aggregate Stabilization
ABC(M)	-	100	75-100	-	45-79	-	20-40	-	0-25	-	-	0-12 <sup>B</sup>	Maintenance Stabilization
Light-weight <sup>C</sup>	-	-	-	-	100	80-100	5-40	0-20	-	0-10	-	0-2.5	AST

- A. See Subarticle 1005-4(A).
- B. See Subarticle 1005-4(B).
- C. For Lightweight Aggregate used in Structural Concrete, see Subarticle 1014-2(E)(6).



**Page 10-39, Article 1016-3, CLASSIFICATIONS , lines 27-32, replace with the following:**

Select material is clean, unweathered durable, blasted rock material obtained from an approved source. While no specific gradation is required, the below criteria will be used to evaluate the materials for visual acceptance by the Engineer:

- (A) At least 50% of the rock has a diameter of from 1.5 ft to 3 ft,
- (B) 30% of the rock ranges in size from 2” to 1.5 ft in diameter, and
- (C) Not more than 20% of the rock is less than 2” in diameter. No rippable rock will be permitted.

**Page 10-40, Tables 1018-1 and 1018-2, PIEDMONT, WESTERN AND COASTAL AREA CRITERIA FOR ACCEPTANCE OF BORROW MATERIAL, under second column in both tables, replace second row with the following:**

Acceptable, but not to be used in the top 3 ft of embankment or backfill

**Page 10-46, Article 1024-1, PORTLAND CEMENT, line 33, add the following as the ninth paragraph:**

Use Type IL blended cement that meets AASHTO M 240, except that the limestone content is limited to between 5 and 12% by weight and the constituents shall be interground. Class F fly ash can replace a portion of Type IL blended cement and shall be replaced as outlined in Subarticle 1000-4(I) for Portland cement. For mixes that contain cement with alkali content between 0.6% and 1.0% and for mixes that contain a reactive aggregate documented by the Department, use a pozzolan in the amount shown in Table 1024-1.

**Page 10-46, Table 1024-1, POZZOLANS FOR USE IN PORTLAND CEMENT CONCRETE, replace with the following:**

<b>TABLE 1024-1</b>	
<b>POZZOLANS FOR USE IN PORTLAND CEMENT CONCRETE</b>	
<b>Pozzolan</b>	<b>Rate</b>
Class F Fly Ash	20% - 30% by weight of required cement content with 1.0 lb Class F fly ash per lb of cement replaced
Ground Granulated Blast Furnace Slag	35%-50% by weight of required cement content with 1.0 lb slag per lb of cement replaced
Microsilica	4%-8% by weight of required cement content with 1.0 lb microsilica per lb of cement replaced

**Page 10-47, Subarticle 1024-3(B), Approved Sources, lines 16-18, replace the second sentence of the second paragraph with the following:**

Tests shall be performed by AASHTO's designated National Transportation Product Evaluation Program (NTPEP) laboratory for concrete admixture testing.

**Page 10-65, Article 1050-1, GENERAL, line 41,** replace the first sentence with the following:

All fencing material and accessories shall meet Section 106.

**Page 10-115, Subarticle 1074-7(B), Gray Iron Castings, lines 10-11,** replace the first two sentences with the following:

Supply gray iron castings meeting all facets of AASHTO M 306 excluding proof load. Proof load testing will only be required for new casting designs during the design process, and conformance to M306 loading (40,000 lb.) will be required only when noted on the design documents.

**Page 10-126, Table 1078-1, REQUIREMENTS FOR CONCRETE,** replace with the following:

<b>TABLE 1078-1 REQUIREMENTS FOR CONCRETE</b>		
<b>Property</b>	<b>28 Day Design Compressive Strength 6,000 psi or less</b>	<b>28 Day Design Compressive Strength greater than 6,000 psi</b>
Maximum Water/Cementitious Material Ratio	0.45	0.40
Maximum Slump without HRWR	3.5"	3.5"
Maximum Slump with HRWR	8"	8"
Air Content (upon discharge into forms)	5 + 2%	5 + 2%

**Page 10-151, Article 1080-4, INSPECTION AND SAMPLING, lines 18-22,** replace (B), (C) and (D) with the following:

- (B) At least 3 panels prepared as specified in 5.5.10 of AASHTO M 300, Bullet Hole Immersion Test.
- (C) At least 3 panels of 4"x6"x1/4" for the Elcometer Adhesion Pull Off Test, ASTM D4541.
- (D) A certified test report from an approved independent testing laboratory for the Salt Fog Resistance Test, Cyclic Weathering Resistance Test, and Bullet Hole Immersion Test as specified in AASHTO M 300.
- (E) A certified test report from an approved independent testing laboratory that the product has been tested for slip coefficient and meets AASHTO M253, Class B.

**Page 10-161, Subarticle 1081-1(A), Classifications, lines 29-33**, delete first 3 sentences of the description for Type 2 and replace with the following:

**Type 2** - A low-modulus, general-purpose adhesive used in epoxy mortar repairs. It may be used to patch spalled, cracked or broken concrete where vibration, shock or expansion and contraction are expected.

**Page 10-162, Subarticle 1081-1(A), Classifications, lines 4-7**, delete the second and third sentences of the description for Type 3A. **Lines 16-22**, delete Types 6A, 6B and 6C.

**Page 10-162, Subarticle 1081-1(B), Requirements, lines 26-30**, replace the second paragraph with the following:

For epoxy resin systems used for embedding dowel bars, threaded rods, rebar, anchor bolts and other fixtures in hardened concrete, the manufacturer shall submit test results showing that the bonding system will obtain 125% of the specified required yield strength of the fixture. Furnish certification that, for the particular bolt grade, diameter and embedment depth required, the anchor system will not fail by adhesive failure and that there is no movement of the anchor bolt. For certification and anchorage, use 3,000 psi as the minimum Portland cement concrete compressive strength used in this test. Use adhesives that meet Section 1081.

List the properties of the adhesive on the container and include density, minimum and maximum temperature application, setting time, shelf life, pot life, shear strength and compressive strength.

Page 10-163, Table 1081-1, PROPERTIES OF MIXED EPOXY RESIN SYSTEMS, replace with the following:

<b>TABLE 1081-1 PROPERTIES OF MIXED EPOXY RESIN SYSTEMS</b>							
Property	Type 1	Type 2	Type 3	Type 3A	Type 4A	Type 4B	Type 5
Viscosity-Poises at 77°F ± 2°F	Gel	10-30	25-75	Gel	40-150	40-150	1-6
Spindle No.	-	3	4	--	4	4	2
Speed (RPM)	-	20	20	--	10	10	50
Pot Life (Minutes)	20-50	30-60	20-50	5-50	40-80	40-80	20-60
Minimum Tensile Strength at 7 days (psi)	1,500	2,000	4,000	4,000	1,500	1,500	4,000
Tensile Elongation at 7 days (%)	30 min.	30 min.	2-5	2-5	5-15	5-15	2-5
Min. Compressive Strength of 2" mortar cubes at 24 hours	3,000 (Neat)	4,000-	6,000-	6,000 (Neat)	3,000	3,000	6,000
Min. Compressive Strength of 2" mortar cubes at 7 days	5,000 (Neat)	-	-	-	-	5,000	-
Maximum Water Absorption (%)	1.5	1.0	1.0	1.5	1.0	1.0	1.0
Min. Bond Strength Slant Shear Test at 14 days (psi)	1,500	1,500	2,000	2,000	1,500	1,500	1,500

Page 10-164, Subarticle 1081-1(E), Prequalification, lines 31-33, replace the second sentence of the first paragraph with the following:

Manufacturers choosing to supply material for Department jobs must submit an application through the Value Management Unit with the following information for each type and brand name:

**Page 10-164, Subarticle 1081-1(E)(3), line 37**, replace with the following:

(3) Type of the material in accordance with Articles 1081-1 and 1081-4,

**Page 10-165, Subarticle 1081-1(E)(6), line 1**, in the first sentence of the first paragraph replace “AASHTO M 237” with “the specifications”.

**Page 10-165, Subarticle 1081-1(E), Prequalification, line 9-10**, delete the second sentence of the last paragraph.

**Page 10-165, Subarticle 1081-1(F), Acceptance, line 14**, in the first sentence of the first paragraph replace “Type 1” with “Type 3”.

**Page 10-169, Subarticle 1081-3(G), Anchor Bolt Adhesives**, delete this subarticle.

**Page 10-170, Article 1081-3, HOT BITUMEN, line 9**, add the following at the end of Section 1081:

### **1081-4 EPOXY RESIN ADHESIVE FOR BONDING TRAFFIC MARKINGS**

#### **(A) General**

This section covers epoxy resin adhesive for bonding traffic markers to pavement surfaces.

#### **(B) Classification**

The types of epoxies and their uses are as shown below:

**Type I** – Rapid Setting, High Viscosity, Epoxy Adhesive. This type of adhesive provides rapid adherence to traffic markers to the surface of pavement.

**Type II** – Standard Setting, High Viscosity, Epoxy Adhesive. This type of adhesive is recommended for adherence of traffic markers to pavement surfaces when rapid set is not required.

**Type III** – Rapid Setting, Low Viscosity, Water Resistant, Epoxy Adhesive. This type of rapid setting adhesive, due to its low viscosity, is appropriate only for use with embedded traffic markers.

**Type IV** – Standard Set Epoxy for Blade Deflecting-Type Plowable Markers.

#### **(C) Requirements**

Epoxies shall conform to the requirements set forth in AASHTO M 237.

#### **(D) Prequalification**

Refer to Subarticle 1081-1(E).

#### **(E) Acceptance**

Refer to Subarticle 1081-1(F).

**Page 10-173, Article 1084-2, STEEL SHEET PILES, lines 37-38**, replace first paragraph with the following:

Steel sheet piles detailed for permanent applications shall be hot rolled and meet ASTM A572 or ASTM A690 unless otherwise required by the plans. Steel sheet piles shall be coated as required

by the plans. Galvanized sheet piles shall be coated in accordance with Section 1076. Metallized sheet piles shall be metallized in accordance to the Project Special Provision “Thermal Sprayed Coatings (Metallization)” with an 8 mil, 99.9% aluminum alloy coating and a 0.5 mil seal coating. Any portion of the metallized sheet piling encased in concrete shall receive a barrier coat. The barrier coat shall be an approved waterborne coating with a low-viscosity which readily absorbs into the pores of the aluminum thermal sprayed coating. The waterborne coating shall be applied at a spreading rate that results in a theoretical 1.5 mil dry film thickness. The manufacturer shall issue a letter of certification that the resin chemistry of the waterborne coating is compatible with the 99.9% aluminum thermal sprayed alloy and suitable for tidal water applications.

**Page 10-174, Subarticle 1086-1(B)(1), Epoxy, lines 18-24,** replace with the following:

The epoxy shall meet Article 1081-4.

The 2 types of epoxy adhesive which may be used are Type I, Rapid Setting, and Type II, Standard Setting. Use Type II when the pavement temperature is above 60°F or per the manufacturer’s recommendations whichever is more stringent. Use Type I when the pavement temperature is between 50°F and 60°F or per the manufacturer’s recommendations whichever is more stringent. Epoxy adhesive Type I, Cold Set, may be used to attach temporary pavement markers to the pavement surface when the pavement temperature is between 32°F and 50°F or per the manufacturer’s recommendations whichever is more stringent.

**Page 10-175, Subarticle 1086-2(E), Epoxy Adhesives, line 27,** replace “Section 1081” with “Article 1081-4”.

**Page 10-177, Subarticle 1086-3(E), Epoxy Adhesives, line 22,** replace “Section 1081” with “Article 1081-4”.

**Page 10-179, Subarticle 1087-4(A), Composition, lines 39-41,** replace the third paragraph with the following:

All intermixed and drop-on glass beads shall not contain more than 75 ppm arsenic or 200 ppm lead.

**Page 10-180, Subarticle 1087-4(B), Physical Characteristics, line 8,** replace the second paragraph with the following:

All intermixed and drop-on glass beads shall comply with NCGS § 136-30.2 and 23 USC § 109(r).

**Page 10-181, Subarticle 1087-7(A), Intermixed and Drop-on Glass Beads, line 24,** add the following after the first paragraph:

Use X-ray Fluorescence for the normal sampling procedure for intermixed and drop-on beads, without crushing, to check for any levels of arsenic and lead. If any arsenic or lead is detected, the sample shall be crushed and repeat the test using X-ray Fluorescence. If the X-ray Fluorescence test shows more than a LOD of 5 ppm, test the beads using United States Environmental Protection Agency Method 6010B, 6010C or 3052 for no more than 75 ppm arsenic or 200 ppm lead.

