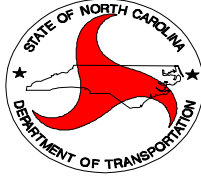


STATE OF NORTH CAROLINA  
**DEPARTMENT OF TRANSPORTATION**



DIVISION 11      BRIDGE MAINTENANCE

# **CONTRACT PROPOSAL**

**WBS ELEMENT NUMBER:** Various      **CONTRACT:** 11-00-089  
**ROUTE:** Various      **COUNTY:** Division 11  
**DESCRIPTION:** Replacement/Repair of Bridge Expansion Joints, Epoxy Overlay, Crack Sealing, and Foam Injections at Various Bridge/Roadway Sites upon Request in Alleghany, Ashe, Avery, Caldwell, Surry, Watauga, Wilkes, and Yadkin Counties

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**BID OPENING:** April 3, 2014 @ 2:00 PM

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**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 OR SBE PROJECT. 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.

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NAME OF BIDDER

---

N.C. CONTRACTOR'S LICENSE NUMBER

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ADDRESS OF BIDDER

**RETURN BIDS TO:**

QUOTE NO: 11-00-089 –BRIDGE MAINTENANCE  
N.C. DEPARTMENT OF TRANSPORTATION  
JOE L. LAWS, PE, DIVISION PROJECT MANAGER  
801 STATESVILLE ROAD  
P.O. BOX 250  
NORTH WILKESBORO, NORTH CAROLINA 28659

## **INSTRUCTIONS TO BIDDERS**

### **PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE PREPARING AND SUBMITTING YOUR BID**

All bids shall be prepared and submitted in accordance with the following requirements. Failure to comply with any requirement shall cause the bid to be considered irregular and shall be grounds for rejection of the bid.

1. The bid sheet furnished by NCDOT with the proposal shall be used and shall not be altered in any manner. **DO NOT SEPARATE THE BID SHEET FROM THE PROPOSAL!**
2. All entries on the bid sheet, including signatures, shall be written in ink.
3. The Bidder shall submit a unit price for every item on the bid form. The unit prices for the various contract items shall be written in figures.
4. An amount bid shall be entered on the bid sheet for every item. The amount bid for each item shall be determined by multiplying each unit bid by the quantity for that item, and shall be written in figures in the "Amount Bid" column of the sheet.
5. The total amount bid shall be written in figures in the proper place on the bid sheet. The total amount shall be determined by adding the amounts bid for each item.
6. Changes in any entry shall be made by marking through the entry in ink and making the correct entry adjacent thereto in ink. A representative of the Bidder shall initial the change in ink.
7. The bid shall be properly executed. All bids shall show the following information:
  - a. Name of individual, firm, corporation, partnership, or joint venture submitting bid.
  - b. Name and signature of individual or representative submitting bid and position or title.
  - c. Name, signature, and position or title of witness.
  - d. Contractor's License Number (if Applicable)
8. Bids submitted by corporations shall bear the seal of the corporation.
9. The bid shall not contain any unauthorized additions, deletions, or conditional bids.
10. The bidder shall not add any provision reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
11. **THE PROPOSAL WITH THE BID SHEET STILL ATTACHED SHALL BE PLACED IN A SEALED ENVELOPE AND SHALL HAVE BEEN DELIVERED TO AND RECEIVED IN THE DIVISION ENGINEER'S OFFICE AT 801 STATESVILLE ROAD, P.O. BOX 250, NORTH WILKESBORO, NORTH CAROLINA 28659 BY 2:00 PM ON APRIL 3, 2014.**
12. The sealed bid must display the following statement on the front of the sealed envelope:

**QUOTE NO: 11-00-089 –BRIDGE MAINTENANCE**

13. If delivered by mail, the sealed envelope shall be placed in another sealed envelope and the outer envelope shall be addressed as follows:

**JOE L. LAWS, PE, DIVISION PROJECT MANAGER  
N.C. DEPARTMENT OF TRANSPORTATION  
P.O. BOX 250  
801 STATESVILLE ROAD  
NORTH WILKESBORO, NORTH CAROLINA 28659**

### **AWARD OF CONTRACT**

The award of the contract, if it be awarded, will be made to the lowest responsible Bidder in accordance with Section 102 of the *2012 Standard Specifications for Roads and Structures*. The lowest responsible Bidder will be notified that his bid has been accepted and that he has been awarded the contract. NCDOT reserves the right to reject all bids.