**SHOULDER AND SLOPE BORROW:**

(3-19-13)

1019

SP10 R10

Use soil in accordance with Section 1019 of the *2012 Standard Specifications*. Use soil consisting of loose, friable, sandy material with a PI greater than 6 and less than 25 and a pH ranging from 5.5 to 7.0.

Soil with a pH ranging from 4.0 to 5.5 will be accepted without further testing if additional limestone is provided in accordance with the application rates shown in Table 1019-1A. Soil type is identified during the soil analysis. Soils with a pH above 7.0 require acidic amendments to be added. Submit proposed acidic amendments to the Engineer for review and approval. Soils with a pH below 4.0 or that do not meet the PI requirements shall not be used.

<b>pH TEST RESULT</b>	<b>Sandy Soils Additional Rate (lbs. / Acre)</b>	<b>Silt Loam Soils Additional Rate (lbs. / Acre)</b>	<b>Clay Loam Soils Additional Rate (lbs. / Acre)</b>
4.0 - 4.4	1,000	4,000	6,000
4.5 - 4.9	500	3,000	5,000
5.0 - 5.4	NA	2,000	4,000

Note: Limestone application rates shown in this table are in addition to the standard rate of 4000 lbs. / acre required for seeding and mulching.

No direct payment will be made for providing additional lime or acidic amendments for Ph adjustment.

**GROUT PRODUCTION AND DELIVERY:**

(3-17-15)

1003

SP10 R20

Revise the *2012 Standard Specifications* as follows:

Replace Section 1003 with the following:

**SECTION 1003  
GROUT PRODUCTION AND DELIVERY**

**1003-1 DESCRIPTION**

This section addresses cement grout to be used for structures, foundations, retaining walls, concrete barriers, embankments, pavements and other applications in accordance with the contract. Produce non-metallic grout composed of Portland cement and water and at the Contractor's option or as required, aggregate and pozzolans. Include chemical admixtures as required or needed. Provide sand cement or neat cement grout as required. Define "sand cement grout" as grout with only fine aggregate and "neat cement grout" as grout without aggregate.

The types of grout with their typical uses are as shown below:

**Type 1** – A cement grout with only a 3-day strength requirement and a fluid consistency that is typically used for filling subsurface voids.

**Type 2** – A nonshrink grout with strength, height change and flow conforming to ASTM C1107 that is typically used for foundations, ground anchors and soil nails.

**Type 3** – A nonshrink grout with high early strength and freeze-thaw durability requirements that is typically used in pile blockouts, grout pockets, shear keys, dowel holes and recesses for concrete barriers and structures.

**Type 4** – A neat cement grout with low strength, a fluid consistency and high fly ash content that is typically used for slab jacking.

**Type 5** – A low slump, low mobility sand cement grout with minimal strength that is typically used for compaction grouting.

### **1003-2 MATERIALS**

Refer to Division 10.

<b>Item</b>	<b>Section</b>
Chemical Admixtures	1024-3
Fine Aggregate	1014-1
Fly Ash	1024-5
Ground Granulated Blast Furnace Slag	1024-6
Portland Cement	1024-1
Silica Fume	1024-7
Water	1024-4

Do not use grout that contains soluble chlorides or more than 1% soluble sulfate. At the Contractor's option, use an approved packaged grout instead of the materials above except for water. Use packaged grouts that are on the NCDOT Approved Products List.

Use admixtures for grout that are on the NCDOT Approved Products List or other admixtures in accordance with Subarticle 1024-3(E) except do not use concrete additives or unclassified or other admixtures in Type 4 or 5 grout. Use Class F fly ash for Type 4 grout and Type II Portland cement for Type 5 grout.

Use well graded rounded aggregate with a gradation, liquid limit (LL) and plasticity index (PI) that meet Table 1003-1 for Type 5 grout. Fly ash may be substituted for a portion of the fines in the aggregate. Do not use any other pozzolans in Type 5 grout.



**TABLE 1003-1  
AGGREGATE REQUIREMENTS FOR TYPE 5 GROUT**

<b>Gradation</b>		<b>Maximum Liquid Limit</b>	<b>Maximum Plasticity Index</b>
<b>Sieve Designation per AASHTO M 92</b>	<b>Percentage Passing (% by weight)</b>		
3/8"	100	N/A	N/A
No. 4	70 – 95		
No. 8	50 – 90		
No. 16	30 – 80		
No. 30	25 – 70		
No. 50	20 – 50		
No. 100	15 – 40		
No. 200	10 – 30	25	10

### **1003-3 COMPOSITION AND DESIGN**

When using an approved packaged grout, a grout mix design submittal is not required. Otherwise, submit proposed grout mix designs for each grout mix to be used in the work. Mixes for all grout shall be designed by a Certified Concrete Mix Design Technician or an Engineer licensed by the State of North Carolina. Mix proportions shall be determined by a testing laboratory approved by the Department. Base grout mix designs on laboratory trial batches that meet Table 1003-2 and this section. With permission, the Contractor may use a quantity of chemical admixture within the range shown on the current list of approved admixtures maintained by the Materials and Tests Unit.

Submit grout mix designs in terms of saturated surface dry weights on Materials and Tests Form 312U at least 35 days before proposed use. Adjust batch proportions to compensate for surface moisture contained in the aggregates at the time of batching. Changes in the saturated surface dry mix proportions will not be permitted unless revised grout mix designs have been submitted to the Engineer and approved.

Accompany Materials and Tests Form 312U with a listing of laboratory test results of compressive strength, density and flow or slump and if applicable, aggregate gradation, durability and height change. List the compressive strength of at least three 2" cubes at the age of 3 and 28 days.

The Engineer will review the grout mix design for compliance with the contract and notify the Contractor as to its acceptability. Do not use a grout mix until written notice has been received. Acceptance of the grout mix design or use of approved packaged grouts does not relieve the Contractor of his responsibility to furnish a product that meets the contract. Upon written request from the Contractor, a grout mix design accepted and used satisfactorily on any Department project may be accepted for use on other projects.

Perform laboratory tests in accordance with the following test procedures:

<b>Property</b>	<b>Test Method</b>
Aggregate Gradation <sup>A</sup>	AASHTO T 27
Compressive Strength	AASHTO T 106
Density (Unit Weight)	AASHTO T 121, AASHTO T 133 <sup>B</sup> , ANSI/API RP <sup>C</sup> 13B-1 <sup>B</sup> (Section 4, Mud Balance)
Durability	AASHTO T 161 <sup>D</sup>
Flow	ASTM C939 (Flow Cone)
Height Change	ASTM C1090 <sup>E</sup>
Slump	AASHTO T 119

- A.** Applicable to grout with aggregate.
- B.** Applicable to Neat Cement Grout.
- C.** American National Standards Institute/American Petroleum Institute Recommended Practice.
- D.** Procedure A (Rapid Freezing and Thawing in Water) required.
- E.** Moist room storage required.

#### **1003-4 GROUT REQUIREMENTS**

Provide grout types in accordance with the contract. Use grouts with properties that meet Table 1003-2. The compressive strength of the grout will be considered the average compressive strength test results of three 2" cubes at each age. Make cubes that meet AASHTO T 106 from the grout delivered for the work or mixed on-site. Make cubes at such frequencies as the Engineer may determine and cure them in accordance with AASHTO T 106.

Type of Grout	Minimum Compressive Strength at		Height Change at 28 days	Flow <sup>A</sup> /Slump <sup>B</sup>	Minimum Durability Factor
	3 days	28 days			
1	3,000 psi	–	–	10 – 30 sec	–
2	Table 1 <sup>C</sup>		–	Fluid Consistency <sup>C</sup>	–
3	5,000 psi	–	0 – 0.2%	Per Accepted Grout Mix Design/ Approved Packaged Grout	80
4 <sup>D</sup>	600 psi	1,500 psi	–	10 – 26 sec	–
5	–	500 psi	–	1 – 3"	–

A. Applicable to Type 1 through 4 grouts.

B. Applicable to Type 5 grout.

C. ASTM C1107.

D. Use Type 4 grout with proportions by volume of 1 part cement and 3 parts fly ash.

### 1003-5 TEMPERATURE REQUIREMENTS

When using an approved packaged grout, follow the manufacturer's instructions for grout and air temperature at the time of placement. Otherwise, the grout temperature at the time of placement shall be not less than 50°F nor more than 90°F. Do not place grout when the air temperature measured at the location of the grouting operation in the shade away from artificial heat is below 40°F.

### 1003-6 ELAPSED TIME FOR PLACING GROUT

Agitate grout continuously before placement. Regulate the delivery so the maximum interval between the placing of batches at the work site does not exceed 20 minutes. Place grout before exceeding the times in Table 1003-3. Measure the elapsed time as the time between adding the mixing water to the grout mix and placing the grout.

Air or Grout Temperature, Whichever is Higher	Maximum Elapsed Time	
	No Retarding Admixture Used	Retarding Admixture Used
90°F or above	30 minutes	1 hr. 15 minutes
80°F through 89°F	45 minutes	1 hr. 30 minutes
79°F or below	60 minutes	1 hr. 45 minutes

**1003-7 MIXING AND DELIVERY**

Use grout free of any lumps and undispersed cement. When using an approved packaged grout, mix grout in accordance with the manufacturer's instructions. Otherwise, comply with Articles 1000-8 through 1000-12 to the extent applicable for grout instead of concrete.

**GEOSYNTHETICS:**

(2-16-16)

1056

SP10 R25

Revise the *2012 Standard Specifications* as follows:

Replace Section 1056 with the following:

**SECTION 1056  
GEOSYNTHETICS****1056-1 DESCRIPTION**

Provide geosynthetics for subsurface drainage, separation, stabilization, reinforcement, erosion control, filtration and other applications in accordance with the contract. Use geotextiles, geocomposite drains and geocells that are on the NCDOT Approved Products List. Prefabricated geocomposite drains include sheet, strip and vertical drains (PVDs), i.e., "wick drains" consisting of a geotextile attached to and/or encapsulating a plastic drainage core. Geocells are comprised of ultrasonically welded polymer strips that when expanded form a 3D honeycomb grid that is typically filled with material to support vegetation.

If necessary or required, hold geotextiles and sheet drains in place with new wire staples, i.e., "sod staples" that meet Subarticle 1060-8(D) or new anchor pins. Use steel anchor pins with a diameter of at least 3/16" and a length of at least 18" and with a point at one end and a head at the other end that will retain a steel washer with an outside diameter of at least 1.5".

**1056-2 HANDLING AND STORING**

Load, transport, unload and store geosynthetics so geosynthetics are kept clean and free of damage. Label, ship and store geosynthetics in accordance with Section 7 of AASHTO M 288. Geosynthetics with defects, flaws, deterioration or damage will be rejected. Do not unwrap geosynthetics until just before installation. Do not leave geosynthetics exposed for more than 7 days before covering except for geosynthetics for temporary wall faces and erosion control.

**1056-3 CERTIFICATIONS**

Provide Type 1, Type 2 or Type 4 material certifications in accordance with Article 106-3 for geosynthetics. Define "minimum average roll value" (MARV) in accordance with ASTM D4439. Provide certifications with MARV for geosynthetic properties as required. Test geosynthetics using laboratories accredited by the Geosynthetic Accreditation Institute (GAI) to perform the required test methods. Sample geosynthetics in accordance with ASTM D4354.

**1056-4 GEOTEXTILES**

When required, sew geotextiles together in accordance with Article X1.1.4 of AASHTO M 288. Provide sewn seams with seam strengths meeting the required strengths for the geotextile type and class specified.

Provide geotextile types and classes in accordance with the contract. Geotextiles will be identified by the product name printed directly on the geotextile. When geotextiles are not marked with a product name or marked with only a manufacturing plant identification code, geotextiles will be identified by product labels attached to the geotextile wrapping. When identification is based on labels instead of markings, unwrap geotextiles just before use in the presence of the Engineer to confirm that the product labels on both ends of the outside of the geotextile outer wrapping match the labels affixed to both ends of the inside of the geotextile roll core. Partial geotextile rolls without the product name printed on the geotextile or product labels affixed to the geotextile roll core may not be used.

Use woven or nonwoven geotextiles with properties that meet Table 1056-1. Define “machine direction” (MD) and “cross-machine direction” (CD) in accordance with ASTM D4439.

<b>TABLE 1056-1 GEOTEXTILE REQUIREMENTS</b>						
<b>Property</b>	<b>Requirement</b>					<b>Test Method</b>
	<b>Type 1</b>	<b>Type 2</b>	<b>Type 3<sup>A</sup></b>	<b>Type 4</b>	<b>Type 5<sup>B</sup></b>	
<i>Typical Application</i>	<i>Shoulder Drains</i>	<i>Under Rip Rap</i>	<i>Silt Fence Fabric</i>	<i>Soil Stabilization</i>	<i>Temporary Walls</i>	
Elongation (MD & CD)	≥ 50%	≥ 50%	≤ 25%	< 50%	< 50%	ASTM D4632
Grab Strength (MD & CD)	Table 1 <sup>D</sup> , Class 3	Table 1 <sup>D</sup> , Class 1	100 lb <sup>C</sup>	Table 1 <sup>D</sup> , Class 3	–	ASTM D4632
Tear Strength (MD & CD)			–			ASTM D4533
Puncture Strength			–			ASTM D6241
Ultimate Tensile Strength (MD & CD)	–	–	–	–	2,400 lb/ft <sup>C</sup> (unless required otherwise in the contract)	ASTM D4595
Permittivity	Table 2 <sup>D</sup> , 15% to 50% <i>in Situ</i> Soil Passing 0.075 mm	Table 6 <sup>D</sup> , 15% to 50% <i>in Situ</i> Soil Passing 0.075mm	Table 7 <sup>D</sup>	Table 5 <sup>D</sup>	0.20 sec <sup>-1.C</sup>	ASTM D4491
Apparent Opening Size					0.60 mm <sup>E</sup>	ASTM D4751
UV Stability (Retained Strength)					70% <sup>C</sup> (after 500 hr of exposure)	ASTM D4355

- A.** Minimum roll width of 36" required.  
**B.** Minimum roll width of 13 ft required.  
**C.** MARV per Article 1056-3.  
**D.** AASHTO M 288.  
**E.** Maximum average roll value.

**1056-5 GEOCOMPOSITE DRAINS**

Provide geocomposite drain types in accordance with the contract and with properties that meet Table 1056-2.

<b>TABLE 1056-2 GEOCOMPOSITE DRAIN REQUIREMENTS</b>				
<b>Property</b>	<b>Requirement</b>			<b>Test Method</b>
	<b>Sheet Drain</b>	<b>Strip Drain</b>	<b>Wick Drain</b>	
Width	≥ 12" (unless required otherwise in the contract)	12" ±1/4"	4" ±1/4"	N/A
In-Plane Flow Rate <sup>A</sup> (with gradient of 1.0 and 24-hour seating period)	6 gpm/ft @ applied normal compressive stress of 10 psi	15 gpm/ft @ applied normal compressive stress of 7.26 psi	1.5 gpm <sup>B</sup> @ applied normal compressive stress of 40 psi	ASTM D4716

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

**B.** Per 4" drain width.

For sheet and strip drains, use accessories (e.g., pipe outlets, connectors, fittings, etc.) recommended by the Drain Manufacturer. Provide sheet and strip drains with Type 1 geotextiles heat bonded or glued to HDPE, polypropylene or high impact polystyrene drainage cores that meet Table 1056-3.

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

For wick drains with a geotextile wrapped around a corrugated drainage core and seamed to itself, use drainage cores with an ultimate tensile strength of at least 225 lb per 4" width in accordance with ASTM D4595 and geotextiles with properties that meet Table 1056-4.

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

**A.** AASHTO M 288.

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

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

### **1056-6 GEOCELLS**

Geocells will be identified by product labels attached to the geocell wrapping. Unwrap geocells just before use in the presence of the Engineer. Previously opened geocell products will be rejected.

Manufacture geocells from virgin polyethylene resin with no more than 10% rework, also called "regrind", materials. Use geocells made from textured and perforated HDPE strips with an open area of 10% to 20% and properties that meet Table 1056-5.



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

**A.** Environmental Stress Crack Resistance.

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

**C.** US Army Corps of Engineers.

Provide geocell accessories (e.g., stakes, pins, clips, staples, rings, tendons, anchors, deadmen, etc.) recommended by the Geocell Manufacturer.

**TRUCK MOUNTED CHANGEABLE MESSAGE SIGNS:**

(8-21-12)

1101.02

SP11 R10

Revise the *2012 Roadway Standard Drawings* as follows:

**Drawing No. 1101.02, Sheet 12, TEMPORARY LANE CLOSURES**, replace General Note #11 with the following:

11- TRUCK MOUNTED CHANGEABLE MESSAGE SIGNS (TMCMS) USED ON SHADOW VEHICLES FOR "IN LANE" ACTIVITIES SHALL BE A MINIMUM OF 43" X 73". THE DISPLAY PANEL SHALL HAVE FULL MATRIX CAPABILITY WITH THE CAPABILITY TO PROVIDE 2 MESSAGE LINES WITH 7 CHARACTERS PER LINE WITH A MINIMUM CHARACTER HEIGHT OF 18". FOR ADDITIONAL MESSAGING, CONTACT THE WORK ZONE TRAFFIC CONTROL SECTION.

12- TMCMS USED FOR ADVANCED WARNING ON VEHICLES LOCATED ON THE SHOULDER MAY BE SMALLER THAN 43" X 73". THE DISPLAY PANEL SHALL HAVE THE CAPABILITY TO PROVIDE 2 MESSAGE LINES WITH 7 CHARACTERS PER LINE WITH A MINIMUM CHARACTER HEIGHT OF 18". FOR ADDITIONAL MESSAGING, CONTACT THE WORK ZONE TRAFFIC CONTROL SECTION.

**Drawing No. 1101.02, Sheet 13, TEMPORARY LANE CLOSURES**, replace General Note #12 with the following:

12- TRUCK MOUNTED CHANGEABLE MESSAGE SIGNS (TMCMS) USED ON SHADOW VEHICLES FOR "IN LANE" ACTIVITIES SHALL BE A MINIMUM OF 43" X 73". THE DISPLAY PANEL SHALL HAVE FULL MATRIX CAPABILITY WITH THE CAPABILITY TO PROVIDE 2 MESSAGE LINES WITH 7 CHARACTERS PER LINE WITH A MINIMUM CHARACTER HEIGHT OF 18". FOR ADDITIONAL MESSAGING, CONTACT THE WORK ZONE TRAFFIC CONTROL SECTION.

13- TMCMS USED FOR ADVANCED WARNING ON VEHICLES LOCATED ON THE SHOULDER MAY BE SMALLER THAN 43" X 73". THE DISPLAY PANEL SHALL HAVE THE CAPABILITY TO PROVIDE 2 MESSAGE LINES WITH 7 CHARACTERS PER LINE WITH A MINIMUM CHARACTER HEIGHT OF 18". FOR ADDITIONAL MESSAGING, CONTACT THE WORK ZONE TRAFFIC CONTROL SECTION.

### **REMOVAL OF EXISTING SNOWPLOWABLE PAVEMENT MARKERS**

The Contractor's attention is directed to the fact that there are snowplowable pavement markers on this project. Remove and dispose of these markers prior to the paving operation.

No direct payment will be made for this work, as it will be incidental to the other items in this contract.

### **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" 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.

**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(E) of the *2012 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:

<b><u>Restricted Noxious Weed</u></b>	<b><u>Limitations per Lb. Of Seed</u></b>	<b><u>Restricted Noxious Weed</u></b>	<b><u>Limitations per Lb. of Seed</u></b>
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  
Crownvetch  
Pensacola Bahiagrass  
Creeping Red Fescue

Japanese Millet  
Reed Canary Grass  
Zoysia

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

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

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

(1-17-12) (Rev. 04-21-15)

Z-4

Revise the 2012 *Standard Specifications* as follows:

**Division 2**

**Page 2-7, line 31, Article 215-2 Construction Methods**, replace “Article 107-26” with “Article 107-25”.

**Page 2-17, Article 226-3, Measurement and Payment, line 2**, delete “pipe culverts,”.

**Page 2-20, Subarticle 230-4(B), Contractor Furnished Sources, change references as follows:**  
**Line 1**, replace “(4) Buffer Zone” with “(c) Buffer Zone”; **Line 12**, replace “(5) Evaluation for Potential Wetlands and Endangered Species” with “(d) Evaluation for Potential Wetlands and Endangered Species”; and **Line 33**, replace “(6) Approval” with “(4) Approval”.

**Division 3**

**Page 3-1, after line 15, Article 300-2 Materials**, replace “1032-9(F)” with “1032-6(F)”.

**Division 4**

**Page 4-77, line 27, Subarticle 452-3(C) Concrete Coping**, replace “sheet pile” with “reinforcement”.

**Division 6**

**Page 6-7, line 31, Article 609-3 Field Verification of Mixture and Job Mix Formula Adjustments**, replace “30” with “45”.

**Page 6-10, line 42, Subarticle 609-6(C)(2)**, replace “Subarticle 609-6(E)” with “Subarticle 609-6(D)”.

**Page 6-11, Table 609-1 Control Limits**, replace “Max. Spec. Limit” for the Target Source of  $P_{0.075}/P_{be}$  Ratio with “1.0”.

**Page 6-40, Article 650-2 Materials**, replace “Subarticle 1012-1(F)” with “Subarticle 1012-1(E)”

**Division 7**

**Page 7-1, Article 700-3, CONCRETE HAULING EQUIPMENT**, line 33, replace “competition” with “completion”.

**Division 8**

**Page 8-23, line 10, Article 838-2 Materials**, replace “Portland Cement Concrete, Class B” with “Portland Cement Concrete, Class A”.

**Division 10**

**Page 10-166, Article 1081-3 Hot Bitumen**, replace “Table 1081-16” with “Table 1081-2”, replace “Table 1081-17” with “Table 1081-3”, and replace “Table 1081-18” with “Table 1081-4”.



**Division 12**

**Page 12-7, Table 1205-3**, add “FOR THERMOPLASTIC” to the end of the title.

**Page 12-8, Subarticle 1205-5(B), line 13**, replace “Table 1205-2” with “Table 1205-4”.

**Page 12-8, Table 1205-4 and 1205-5**, replace “THERMOPLASTIC” in the title of these tables with “POLYUREA”.

**Page 12-9, Subarticle 1205-6(B), line 21**, replace “Table 1205-4” with “Table 1205-6”.

**Page 12-11, Subarticle 1205-8(C), line 25**, replace “Table 1205-5” with “Table 1205-7”.

**Division 15**

**Page 15-4, Subarticle 1505-3(F) Backfilling, line 26**, replace “Subarticle 235-4(C)” with “Subarticle 235-3(C)”.

**Page 15-6, Subarticle 1510-3(B), after line 21**, replace the allowable leakage formula with the following:  $W=LD\sqrt{P} \div 148,000$

**Page 15-6, Subarticle 1510-3(B), line 32**, delete “may be performed concurrently or” and replace with “shall be performed”.

**Page 15-17, Subarticle 1540-3(E), line 27**, delete “Type 1”.

**Division 17**

**Page 17-26, line 42, Subarticle 1731-3(D) Termination and Splicing within Interconnect Center**, delete this subarticle.

Revise the *2012 Roadway Standard Drawings* as follows:

**1633.01 Sheet 1 of 1, English Standard Drawing for Matting Installation**, replace “1633.01” with “1631.01”.

**STANDARD SPECIAL PROVISION****PLANT AND PEST QUARANTINES****(Imported Fire Ant, Gypsy Moth, Witchweed, And Other Noxious Weeds)**

(3-18-03) (Rev. 10-15-13)

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, 919-733-6932, or <http://www.ncagr.gov/plantind/> 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 or other noxious weeds.

**STANDARD SPECIAL PROVISION****AWARD OF CONTRACT**

(6-28-77)(Rev 2/16/2016)

Z-6

“The North Carolina Department of Transportation, in accordance with the provisions of *Title VI of the Civil Rights Act of 1964* (78 Stat. 252) and the Regulations of the Department of Transportation (*49 C.F.R., Part 21*), issued pursuant to such act, hereby notifies all bidders that it will affirmatively insure that the contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination on the ground of race, color, or national origin”.

**TITLE VI AND NONDISCRIMINATION****I. Title VI Assurance**

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:

**(1) Compliance with Regulations:** The contractor shall comply with the Regulation relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

**(2) 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 either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

**(3) 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 Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

**(4) Information and Reports:** The contractor shall provide all information and reports required by the Regulations or 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 North Carolina Department of Transportation (NCDOT) or the Federal Highway Administration (FHWA) to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the NCDOT, or the FHWA as appropriate, and shall set forth what efforts it has made to obtain the information.

**(5) Sanctions for Noncompliance:** In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the NCDOT shall impose such contract sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:

- (a) Withholding of payments to the contractor under the contract until the contractor complies, and/or
- (b) Cancellation, termination or suspension of the contract, in whole or in part.

**(6) Incorporation of Provisions:** The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto.

The contractor shall take such action with respect to any subcontractor procurement as the NCDOT or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance: provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the NCDOT to enter into such litigation to protect the interests of the NCDOT, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

## **II. Title VI Nondiscrimination Program**

Title VI of the 1964 Civil Rights Act, 42 U.S.C. 2000d, provides that: "No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." The broader application of nondiscrimination law is found in other statutes, executive orders, and regulations (see Section III, Pertinent Nondiscrimination Authorities), which provide additional protections based on age, sex, disability and religion. In addition, the 1987 Civil Rights Restoration Act extends nondiscrimination coverage to all programs and activities of federal-aid recipients and contractors, including those that are not federally-funded.