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# DIVISION CONTRACT

## General Provisions

### GENERAL

This contract is for repairing or replacing bridge deck expansion joints, installing foam injections, deck patching, and epoxy overlays at various bridge sites in Alleghany, Ashe, Avery, Caldwell, Surry, Watauga, Wilkes, and Yadkin Counties.

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 any 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 in the contract.

The Contractor shall note that the contract quantities provided are used solely for determining the lowest responsible bidder. Actual Item Quantities will vary and will be determined based upon the amount of repairs required. No minimum amount of work is guaranteed under this contract.

All work and materials shall be in accordance with the provisions of the General Guidelines of this contract, the Project Special Provisions, the *North Carolina Department of Transportation Standard Specifications for Roads and Structures*, the *North Carolina Department of Transportation Roadway Standards Drawings*, and the current edition of the *Manual of Uniform Traffic Control Devices (MUTCD)*. These manuals may be found on the internet at:

<http://www.ncdot.gov/doh/preconstruct/ps/specifications/2012draft.pdf>

[http://www.ncdot.gov/doh/preconstruct/ps/std\\_draw/default.html](http://www.ncdot.gov/doh/preconstruct/ps/std_draw/default.html)

<http://mutcd.fhwa.dot.gov/>

### CONTRACT TIME AND LIQUIDATED DAMAGES

**This contract shall be effective May 1, 2014. Work requests will be made on an as-needed basis; therefore each request will have its own date of availability and required completion date.**

All work will be done at the request of the Engineer. Notification will be made via fax, email, or letter and will include the location of the work, description of the work to be performed, and the approximate quantities required. Each work request may consist of multiple locations within a general work area. Each notification will be considered a separate and independent project.

An intermediate contract time of **seven (7) calendar days** from notification will apply to the Engineer's Work Request for **emergency repairs**. In the event that the Contractor fails to respond to the location(s) requested by the Engineer within **seven (7) calendar days**, liquidated

damages in the amount of **Five Hundred Dollars (\$500.00) per calendar day, or portion thereof**, will be deducted from the monies due to the Contractor.

An intermediate contract time of **thirty (30) calendar days** from notification will apply to the Engineer's Work Request for **planned repairs**. In the event that the Contractor fails to respond to the location(s) requested by the Engineer within **thirty (30) calendar days**, liquidated damages in the amount of **Two Hundred Dollars (\$200.00) per calendar day, or portion thereof**, will be deducted from the monies due to the Contractor.

**The determination of failure to physically respond in a timely manner shall be at the discretion of the Engineer. Failure to respond may result in cancellation of the contract.**

No extensions will be authorized except as authorized by Article 108-10 of the *2012 Standard Specifications*.

No work will be permitted and no contract will be executed until all prerequisite conditions and certifications have been satisfied.

### **TERM OF THE CONTRACT**

The contractor shall submit his bid for one year. At the option of the Department, this contract may be extended two (2) additional periods of one (1) year each (maximum of three (3) years total). The unit bid price will be increased by **three (3) percent** for each one-year extension. No changes in the terms, conditions, etc. of this contract will be made when an extension of the contract is implemented. The Engineer will notify the Contractor in writing by **March 1, 2015** if the contract may be extended. The Contractor must notify the Engineer in writing by **April 1, 2015** of his acceptance or rejection of this offer. Failure on the part of the Contractor to reply will be received as a rejection of contract extension.