### *Nondiscrimination Assurance*

The North Carolina Department of Transportation (NCDOT) hereby gives assurance that no person shall on the ground of race, color, national origin, sex, age, and disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity conducted by the recipient, as provided by Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, and any other related Civil Rights authorities, whether those programs and activities are federally funded or not.

### *Obligation*

During the performance of this contract, the Contractor and its subcontractors are responsible for complying with NCDOT's Title VI Program. The Contractor must ensure that NCDOT's Notice of Nondiscrimination is posted in conspicuous locations accessible to all employees and subcontractors on the jobsite, along with the Contractor's own Equal Employment Opportunity (EEO) Policy Statement. The Contractor shall physically incorporate this "**TITLE VI AND NONDISCRIMINATION**" language, in its entirety, into all its subcontracts on federally-assisted and state-funded NCDOT-owned projects, and ensure its inclusion by subcontractors into all subsequent lower tier subcontracts. The Contractor and its subcontractors shall also physically incorporate the **FHWA-1273**, in its entirety, into all subcontracts and subsequent lower tier subcontracts on Federal-aid highway construction contracts only. The Contractor is also

responsible for making its subcontractors aware of NCDOT's Discrimination Complaints Process, as follows:

### FILING OF COMPLAINTS

1. **Applicability** – These complaint procedures apply to the beneficiaries of the NCDOT's programs, activities, and services, including, but not limited to, members of the public, contractors, subcontractors, consultants, and other sub-recipients of federal and state funds.
2. **Eligibility** – Any person or class of persons who believes he/she has been subjected to discrimination or retaliation prohibited by any of the Civil Rights authorities, based upon race, color, sex, age, national origin, or disability, may file a written complaint with NCDOT's Civil Rights office. The law prohibits intimidation or retaliation of any sort. The complaint may be filed by the affected individual or a representative, and must be in writing.
3. **Time Limits and Filing Options** – A complaint must be filed no later than 180 calendar days after the following:
  - The date of the alleged act of discrimination; or
  - The date when the person(s) became aware of the alleged discrimination; or
  - 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 other discrimination complaints may be submitted to the following entities:

- **North Carolina Department of Transportation**, Office of Equal Opportunity & Workforce Services (EOWS), External Civil Rights Section, 1511 Mail Service Center, Raleigh, NC 27699-1511; 919-508-1808 or toll free 800-522-0453
  - **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
    - Federal Highway Administration**, North Carolina Division Office, 310 New Bern Avenue, Suite 410, Raleigh, NC 27601, 919-747-7010
    - Federal Highway Administration**, Office of Civil Rights, 1200 New Jersey Avenue, SE, 8<sup>th</sup> Floor, E81-314, Washington, DC 20590, 202-366-0693 / 366-0752
    - Federal Transit Administration**, Office of Civil Rights, ATTN: Title VI Program Coordinator, East Bldg. 5<sup>th</sup> Floor – TCR, 1200 New Jersey Avenue, SE, Washington, DC 20590
    - Federal Aviation Administration**, Office of Civil Rights, 800 Independence Avenue, SW, Washington, DC 20591, 202-267-3258
  - **US Department of Justice**, Special Litigation Section, Civil Rights Division, 950 Pennsylvania Avenue, NW, Washington, DC 20530, 202-514-6255 or toll free 877-218-5228
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 EOWS at the phone number above 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, sex, age, or disability. The term “basis” refers to the complainant’s membership in a protected group category. Contact this office to receive a Discrimination Complaint Form.

Protected Categories	Definition	Examples	Applicable Statutes and Regulations	
			FHWA	FTA
Race	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	Title VI of the Civil Rights Act of 1964; 49 CFR Part 21; Circular 4702.1B
Color	Color of skin, including shade of skin within a racial group	Black, White, brown, yellow, etc.		
National Origin	Place of birth. Citizenship is not a factor. Discrimination based on language or a person’s accent is also covered.	Mexican, Cuban, Japanese, Vietnamese, Chinese		
Sex	Gender	Women and Men	1973 Federal-Aid Highway Act	Title IX of the Education Amendments of 1972
Age	Persons of any age	21 year old person	Age Discrimination Act of 1975	
Disability	Physical or mental impairment, permanent or temporary, or perceived.	Blind, alcoholic, paraplegic, epileptic, diabetic, arthritic	Section 504 of the Rehabilitation Act of 1973; Americans with Disabilities Act of 1990	

### **III. 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:

- 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.
- 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);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- 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;

- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- 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);
- 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);
- 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;
- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures discrimination 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;
- 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);
- 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.*).
- 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);
- 49 CFR Part 26, regulation to ensure nondiscrimination in the award and administration of DOT-assisted contracts in the Department's highway, transit, and airport financial assistance programs, as regards the use of Disadvantaged Business Enterprises (DBEs);
- Form FHWA-1273, “Required Contract Provisions,” a collection of contract provisions and proposal notices that are generally applicable to *all Federal-aid construction projects* and must be made a part of, and physically incorporated into, *all federally-assisted contracts*, as well as appropriate subcontracts and purchase orders, particularly Sections II (Nondiscrimination) and III (Nonsegregated Facilities).

**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 or the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the executive Order and the regulations in *41 CFR Part 60-4*. Compliance with the goals will be measured against the total work hours performed.

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



**EMPLOYMENT GOALS FOR MINORITY  
AND FEMALE PARTICIPATION**

Economic Areas

**Area 023 29.7%**

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

**Area 024 31.7%**

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

**Area 025 23.5%**

Columbus County  
Duplin County  
Onslow County  
Pender County

**Area 026 33.5%**

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

**Area 027 24.7%**

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

**Area 028 15.5%**

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

**Area 029 15.7%**

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

**Area 0480 8.5%**

Buncombe County  
Madison County

**Area 030 6.3%**

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

SMSA Areas

Area 5720 26.6%

Currituck County

Area 9200 20.7%

Brunswick County

New Hanover County

Area 2560 24.2%

Cumberland County

Area 6640 22.8%

Durham County

Orange County

Wake County

Area 1300 16.2%

Alamance County

Area 3120 16.4%

Davidson County

Forsyth County

Guilford County

Randolph County

Stokes County

Yadkin County

Area 1520 18.3%

Gaston County

Mecklenburg County

Union County

---

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:
- 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.
  - 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.
  - 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.
  - 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 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**

**NAME CHANGE FOR NCDENR**

(1-19-16)

Z-11

**Description**

Wherever in the 2012 Standard Specifications, Project Special Provisions, Standard Special Provisions, Permits or Plans that reference is made to “NCDENR” or “North Carolina Department of Environment and Natural Resources”, replace with “NCDEQ” or “North Carolina Department of Environmental Quality” respectively, as the case may be.

**STANDARD SPECIAL PROVISION**  
**MINIMUM WAGES**  
**GENERAL DECISION NC160101 01/08/2016 NC101**

Z-101

Date: January 8, 2016

General Decision Number: NC160101 01/08/2016 NC101

Superseded General Decision Numbers: NC20150101

State: North Carolina

Construction Type: HIGHWAY

**COUNTIES:**

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

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

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of \$10.15 for calendar year 2016 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is 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 \$10.15 (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 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number  
0

Publication Date  
01/08/2016

SUNC2014-003 11/14/2014

	Rates	Fringes
BLASTER	18.64	
CARPENTER	13.68	.05
CEMENT MASON/CONCRETE FINISHER	13.93	
ELECTRICIAN		
Electrician	18.79	2.72
Telecommunications Technician	15.19	1.25
IRONWORKER	13.30	
LABORER		
Asphalt Raker and Spreader	12.78	
Asphalt Screed/Jackman	14.50	



	Rates	Fringes
Carpenter Tender	12.51	.27
Cement Mason/Concrete Finisher Tender	11.04	
Common or General	10.40	.01
Guardrail/Fence Installer	13.22	
Pipelayer	12.43	
Traffic Signal/Lighting Installer	15.65	.24
<b>PAINTER</b>		
Bridge	23.77	
<b>POWER EQUIPMENT OPERATORS</b>		
Asphalt Broom Tractor	10.00	
Bulldozer Fine	16.13	
Bulldozer Rough	14.36	
Concrete Grinder/Groover	17.92	
Crane Boom Trucks	18.19	
Crane Other	19.83	
Crane Rough/All-Terrain	19.10	
Drill Operator Rock	14.28	
Drill Operator Structure	20.89	
Excavator Fine	16.95	
Excavator Rough	13.63	
Grader/Blade Fine	19.84	
Grader/Blade Rough	15.47	
Loader 2 Cubic Yards or Less	13.31	
Loader Greater Than 2 Cubic Yards	16.19	
Material Transfer Vehicle (Shuttle Buggy)	15.44	
Mechanic	17.51	
Milling Machine	15.22	
Off-Road Hauler/Water Tanker	11.83	
Oiler/Greaser	14.16	
Pavement Marking Equipment	12.05	
Paver Asphalt	15.97	
Paver Concrete	18.20	
Roller Asphalt Breakdown	12.79	
Roller Asphalt Finish	13.76	
Roller Other	12.08	
Scraper Finish	12.65	
Scraper Rough	11.50	
Slip Form Machine	19.60	
Tack Truck/Distributor Operator	14.82	
<b>TRUCK DRIVER</b>		
GVWR of 26,000 Lbs or Less	11.45	
GVWR of 26,000 Lbs or Greater	13.57	.03

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

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 Project Special Provisions

### LAW ENFORCEMENT:

(02/06/13)

#### Description

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

#### Construction Methods

Use uniformed Law Enforcement Officers and marked Law Enforcement vehicles equipped with blue lights mounted on top of the vehicle, and Law Enforcement vehicle emblems to direct or control traffic as required by the plans or by the Engineer.

#### Measurement and Payment

Law Enforcement will be measured and paid for in the actual number of hours that each Law Enforcement Officer is provided during the life of the project as approved by the Engineer. There will be no direct payment for marked Law Enforcement vehicles as they are considered incidental to the pay item.

Payment will be made under:

Pay Item	Pay Unit
Law Enforcement	Hour

DocuSigned by:  
*Steve Kite*  
E27CE30E1DFC442...

10/22/2014



# EC-1

## **STABILIZATION REQUIREMENTS:**

(5-1-15)

S-3

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

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

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

## **SEEDING AND MULCHING:**

(West)

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

### Shoulder and Median Areas

#### **August 1 - June 1**

20#	Kentucky Bluegrass
75#	Hard Fescue
25#	Rye Grain
500#	Fertilizer
4000#	Limestone

#### **May 1 - September 1**

20#	Kentucky Bluegrass
75#	Hard Fescue
10#	German or Browntop Millet
500#	Fertilizer
4000#	Limestone

### Areas Beyond the Mowing Pattern, Waste and Borrow Areas:

#### **August 1 - June 1**

100#	Tall Fescue
15#	Kentucky Bluegrass
30#	Hard Fescue
25#	Rye Grain
500#	Fertilizer
4000#	Limestone

#### **May 1 - September 1**

100#	Tall Fescue
15#	Kentucky Bluegrass
30#	Hard Fescue
10#	German or Browntop Millet
500#	Fertilizer
4000#	Limestone

## EC-2

### Approved Tall Fescue Cultivars

06 Dust	Escalade	Justice	Scorpion
2 <sup>nd</sup> Millennium	Essential	Kalahari	Serengeti
3 <sup>rd</sup> Millennium	Evergreen 2	Kentucky 31*	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	

**\*Note: Kentucky 31 will no longer be an approved NCDOT Tall Fescue Cultivar after December 31, 2015.**

## EC-3

### Approved Kentucky Bluegrass Cultivars:

4-Season	Blue Velvet	Gladstone	Quantum Leap
Alexa II	Blueberry	Granite	Rambo
America	Boomerang	Hampton	Rhapsody
Apollo	Brilliant	Harmonie	Rhythm
Arcadia	Cabernet	Impact	Rita
Aries	Champagne	Jefferson	Royce
Armada	Champlain	Juliet	Rubicon
Arrow	Chicago II	Jump Start	Rugby II
Arrowhead	Corsair	Keeneland	Shiraz
Aura	Courtyard	Langara	Showcase
Avid	Delight	Liberator	Skye
Award	Diva	Madison	Solar Eclipse
Awesome	Dynamo	Mercury	Sonoma
Bandera	Eagleton	Midnight	Sorbonne
Barduke	Emblem	Midnight II	Starburst
Barnique	Empire	Moon Shadow	Sudden Impact
Baroness	Envicta	Moonlight SLT	Total Eclipse
Barrister	Everest	Mystere	Touche
Barvette HGT	Everglade	Nu Destiny	Tsunami
Bedazzled	Excursion	NuChicago	Unique
Belissimo	Freedom II	NuGlade	Valor
Bewitched	Freedom III	Odyssey	Voyager II
Beyond	Front Page	Perfection	Washington
Blacksburg II	Futurity	Pinot	Zinfandel
Blackstone	Gaelic	Princeton 105	
Blue Note	Ginney II	Prosperity	

### Approved Hard Fescue Cultivars:

Aurora II	Eureka II	Oxford	Scaldis II
Aurora Gold	Firefly	Reliant II	Spartan II
Berkshire	Granite	Reliant IV	Stonehenge
Bighorn GT	Heron	Rescue 911	
Chariot	Nordic	Rhino	

On cut and fill slopes 2:1 or steeper add 20# Sericea Lespedeza January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

## **WATTLES WITH POLYACRYLAMIDE (PAM):**

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

1060,1630,1631

T2

### **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, PAM application, and removing wattles.

### **Materials**

Wattle shall meet the following specifications:

100% Curled Wood(Excelsior) Fibers	
Minimum Diameter	12 in.
Minimum Density	2.5 lb/ft <sup>3</sup> +/- 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 in. x 2 in. nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving down into the underlying soil.

Matting shall meet the requirements of Article 1060-8 of the *2012 Standard Specifications*, or shall meet specifications provided elsewhere in this contract.

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

Polyacrylamide (PAM) shall be applied in powder form and shall be anionic or neutrally charged. Soil samples shall be obtained in areas where the wattles will be placed, and from offsite material used to construct the roadway, and analyzed for the appropriate PAM flocculant to be utilized with each wattle. The PAM product used shall be listed on the North Carolina Department of Environment and Natural Resources (NCDENR) Division of Water Quality (DWQ) web site as an approved PAM product for use in North Carolina.

### **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



## EC-5

detail. Install a minimum of 2 stakes on the upstream side of the wattle according to the detail provided in the plans. Stakes shall be driven into the ground a minimum of 10 in. with no more than 2 in. projecting from the top of the wattle. Drive stakes at an angle according to the detail provided in the plans.

Only install wattle(s) to a height in ditch so flow will not wash around wattle and scour ditch slopes and according to the detail provided in the plans and as directed. Overlap adjoining sections of wattles a minimum of 6 in.

Installation of matting shall be in accordance with the detail provided in the plans, and in accordance with Article 1631-3 of the *2012 Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

Apply PAM over the lower center portion of the wattle where the water is going to flow over at a rate of 2 ounces per wattle, and 1 ounce of PAM on matting on each side of the wattle. PAM applications shall be done during construction activities after every rainfall event that is equal to or exceeds 0.50 in.

The Contractor shall maintain the 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 *2012 Standard Specifications*.

### Measurement and Payment

*Wattles* will be measured and paid for by the actual number of linear feet of wattles which are installed and accepted. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Wattles*.

Matting will be measured and paid for in accordance with Article 1631-4 of the *2012 Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

*Polyacrylamide (PAM)* will be measured and paid for by the actual weight in pounds of PAM applied to the wattles. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to apply the *Polyacrylamide (PAM)*.

Payment will be made under:

#### Pay Item

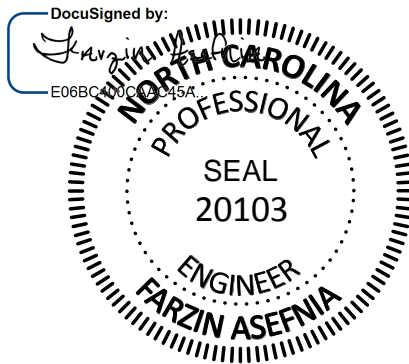
Polyacrylamide (PAM)  
Wattle

#### Pay Unit

Pound  
Linear Foot

**Project Special Provisions  
Structures  
Table of Contents**

Scope of Work		-----	BP-2
Concrete Deck Repair for Epoxy Overlay	(12-12-13)	-----	BP-2
Epoxy Overlay System- Mechanically Distributed	(SPECIAL)	-----	BP-3
Bridge Joint Demolition	(SPECIAL)	-----	BP-8
Foam Joint Seals	(9-27-12)	-----	BP-9
Elastomeric Concrete	(SPECIAL)	-----	BP-12
Grout for Structures	(9-30-11)	-----	BP-15
Submittal of Working Drawings	(6-9-15)	-----	BP-16
Falsework and Formwork	(4-5-12)	-----	BP-22
Crane Safety	(8-15-05)	-----	BP-28



7/28/2016

**SCOPE OF WORK**

This work shall consist of furnishing all labor, equipment, and materials to overlay the existing bridge decks with epoxy overlay system as directed in the plans. Work includes: portable lighting, existing bridge deck surface preparation, shot blasting, overlaying the prepared bridge deck with epoxy overlay system, replacing foam joint seals and elastomeric concrete, disposal of waste material, pavement markings, 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 bridge at the following location:

Mecklenburg County Bridge #919 – on I-485 NBL over SR 2808  
Mecklenburg County Bridge #920 – on I-485 SBL over SR 2808  
Mecklenburg County Bridge #922 – on I-485 NBL over Reedy Creek  
Mecklenburg County Bridge #923 – on I-485 SBL over Reedy Creek

Contractor shall provide all necessary access; underdeck platforms, scaffolding, ladders, etc., 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 2012, except as otherwise specified herein.

**CONCRETE DECK REPAIR FOR EPOXY OVERLAY****(12-12-13)****1.0 GENERAL**

This provision addresses concrete deck repairs prior to placing an epoxy overlay. Work shall begin within 60 days of notification. After surface preparation, the Engineer sounds the deck using a chain drag or other acceptable means and marks areas to be repaired.

**2.0 MATERIALS**

Concrete deck repair material shall be epoxy based material with a minimum modulus of elasticity of 2500 ksi. The repair material must be on the NCDOT Approved Product List (APL) and recommended by the manufacturer for use with an epoxy overlay system. Materials containing cement mortar are acceptable; however, a 28 day curing period will be required before placing the epoxy overlay. The curing period may be adjusted if approved by the epoxy overlay manufacturer and the Engineer. Submit the proposed repair material and schedule of repairs to the Engineer for approval prior to beginning the work.

**3.0 CLASS II SURFACE PREPARATION (PARTIAL DEPTH)**

Saw cut a perimeter surrounding the repair to a depth not less than 1 inch and remove all loose, unsound and contaminated material by chipping with hand tools to an average depth

of approximately one-half the deck thickness, but no less than 3/4 inch below the top mat of steel. Clean, repair or replace rusted or loose reinforcing steel. Care shall be taken not to cut, stretch, or damage any exposed reinforcing steel. Thoroughly clean the newly exposed surface. Use a bonding agent in accordance with the manufacturer's recommendations.

#### **4.0 APPLICATION**

Refill areas where concrete is removed with repair material up to the finished deck surface and cure in accordance with the material manufacturer's recommendations. Provide a raked finish.

#### **5.0 MEASUREMENT & PAYMENT**

*Concrete Deck Repair for Epoxy Overlay* will be measured and paid for at the contract unit price per square feet for the appropriate areas repaired. The price shall include materials, labor, equipment, tools and any incidentals necessary to complete the work.

Payment will be made under:

**Pay Item**

Concrete Deck Repair for Epoxy Overlay

**Pay Unit**

Square Feet

### **EPOXY OVERLAY SYSTEM- MECHANICALLY DISTRIBUTED**

**(SPECIAL)**

#### **1.0 GENERAL**

This work shall consist of furnishing and mechanically distributing an epoxy overlay system, over the concrete bridge deck in accordance with the contract documents and consists of a minimum of two (2) layers of hybrid polymer resins with a special blend of extremely hard aggregate designed to provide a 3/8 inch thick overlay for the purpose of crack treatment, complete waterproofing, and providing a non-skid surface. The overlay system shall be formulated and applied to withstand continuous heavy traffic, extreme changes in weather conditions, and deformations due to structure loading and temperature changes.

#### **2.0 PERFORMANCE GUARANTEE**

The Contractor shall provide a warranty bond to the Department, guaranteeing the wearing surface for a period of 36 months against the following defects: delamination of the epoxy overlay to the bridge surface, and skid resistance less than 40 as measured by AASHTO T242. The performance bond will be invoked if 25 square feet of the deck surface meets the defect criteria prior to the end of the warranty. The guarantee period will start on the date of Department final acceptance of the project. At the end of the warranty period, the performance bond will be invoked if any part of deck surface meets the defect criteria, regardless of quantity.

The Contractor shall replace defective materials and workmanship at no cost to the Department. The Contractor will not be responsible for damage due to normal wear and tear, negligence on the part of the Department, or use in excess of the design.

The warranty bond shall be for the total bid price of the installed material. Calculate the total bid price by using the bid quantity of epoxy overlay and the statewide average unit bid price for the epoxy overlay. The warranty period of 36 months and bond value shall be specified in the warranty bond provided to the Department prior to final acceptance of the project.

### 3.0 MATERIALS

This two-part epoxy polymer overlay system shall be on the NCDOT Approved Products List (APL) and be free of any fillers or volatile solvents and shall be formulated to provide a simple volumetric mixing ratio of two components such as one to one or two to one by volume. The epoxy overlay system shall be formulated to provide flexibility in the system without any sacrifice of the hardness, chemical resistance or strength of the system. Use of external/conventional flexibilizers will not be accepted. Flexibility shall be by interaction of elastomers which chemically link during the process of curing so the flexibility of the molecule is least affected during the low temperature conditions that are confronted in actual use.

#### Epoxy

When the two component system is mixed at the appropriate ratio, the cured resin shall conform to the following requirements:

<b>EPOXY PROPERTIES</b>		
<b>Property</b>	<b>Requirement</b>	<b>Test Method</b>
Viscosity-Poises at 77°F ± 2°F	7-25	ASTM D2393 (Spindle No.3 at 20 rpm)
Pot Life	15-45 minutes @ 75° F	ASTM C881
Min. Tensile Strength at 7 days	2000 psi	ASTM D638
Tensile Elongation at 7 days	30-70%	ASTM D638
Min. Compressive Strength @ 3 hrs.	1,000 psi	ASTM C109
Min. Compressive Strength @ 24 hrs.	5000 psi	ASTM C109
Min. adhesion strength @ 24 hrs.	250 psi @ 75° F	ASTM C1583
Max. Water Absorption	1%	ASTM D570

#### Aggregate

Aggregate used for all layers shall be non-friable, non-polishing, clean and free from surface moisture. The aggregate shall be flint rock, 100% fractured, thoroughly washed and kiln dried to a maximum moisture content of 0.2% by weight, measured in accordance with ASTM C566. The fracture requirements shall be at least one mechanically fractured face and will apply to

materials retained on a U.S. No. 10 sieve. Aggregate shall conform to the following requirements:

<b>AGGREGATE PROPERTIES</b>		
<b>Property</b>	<b>Value</b>	<b>Test Method</b>
Moisture Content, max.	0.2% by weight	AASHTO T255
Mohs Hardness, min.	7	
Soundness Loss, 5 cycles in Sodium Sulfate, max.	5.4%	AASHTO T104
Micro-Deval, max.	10%	AASHTO TP58

<b>AGGREGATE GRADATION</b>	
<b>Sieve</b>	<b>Percent Passing</b>
No. 4	100
No. 8	30-75
No. 16	Max. 5
No. 30	Max. 1

#### **4.0 SURFACE PREPARATION**

Remove all existing overlays if applicable, and all loose, disintegrated, unsound or contaminated concrete from the bridge deck. Prepare the bridge deck prior to applying the overlay system, in accordance with the manufacturer's recommendations, the special provision *Concrete Deck Repair for Epoxy Overlay*, and this provision.

Prior to overlay placement and upon completion of the deck repairs, clean the entire deck surface by steel shot blasting and other means to remove asphaltic material, oils, dirt, rubber, curing compounds, pavement markings, paint carbonation, laitance, weak surface mortar and other materials that may interfere with the bonding or curing of the overlay. Do not begin shotblasting until all grinding or milling operations are completed. Use sandblasting equipment on areas that cannot be reached by the shotblasting operation. If expansion joints are not being replaced or have been replaced prior to shotblasting they shall be protected from damage from the shotblasting operation. Pavement markings shall be considered clean when the concrete has exposed aggregate showing through the paint stripe. Deck drains and areas of curb or railing above the proposed surface shall be protected from the shotblasting operation. Mortar that is soundly bonded to the coarse aggregate shall have open pores to be considered adequate for bond. Provide a self-propelled vacuum capable of picking up dust and other loose material from the shotblasting operation. Provide air compressors equipped with oil/water separator capable of drying all moisture from the bridge deck. Care shall be taken and methods used to fully capture and collect the excess material.

Prior to overlay placement and upon completion of surface preparation, perform bond testing of the epoxy overlay material in accordance with ASTM C1583 on two pre-selected 3' x 3' test patches. Test locations will be determined by the Engineer. The tensile rupture strength shall be at least 250 psi or the depth of failure into the concrete deck shall be 1/4" or greater over a

minimum of 50% of the location area. Install test sections with the same materials, equipment, personnel, timing and sequence of operations and curing time that will be used for the installation of the overlay.

If the cleaning method, materials and installation procedure do not produce acceptable test results, the contractor must remove failed test patches, make the necessary adjustments, and retest all patches at no additional cost to the Department until satisfactory test results are obtained.

Test locations shall be removed to the original concrete substrate prior to placement of the deck overlay.

Epoxy based overlays shall not be placed on hydraulic cement concrete that is less than 28 days old. Patching and cleaning operations shall be inspected and approved prior to placing each layer of the overlay. Any contamination of the deck or intermediate courses, after initial cleaning, shall be removed.

The deck shall be completely dry at the time of application of the epoxy concrete overlay. Deck drains shall be closed off during application of epoxy overlay.

## 5.0 EQUIPMENT

Equipment shall consist of no less than an epoxy distribution system, aggregate spreader, application squeegee, vacuum truck, and a source of lighting if work is to be performed at night. The distribution system shall accurately measure and mix the epoxy resin and hardening agent, and shall uniformly and accurately apply the epoxy materials at the specified rate to the bridge deck in such a manner as to cover 100% of the work area. The aggregate spreader shall be propelled in such a manner as to uniformly and accurately apply the aggregate to cover 100% of the epoxy material. Aggregate shall be sprinkled or dropped vertically in a manner such that the level of the epoxy mixture is not disturbed. The vacuum truck shall be self-propelled.

## 6.0 APPLICATION

Handling and mixing of the epoxy resin and hardening agent shall be performed in a safe manner to achieve the desired result in accordance with the manufacturer's recommendations as approved and as directed by the Engineer. Epoxy overlay materials shall not be placed when weather or surface conditions are such that the material cannot be properly handled, placed, spread and cured within the specified requirements of traffic control.

The application rates of the liquid and stone in the 2 layers shall be as recommended by the manufacturer, but not less than the following rate of application.

<b>TABLE 4</b>		
<b>APPLICATION RATES</b>		
<b>Course</b>	<b>Min. Epoxy Rate (Gal./100 SF)</b>	<b>Min. Aggregate Rate (Lbs./Sq.Yd)</b>
1	2.5	10
2	5	14

The final overlay thickness shall be a minimum of 3/8". Once the epoxy mixture has been prepared, immediately and uniformly applied it to the surface of the bridge deck. There shall be no longitudinal joints of the epoxy overlay in the wheel path. The temperature of the bridge deck surface and all epoxy and aggregate components shall be 60°F or above at the time of application. Epoxy shall not be applied if the air temperature is expected to drop below 55°F within 8 hours after application or if air temperatures would cause the gel time to be less than 10 minutes. Consult with the manufacturer when placing overlay at temperatures above 90°F. The dry aggregate shall be applied in such a manner as to completely cover the epoxy mixture so that no wet spots appear and before it begins to gel. First course applications that do not receive enough aggregate prior to gel shall be removed and replaced. A second course insufficiently covered with aggregate may be left in place, but will require additional applications before opening to traffic. After each course is fully cured, all loose aggregate shall be removed by vacuuming or brooming. Traffic shall not be allowed on the first course of the overlay. Traffic and equipment shall not be permitted on the overlay surface during the curing period. The minimum curing periods shall be as follows:

**Course: Average temperature of deck, epoxy and aggregate components in °F**

	60-64	65-69	70-74	75-79	80-84	85+
Course 1	4 hrs.	3 hrs.	2.5 hrs.	2 hrs.	1.5 hrs.	1 hr.
Course 2	6.5 hrs.*	5 hrs.	4 hrs.	3 hrs.	3 hrs.	3 hrs.

\*Course 2 shall be cured for 8 hrs. if the air temperature drops below 60°F during the curing period.

The Contractor shall plan and execute the work to provide the curing periods as specified herein, or manufacturer proposed curing periods may be submitted to the Engineer for review and approval.

Do not apply epoxy overlay courses over modular joints, metal expansion joints, or foam joint seals. A bond breaker shall be placed on all expansion joints.

In the event the Contractor's operation damages the epoxy overlay, the Contractor shall remove the damaged areas by saw-cutting in rectangular sections to the top of the concrete deck surface and replacing the various courses in accordance with this Specification at no additional cost to the Department.

Prior to acceptance, perform one bond test on each span or every 300 square yards, whichever is smaller, in accordance with ASTM C1583 on 3' x 3' test patches. Test locations will be determined by the Engineer. The tensile rupture strength test results shall be at least 250 psi, or the depth of failure into the concrete deck shall be 1/4" or greater over a minimum of 50% of the test location area. Unacceptable test results will require removal and replacement of overlay as directed by the Engineer at no cost to the Department. Test locations shall be repaired with approved repair materials.

## 7.0 MEASUREMENT & PAYMENT



*Epoxy Overlay System-Mechanically Distributed* will be measured and paid for at the contract unit price per square feet. The price shall include surface preparation, furnishing and placing the overlay system by means of mechanical distribution, providing a 36 month warranty bond, all tools, labor, materials, bond strength testing and any incidentals necessary to complete the work.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Epoxy Overlay System-Mechanically Distributed	Square Feet

### **BRIDGE JOINT DEMOLITION**

**(SPECIAL)**

#### **DESCRIPTION**

This provision addresses the removal of existing joint material and adjacent concrete to facilitate the installation of new bridge joints at the locations noted in the contract plans.

#### **EQUIPMENT**

Use the following surface preparation equipment:

- Sawing equipment capable of sawing concrete to a specified depth.
- Power driven hand tools for removal of concrete are required that meet the following requirements:

Pneumatic hammers weighing a nominal 15 lbs (7 kg) or less.

Pneumatic hammer chisel-type bits that do not exceed the diameter of the shaft in width.

- Hand tools such as hammers and chisels for removal of final particles of concrete.

#### **REMOVAL AND PREPARATION**

Prior to any construction, take the necessary precautions to ensure debris from joint construction is not allowed to fall below the bridge deck.

Remove existing joint material by methods approved by the Engineer. Provide a 1” deep saw cut around the perimeter of areas noted for bridge deck removal.

Remove by chipping with hand tools concrete adjacent to the joint to the limits shown on the contract plans. Use a small chipping hammer (15 lb. class) to prepare the edges of the repair area to limit micro fractures. In addition, all loose and unsound concrete shall be removed.

In overhangs, removing concrete areas greater than 0.60 ft<sup>2</sup>/ft length of bridge will require overhang support. Submit the overhang support method to the Engineer for approval.

Care shall be taken not to cut, stretch, or damage any exposed reinforcing steel. Dispose of the removed concrete.

If the condition of the concrete is such that deep spalls or sheer faces result, notify the Engineer for the proper course of action.

Clean, repair or replace rusted or loose reinforcing steel. Thoroughly clean the newly exposed surface to be free of all grease, oil, curing compounds, acids, dirt, or loose debris.

### **MEASUREMENT AND PAYMENT**

*Bridge Joint Demolition* will be measured and paid for at the contract unit price bid per square foot and will be full compensation for removal, containment and disposal of existing joint material and concrete and shall include the cost of labor, tools, equipment and incidentals necessary to complete the work.

<b>Pay Item</b>	<b>Pay Unit</b>
Bridge Joint Demolition	Square Feet

### **FOAM JOINT SEALS**

**(9-27-12)**

#### **1.0 SEALS**

Use preformed seals compatible with concrete and resistant to abrasion, oxidation, oils, gasoline, salt and other materials that are spilled on or applied to the surface. Use a resilient, UV stable, preformed, impermeable, flexible, expansion joint seal. The joint seal shall consist of low-density, closed cell, cross-linked polyethylene non-extrudable, foam. The joint seal shall contain no EVA (Ethylene Vinyl Acetate). Cell generation shall be achieved by being physically blown using nitrogen. No chemical blowing agents shall be used in the cell generation process.

Use seals manufactured with grooves 1/8"± wide by 1/8"± deep and spaced between 1/4" and 1/2" apart along the bond surface running the length of the joint. Use seals with a depth that meets the manufacturer's recommendation, but is not less than 70% of the uncompressed width. Provide a seal designed so that, when compressed, the center portion of the top does not extend upward above the original height of the seal by more than 1/4". Provide a seal that has a working range of 30% tension and 60% compression and meets the requirements given below.

TEST	TEST METHOD	REQUIREMENT
Tensile strength	ASTM D3575-08, Suffix T	110 – 130 psi
Compression Set	ASTM D1056	10% - 16%

	Suffix B, 2 hr recovery	
Water Absorption	ASTM D3575	< 0.03 lb/ft <sup>2</sup>
Elongation at Break	ASTM D3575	180% - 210%
Tear Strength	ASTM D624 (D3575-08, Suffix G)	14 – 20 pli
Density	ASTM D3575-08, Suffix W, Method A	1.8 – 2.2 lb/ft <sup>3</sup>
Toxicity	ISO-10993.5	Pass (not cytotoxic)

Have the top of the joint seal clearly shop marked. Inspect the joint seals upon receipt to ensure that the marks are clearly visible before installation.

## 2.0 BONDING ADHESIVE

Use a two component, 100% solid, modified epoxy adhesive supplied by the joint seal manufacturer that meets the requirements given below.

TEST	TEST METHOD	REQUIREMENT
Tensile strength	ASTM D638	3000 psi (min.)
Compressive strength	ASTM D695	7000 psi (min.)
Hardness	Shore D Scale	75-85 psi
Water Absorption	ASTM D570	0.25% by weight max.
Elongation to Break	ASTM D638	5% (max.)
Bond Strength	ASTM C882	2000 psi (min.)

Use an adhesive that is workable to 40°F. When installing in ambient air or surface temperatures below 40°F or for application on moist, difficult to dry concrete surfaces, use an adhesive specified by the manufacturer of the joint seal.

## 3.0 SAWING THE JOINT

The joint opening shall be initially formed to the width shown on the plans including the breakout for the elastomeric concrete.

The elastomeric concrete shall have sufficient time to cure such that no damage can occur to the elastomeric concrete prior to sawing to the final width and depth as specified in the plans.

When sawing the joint to receive the foam seal, always use a rigid guide to control the saw in the desired direction. To control the saw and to produce a straight line as indicated on the plans, anchor and positively connect a template or a track to the bridge deck. Do not saw the joint by visual means such as a chalk line. Fill the holes used for holding the template or track to the deck with an approved, flowable non-shrink, non-metallic grout.

Saw cut to the desired width and depth in one or two passes of the saw by placing and spacing two metal blades on the saw shaft to the desired width for the joint opening.

The desired depth is the depth of the seal plus 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 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.

#### **4.0 PREPARATION OF SAWED JOINT FOR SEAL INSTALLATION**

The elastomeric concrete shall cure a minimum of 24 hours prior to seal installation.

After sawing the joint, the Engineer will thoroughly inspect the sawed joint opening for spalls, popouts, cracks, etc. All necessary repairs will be made by the Contractor prior to blast cleaning and installing the seal.

Clean the joints by sandblasting with clean dry sand immediately before placing the bonding agent. Sandblast the joint opening to provide a firm, clean joint surface free of curing compound, loose material and any foreign matter. Sandblast the joint opening without causing pitting or uneven surfaces. The aggregate in the elastomeric concrete may be exposed after sandblasting.

After blasting, either brush the surface with clean brushes made of hair, bristle or fiber, blow the surface with compressed air, or vacuum the surface until all traces of blast products and abrasives are removed from the surface, pockets, and corners.

If nozzle blasting is used to clean the joint opening, use compressed air that does not contain detrimental amounts of water or oil.

Examine the blast cleaned surface and remove any traces of oil, grease or smudge deposited in the cleaning operations.

Bond the seal to the blast cleaned surface on the same day the surface is blast cleaned.

#### **5.0 SEAL INSTALLATION**

Install the joint seal according to the manufacturer's procedures and recommendations and as recommended below. Do not install the joint seal if the ambient air or surface temperature is below 45°F. Have a manufacturer's certified trained factory representative present during the installation of the first seal of the project.

Before installing the joint seal, check the uninstalled seal length to insure the seal is the same length as the deck opening. When the joint seal requires splicing, use the heat welding method by placing the joint material ends against a teflon heating iron of 425-475°F for 7 - 10 seconds, then pressing the ends together tightly. Do not test the welding until the material has completely cooled.

Begin installation by protecting the top edges of the concrete deck adjacent to the vertical walls of the joint as a means to minimize clean up. After opening both cans of the bonding agent, stir each can using separate stirring rods for each component to prevent premature curing of the bonding agent. Pour the two components, at the specified mixing ratio, into a clean mixing bucket. Mix the components with a low speed drill (400 rpm max.) until a uniform gray color is achieved without visible marbling. Apply bonding agent to both sides of the elastomeric concrete as well as both sides of the joint seal, making certain to completely fill the grooves with epoxy. With gloved hands, compress the joint seal and with the help of a blunt probe, push the seal into the joint opening until the seal is recessed approximately 1/4" below the surface. When pushing down on the joint seal, apply pressure only in a downward direction. Do not push the joint seal into the joint opening at an angle that would stretch the material. Seals that are stretched during installation shall be removed and rejected. Once work on placing a seal begins, do not stop until it is completed. Clean the excess epoxy from the top of the joint seal immediately with a trowel. Do not use solvents or any cleaners to remove the excess epoxy from the top of the seal. Remove the protective cover at the joint edges and check for any excess epoxy on the surface. Remove excess epoxy with a trowel, the use of solvents or any cleaners will not be allowed.

The installed system shall be watertight and will be monitored until final inspection and approval. Do not place pavement markings on top of foam joint seals.

## 6.0 BASIS OF PAYMENT

Payment for all foam joint seals will be at the lump sum contract price bid for "Foam Joint Seals". Prices and payment will be full compensation for furnishing all material, labor, tools and equipment necessary for installing these units in place and accepted.

## ELASTOMERIC CONCRETE

(SPECIAL)

### 1.0 DESCRIPTION

Elastomeric concrete is a mixture of a two-part polymer consisting of polyurethane and/or epoxy and kiln-dried aggregate. Provide an elastomeric concrete and binder system that is preapproved. Use the concrete in the blocked out areas on both sides of the bridge deck joints as indicated on the plans.

### 2.0 MATERIALS

Provide materials that comply with the following minimum requirements at 14 days (or at the end of the specified curing time).

ELASTOMERIC CONCRETE PROPERTIES	TEST METHOD	MINIMUM REQUIREMENT
Compressive Strength, psi	ASTM D695	2000

5% Deflection Resilience	ASTM D695	95
Splitting Tensile Strength, psi	ASTM D3967	625
Bond Strength to Concrete, psi	ASTM D882 (D882M)	450
Durometer Hardness	ASTM D2240	50

<b>BINDER PROPERTIES (without aggregate)</b>	<b>TEST METHOD</b>	<b>MINIMUM REQUIREMENT</b>
Tensile Strength, psi	ASTM D638	1000
Ultimate Elongation	ASTM D638	150%
Tear Resistance, lb/in	ASTM D624	200

In addition to the requirements above, the elastomeric concrete must be resistant to water, chemical, UV and ozone exposure and withstand temperature extremes. Elastomeric concrete systems requiring preheated aggregates are not allowed.

### **3.0 PREQUALIFICATION**

Manufacturers of elastomeric concrete materials shall submit samples (including aggregate, primer and binder materials) and a Type 3 certification in accordance with Article 106-3 of the Standard Specifications for prequalification to:

North Carolina Department of Transportation  
Materials and Tests Unit  
1801 Blue Ridge Road  
Raleigh, NC 27607

Prequalification will be determined for the system. Individual components will not be evaluated, nor will individual components of previously evaluated systems be deemed prequalified for use.

The submitted binder (a minimum volume of 1 gallon) and corresponding aggregate samples will be evaluated for compliance with the Materials requirements specified above. Systems satisfying all of the Materials requirements will be prequalified for a one year period. Before the end of this period new product samples shall be resubmitted for prequalification evaluation.

If, at any time, any formulation or component modifications are made to a prequalified system that system will no longer be approved for use.

### **4.0 INSTALLATION**

The elastomeric concrete shall not be placed until the reinforced concrete deck slab has cured for seven full days and reached a minimum strength of 3000 psi.

Provide a manufacturer's representative at the bridge site during the installation of the elastomeric concrete to ensure that all steps being performed comply with all manufacturer installation requirements including, but not limited to weather conditions (ambient temperature, relative humidity, precipitation, wind, etc), concrete deck surface preparation, binder and aggregate mixing, primer application, elastomeric concrete placement, curing conditions and minimum curing time before joint exposure to traffic. Do not place elastomeric concrete if the ambient air or surface temperature is below 45°F.

Prepare the concrete surface within 48 hours prior to placing the elastomeric concrete. Before placing the elastomeric concrete, all concrete surfaces shall be thoroughly cleaned and dry. Sandblast the concrete surface in the blockout and clear the surface of all loose debris. Do not place the elastomeric concrete until the surface preparation is completed and approved.

Prepare and apply a primer, as per manufacturer's recommendations, to all concrete faces to be in contact with elastomeric concrete, and to areas specified by the manufacturer.

Prepare, batch, and place the elastomeric concrete in accordance with the manufacturer's instructions. Place the elastomeric concrete in the areas specified on the plans while the primer is still tacky and within 2 hours after applying the primer. Trowel the elastomeric concrete to a smooth finish.

The joint opening in the elastomeric concrete shall match the formed opening in the concrete deck prior to sawing the joint.

## **5.0 FIELD SAMPLING**

Provide additional production material to allow freshly mixed elastomeric concrete to be sampled for acceptance. A minimum of six 2 inch cube molds and three 3x6 inch cylinders will be taken by the Department for each day's production. Compression, splitting tensile, and durometer hardness testing will be performed by the Department to determine acceptance. Materials failing to meet the requirements listed above are subject to removal and replacement at no cost to the Department.

## **6.0 BASIS OF PAYMENT**

*Elastomeric Concrete* will be measured and paid for at the contract unit price bid per cubic foot and will be full compensation for furnishing and placing the Elastomeric Concrete.

### **Pay Item**

Elastomeric Concrete

### **Pay Unit**

Cubic Feet

**GROUT FOR STRUCTURES****(9-30-11)****1.0 DESCRIPTION**

This special provision addresses grout for use in pile block-outs, 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, or decks. Mix and place grout in accordance with the manufacturer's recommendations, the applicable sections of the Standard Specifications and this provision.

**2.0 MATERIAL REQUIREMENTS**

Use a Department approved pre-packaged, non-shrink, non-metallic grout. Contact the Materials and Tests Unit for a list of approved pre-packaged grouts and consult the manufacturer to determine if the pre-packaged grout selected is suitable for the required application.

When using an approved pre-packaged grout, a grout mix design submittal is not required.

The grout shall be free of soluble chlorides and contain less than one percent soluble sulfate. Supply water in compliance with Article 1024-4 of the Standard Specifications.

Aggregate may be added to the mix only where recommended or permitted by the manufacturer and Engineer. The quantity and gradation of the aggregate shall be in accordance with the manufacturer's recommendations.

Admixtures, if approved by the Department, shall be used in accordance with the manufacturer's recommendations. The manufacture date shall be clearly stamped on each container. Admixtures with an expired shelf life shall not be used.

The Engineer reserves the right to reject material based on unsatisfactory performance.

Initial setting time shall not be less than 10 minutes when tested in accordance with ASTM C266.

Test the expansion and shrinkage of the grout in accordance with ASTM C1090. The grout shall expand no more than 0.2% and shall exhibit no shrinkage. Furnish a Type 4 material certification showing results of tests conducted to determine the properties listed in the Standard Specifications and to assure the material is non-shrink.

Unless required elsewhere in the contract the compressive strength at 3 days shall be at least 5000 psi. Compressive strength in the laboratory shall be determined in accordance with ASTM C109 except the test mix shall contain only water and the dry manufactured material. Compressive strength in the field will be determined by molding and testing 4" x 8" cylinders in accordance with AASHTO T22. Construction loading and traffic loading shall not be allowed until the 3 day compressive strength is achieved.

When tested in accordance with ASTM C666, Procedure A, the durability factor of the grout shall not be less than 80.



### 3.0 SAMPLING AND PLACEMENT

Place and maintain components in final position until grout placement is complete and accepted. Concrete surfaces to receive grout shall be free of defective concrete, laitance, oil, grease and other foreign matter. Saturate concrete surfaces with clean water and remove excess water prior to placing grout.

Do not place grout if the grout temperature is less than 50°F or more than 90°F or if the air temperature measured at the location of the grouting operation in the shade away from artificial heat is below 45°F.

Provide grout at a rate that permits proper handling, placing and finishing in accordance with the manufacturer's recommendations unless directed otherwise by the Engineer. Use grout free of any lumps and undispersed cement. Agitate grout continuously before placement.

Control grout delivery so the interval between placing batches in the same component does not exceed 20 minutes.

The Engineer will determine the locations to sample grout and the number and type of samples collected for field and laboratory testing. The compressive strength of the grout will be considered the average compressive strength test results of 3 cube or 2 cylinder specimens at 28 days.

### 4.0 BASIS OF PAYMENT

No separate payment will be made for "Grout for Structures". The cost of the material, equipment, labor, placement, and any incidentals necessary to complete the work shall be considered incidental to the structure item requiring grout.

## **SUBMITTAL OF WORKING DRAWINGS**

**(6-19-15)**

### 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. T. K. Koch, P. E.  
State Structures Engineer  
North Carolina Department  
of Transportation  
Structures Management Unit  
1581 Mail Service Center  
Raleigh, NC 27699-1581

Attention: Mr. P. D. Lambert, P. E.

Via other delivery service:

Mr. T. K. Koch, P. E.  
State Structures Engineer  
North Carolina Department  
of Transportation  
Structures Management Unit  
1000 Birch Ridge Drive  
Raleigh, NC 27610

Attention: Mr. P. D. Lambert, P. E.

Submittals may also be made via email.

Send submittals to:

[plambert@ncdot.gov](mailto:plambert@ncdot.gov) (Paul Lambert)

Send an additional e-copy of the submittal to the following address:

[jgaither@ncdot.gov](mailto:jgaither@ncdot.gov) (James Gaither)

[mrorie@ncdot.gov](mailto: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:

Mr. K. J. Kim, Ph. D., 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

Via other delivery service:

Mr. K. J. Kim, Ph. D., 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

For projects in Divisions 8-14, use the following Western Regional Office address:

Via US mail:

Mr. Eric Williams, P. E.

Via 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

Western Region Geotechnical  
 Manager  
 North Carolina Department  
 of Transportation  
 Geotechnical Engineering Unit  
 Western Regional Office  
 5253 Z Max Boulevard  
 Harrisburg, NC 28075

The status of the review of structure-related submittals sent to the Structures Management Unit can be viewed from the Unit's web site, via the "Drawing Submittal Status" link.

Direct any questions concerning submittal review status, review comments or drawing markups to the following contacts:

Primary Structures Contact:	Paul Lambert	(919) 707 – 6407 (919) 250 – 4082 facsimile <a href="mailto:plambert@ncdot.gov">plambert@ncdot.gov</a>
Secondary Structures Contacts:	James Gaither Madonna Rorie	(919) 707 – 6409 (919) 707 – 6508

Eastern Regional Geotechnical Contact (Divisions 1-7):

K. J. Kim	(919) 662 – 4710 (919) 662 – 3095 facsimile <a href="mailto:kkim@ncdot.gov">kkim@ncdot.gov</a>
-----------	--

Western Regional Geotechnical Contact (Divisions 8-14):

Eric Williams	(704) 455 – 8902 (704) 455 – 8912 facsimile <a href="mailto:ewilliams3@ncdot.gov">ewilliams3@ncdot.gov</a>
---------------	--

### **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**

<b>Submittal</b>	<b>Copies Required by Structures Management Unit</b>	<b>Copies Required by Geotechnical Engineering Unit</b>	<b>Contract Reference Requiring Submittal <sup>1</sup></b>
Arch Culvert Falsework	5	0	Plan Note, SN Sheet & “Falsework and Formwork”
Box Culvert Falsework <sup>7</sup>	5	0	Plan Note, SN Sheet & “Falsework and Formwork”
Cofferdams	6	2	Article 410-4
Foam Joint Seals <sup>6</sup>	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”
Expansion Joint Seals (strip seals)	9	0	“Strip Seals”
Falsework & Forms <sup>2</sup> (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 <sup>4,5</sup>	7	0	Article 1072-8
Miscellaneous Metalwork <sup>4,5</sup>	7	0	Article 1072-8

Disc Bearings <sup>4</sup>	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) <sup>3</sup>	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
1. Removal of Existing Structure over Railroad	5	0	Railroad Provisions
Revised Bridge Deck Plans (adaptation to prestressed deck panels)	2, then 1 reproducible	0	Article 420-3
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 <sup>5</sup>	7	0	Article 1072-8 & “Sound Barrier Wall”
Structural Steel <sup>4</sup>	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 <sup>4</sup>	8	0	Article 1072-8

**FOOTNOTES**

2. 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*.
3. Submittals for these items are necessary only when required by a note on plans.
4. Submittals for these items may not be required. A list of pre-approved sequences is available from the producer or the Materials & Tests Unit.
5. The fabricator may submit these items directly to the Structures Management Unit.
6. The two sets of preliminary submittals required by Article 1072-8 of the *Standard Specifications* are not required for these items.
7. Submittals for Fabrication Drawings are not required. Submittals for Catalogue Cuts of Proposed Material are required. See Section 5.A of the referenced provision.
8. Submittals are necessary only when the top slab thickness is 18" or greater.

### GEOTECHNICAL SUBMITTALS

Submittal	Copies Required by Geotechnical Engineering Unit	Copies Required by Structures Management Unit	Contract Reference Requiring Submittal <sup>1</sup>
Drilled Pier Construction Plans <sup>2</sup>	1	0	Subarticle 411-3(A)
Crosshole Sonic Logging (CSL) Reports <sup>2</sup>	1	0	Subarticle 411-5(A)(2)
Pile Driving Equipment Data Forms <sup>2,3</sup>	1	0	Subarticle 450-3(D)(2)
Pile Driving Analyzer (PDA) Reports <sup>2</sup>	1	0	Subarticle 450-3(F)(3)
9. Retaining Walls <sup>4</sup>	8 drawings, 2 calculations	2 drawings	Applicable Provisions
10. Temporary Shoring <sup>4</sup>	5 drawings, 2 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) or by facsimile, 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](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  $\frac{3}{4}$ ".

Note on the working drawings any anchorages, connectors, inserts, steel sleeves or other such devices used as part of the falsework or formwork that remains in the permanent structure. If the plan notes indicate that the structure contains the necessary corrosion protection required for a Corrosive Site, epoxy coat, galvanize or metalize these devices. Electroplating will not be allowed. Any coating required by the Engineer will be considered incidental to the various pay items requiring temporary works.

Design falsework and formwork requiring submittals in accordance with the 1995 AASHTO *Guide Design Specifications for Bridge Temporary Works* except as noted herein.

#### 1. Wind Loads

Table 2.2 of Article 2.2.5.1 is modified to include wind velocities up to 110 mph. In addition, Table 2.2A is included to provide the maximum wind speeds by county in North Carolina.

**Table 2.2 - Wind Pressure Values**

Height Zone feet above ground	Pressure, lb/ft <sup>2</sup> for Indicated Wind Velocity, mph				
	70	80	90	100	110
0 to 30	15	20	25	30	35

30 to 50	20	25	30	35	40
50 to 100	25	30	35	40	45
over 100	30	35	40	45	50

## 2. Time of Removal

The following requirements replace those of Article 3.4.8.2.

Do not remove forms until the concrete has attained strengths required in Article 420-16 of the Standard Specifications and these Special Provisions.

Do not remove forms until the concrete has sufficient strength to prevent damage to the surface.

**Table 2.2A - Steady State Maximum Wind Speeds by Counties in North Carolina**

COUNTY	25 YR (mph)	COUNTY	25 YR (mph)	COUNTY	25 YR (mph)
Alamance	70	Franklin	70	Pamlico	100
Alexander	70	Gaston	70	Pasquotank	100
Alleghany	70	Gates	90	Pender	100
Anson	70	Graham	80	Perquimans	100
Ashe	70	Granville	70	Person	70
Avery	70	Greene	80	Pitt	90
Beaufort	100	Guilford	70	Polk	80
Bertie	90	Halifax	80	Randolph	70
Bladen	90	Harnett	70	Richmond	70
Brunswick	100	Haywood	80	Robeson	80
Buncombe	80	Henderson	80	Rockingham	70
Burke	70	Hertford	90	Rowan	70
Cabarrus	70	Hoke	70	Rutherford	70
Caldwell	70	Hyde	110	Sampson	90
Camden	100	Iredell	70	Scotland	70
Carteret	110	Jackson	80	Stanley	70
Caswell	70	Johnston	80	Stokes	70
Catawba	70	Jones	100	Surry	70
Cherokee	80	Lee	70	Swain	80
Chatham	70	Lenoir	90	Transylvania	80
Chowan	90	Lincoln	70	Tyrell	100
Clay	80	Macon	80	Union	70
Cleveland	70	Madison	80	Vance	70
Columbus	90	Martin	90	Wake	70

Craven	100	McDowell	70	Warren	70
Cumberland	80	Mecklenburg	70	Washington	100
Currituck	100	Mitchell	70	Watauga	70
Dare	110	Montgomery	70	Wayne	80
Davidson	70	Moore	70	Wilkes	70
Davie	70	Nash	80	Wilson	80
Duplin	90	New Hanover	100	Yadkin	70
Durham	70	Northampton	80	Yancey	70
Edgecombe	80	Onslow	100		
Forsyth	70	Orange	70		

#### B. Review and Approval

The Engineer is responsible for the review and approval of temporary works' drawings.

Submit the working drawings sufficiently in advance of proposed use to allow for their review, revision (if needed), and approval without delay to the work.

The time period for review of the working drawings does not begin until complete drawings and design calculations, when required, are received by the Engineer.

Do not start construction of any temporary work for which working drawings are required until the drawings have been approved. Such approval does not relieve the Contractor of the responsibility for the accuracy and adequacy of the working drawings.

#### 4.0 CONSTRUCTION REQUIREMENTS

All requirements of Section 420 of the Standard Specifications apply.

Construct temporary works in conformance with the approved working drawings. Ensure that the quality of materials and workmanship employed is consistent with that assumed in the design of the temporary works. Do not weld falsework members to any portion of the permanent structure unless approved. Show any welding to the permanent structure on the approved construction drawings.

Provide tell-tales attached to the forms and extending to the ground, or other means, for accurate measurement of falsework settlement. Make sure that the anticipated compressive settlement and/or deflection of falsework does not exceed 1 inch. For cast-in-place concrete structures, make sure that the calculated deflection of falsework flexural members does not exceed 1/240 of their span regardless of whether or not the deflection is compensated by camber strips.

#### A. Maintenance and Inspection

Inspect and maintain the temporary work in an acceptable condition throughout the period of its use. Certify that the manufactured devices have been maintained in a condition to

allow them to safely carry their rated loads. Clearly mark each piece so that its capacity can be readily determined at the job site.

Perform an in-depth inspection of an applicable portion(s) of the temporary works, in the presence of the Engineer, not more than 24 hours prior to the beginning of each concrete placement. Inspect other temporary works at least once a month to ensure that they are functioning properly. Have a North Carolina Registered Professional Engineer inspect the cofferdams, shoring, sheathing, support of excavation structures, and support systems for load tests prior to loading.

## B. Foundations

Determine the safe bearing capacity of the foundation material on which the supports for temporary works rest. If required by the Engineer, conduct load tests to verify proposed bearing capacity values that are marginal or in other high-risk situations.

The use of the foundation support values shown on the contract plans of the permanent structure is permitted if the foundations are on the same level and on the same soil as those of the permanent structure.

Allow for adequate site drainage or soil protection to prevent soil saturation and washout of the soil supporting the temporary works supports.

If piles are used, the estimation of capacities and later confirmation during construction using standard procedures based on the driving characteristics of the pile is permitted. If preferred, use load tests to confirm the estimated capacities; or, if required by the Engineer conduct load tests to verify bearing capacity values that are marginal or in other high risk situations.

The Engineer reviews and approves the proposed pile and soil bearing capacities.

## **5.0 REMOVAL**

Unless otherwise permitted, remove and keep all temporary works upon completion of the work. Do not disturb or otherwise damage the finished work.

Remove temporary works in conformance with the contract documents. Remove them in such a manner as to permit the structure to uniformly and gradually take the stresses due to its own weight.

## **6.0 METHOD OF MEASUREMENT**

Unless otherwise specified, temporary works will not be directly measured.

## **7.0 BASIS OF PAYMENT**

Payment at the contract unit prices for the various pay items requiring temporary works will be full compensation for the above falsework and formwork.

**CRANE SAFETY****(8-15-05)**

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 regulations (OSHA).

Submit all items listed below to the Engineer prior to beginning crane operations involving critical lifts. A critical lift is defined as any lift that exceeds 75 percent of the manufacturer's crane chart capacity for the radius at which the load will be lifted or requires the use of more than one crane. 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**

- **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.
- **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.
- **Crane Inspections:** Inspection records for all cranes shall be current and readily accessible for review upon request.
- **Certifications:** By July 1, 2006, crane operators performing critical lifts shall be certified by NC CCO (National Commission for the Certification of Crane Operators), or satisfactorily complete the Carolinas AGC's Professional Crane Operator's Proficiency Program. Other approved nationally accredited programs will be considered upon request. All crane operators shall also have a current CDL medical card. Submit a list of anticipated critical lifts and corresponding crane operator(s). Include current certification for the type of crane operated (small hydraulic, large hydraulic, small lattice, large lattice) and medical evaluations for each operator.

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
<b>ROADWAY ITEMS</b>						
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0106000000-E	230	BORROW EXCAVATION	490 CY		
0003	1220000000-E	545	INCIDENTAL STONE BASE	120 TON		
0004	1245000000-E	SP	SHOULDER RECONSTRUCTION	2 SMI		
0005	1297000000-E	607	MILLING ASPHALT PAVEMENT, **** DEPTH (3")	194,012 SY		
0006	1308000000-E	607	MILLING ASPHALT PAVEMENT, **** TO ***** (0" TO 1-1/2")	480 SY		
0007	1330000000-E	607	INCIDENTAL MILLING	4,281 SY		
0008	1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	3,733 TON		
0009	1524200000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5D	34,475 TON		
0010	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	220 TON		
0011	1577000000-E	620	POLYMER MODIFIED ASPHALT BIN- DER FOR PLANT MIX	2,338 TON		
0012	1704000000-E	SP	PATCHING EXISTING PAVEMENT	2,640 TON		
0013	1880000000-E	SP	GENERIC PAVING ITEM ULTRA-THIN BONDED WEARING COURSE	7,176 TON		
0014	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	232 SF		
0015	4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	314 SF		
0016	4415000000-N	1115	FLASHING ARROW BOARD	3 EA		
0017	4420000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN	2 EA		
0018	4422000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN (SHORT TERM)	60 DAY		

County : Mecklenburg

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0019	4430000000-N	1130	DRUMS	175	EA	
0020	4445000000-E	1145	BARRICADES (TYPE III)	24	LF	
0021	4480000000-N	1165	TMA	2	EA	
0022	4510000000-N	SP	LAW ENFORCEMENT	300	HR	
0023	4650000000-N	1251	TEMPORARY RAISED PAVEMENT MARKERS	653	EA	
0024	4688000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (6", 90 MILS)	105,933	LF	
0025	4690000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (6", 120 MILS)	26,579	LF	
0026	4695000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	925	LF	
0027	4700000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (12", 90 MILS)	6,128	LF	
0028	4702000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (12", 120 MILS)	1,100	LF	
0029	4710000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)	129	LF	
0030	4721000000-E	1205	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)	8	EA	
0031	4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	58	EA	
0032	4770000000-E	1205	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (IV)	2,224	LF	
0033	4775000000-E	1205	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (6") (II)	1,974	LF	
0034	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	83,268	LF	
0035	4820000000-E	1205	PAINT PAVEMENT MARKING LINES (8")	6,400	LF	

County : Mecklenburg

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0036	4840000000-N	1205	PAINT PAVEMENT MARKING CHARACTER	8 EA		
0037	4845000000-N	1205	PAINT PAVEMENT MARKING SYMBOL	51 EA		
0038	4905000000-N	1253	SNOWPLOWABLE PAVEMENT MARKERS	2,201 EA		
0039	5255000000-N	1413	PORTABLE LIGHTING	Lump Sum	L.S.	
0040	6000000000-E	1605	TEMPORARY SILT FENCE	1,490 LF		
0041	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	198 TON		
0042	6012000000-E	1610	SEDIMENT CONTROL STONE	100 TON		
0043	6071010000-E	SP	WATTLE	297 LF		
0044	6071020000-E	SP	POLYACRYLAMIDE (PAM)	18 LB		

**STRUCTURE ITEMS**

0045	8692000000-N	SP	FOAM JOINT SEALS	Lump Sum	L.S.	
0046	8882000000-E	SP	GENERIC STRUCTURE ITEM ELASTOMERIC CONCRETE	184 CF		
0047	8892000000-E	SP	GENERIC STRUCTURE ITEM BRIDGE JOINT DEMOLITION	618 SF		
0048	8892000000-E	SP	GENERIC STRUCTURE ITEM CONCRETE DECK REPAIR FOR EPOXY OVERLAY	20 SF		
0049	8892000000-E	SP	GENERIC STRUCTURE ITEM EPOXY OVERLAY SYSTEM-MECHANICALLY DISTRIBUTED	44,715 SF		