**The period covered by this contract will be from May 1, 2014 until April 30, 2015.**

### **INTERMEDIATE CONTRACT TIME NUMBER ONE AND LIQUIDATED DAMAGES**

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

#### **DAY AND TIME RESTRICTIONS**

Interstate Highways and Other Routes designated by the Engineer  
Monday through Sunday from 6:00 A.M. to 8:00 P.M.

In addition, the Contractor shall not close or narrow a lane of traffic on **any route**, 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 **3:00 P.M.** December 31st and **9:00 A.M.** January 2nd. If New Year's Day is on a Friday, Saturday, Sunday or Monday, then until **9:00 A.M.** the following Tuesday.
3. For **Martin Luther King Jr Day**, between the hours of **3:00 P.M.** Friday and **9:00 A.M.** Tuesday.
4. For **Easter**, between the hours of **3:00 P.M.** Thursday and **9:00 A.M.** Monday.
5. For **Memorial Day**, between the hours of **3:00 P.M.** Friday and **9:00 A.M.** Tuesday.
6. For **Independence Day**, between the hours of **3:00 P.M.** the Thursday before the week of Independence Day and **9:00 A.M.** the following Tuesday after the week of Independence Day.
7. For **Labor Day**, between the hours of **3:00 P.M.** Friday and **9:00 A.M.** Tuesday.
8. For **Veteran's Day**, between the hours of **3:00 P.M.** the day before and **9:00 A.M.** the day after.
9. For **Thanksgiving Day**, between the hours of **3:00 P.M.** Tuesday and **9:00 A.M.** Monday.
10. For **Christmas**, between the hours of **3:00 P.M.** the Friday before the week of Christmas Day and **9:00 A.M.** the following Tuesday after the week of Christmas Day.

Holidays and holiday weekends shall include New Year's, Martin Luther King Jr. Day, Easter, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving, and Christmas. The Contractor shall schedule his work so that lane closures are not 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 herein and place traffic in the original traffic pattern. Failure to comply with any of the requirements for safety and traffic control of this contract shall result in suspension of work as provided in Subarticle 108-7(B) of the *2012 Standard Specifications*.

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

## **MAJOR CONTRACT ITEMS**

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

## **SPECIALTY ITEMS**

None of the items included in this contract will be specialty items (See Article 108-6 of the *Standard Specifications*).

## **PREPARATION AND SUBMISSION OF BIDS**

The entire bid proposal package, properly signed and executed, must be returned in order for the bid to be considered as responsive. **Incomplete proposal packages may be considered unresponsive.** Bid proposals shall be completed in ink and any corrections shall have one strike through with the correction initialed by the bidder.

**Any firm that wishes to bid on this project as the prime contractor must be prequalified for the type of work they wish to perform prior to submitting their bid.** For the purposes of prequalification, any firm that is currently prequalified as a prime or a subcontractor on centrally let contracts for the appropriate work codes is considered eligible to work and/or bid on this contract as long as other items such as bonding and license requirements for the contract are met.

Information regarding the requirements to become prequalified as a Purchase Order Contract contractor, can be found at the following website: <http://www.ncdot.org/business/howtogetstarted/>

All bids shall be prepared and submitted in accordance with the listed requirements of Article 102-8 of the *2012 Standard Specifications*.

In accordance with GS 136-28.1(b), if the total bid amount of the contract exceeds **\$2,500,000**, the bid will not be considered for award.

## **BID BOND**

**A Bid Bond is NOT required for the submission of bids for this project.**

## **EXECUTION OF SIGNATURE SHEETS AND DEBARMENT CERTIFICATION**

The Bidder's attention is directed to the various sheets in the contract proposal, which are to be completed and/or signed by the Bidder. A list of these sheets is shown below. The signature sheets are located behind the Bid Form(s) in the contract proposal.

1. Execution of Bid including Non-Collusion Affidavit, Debarment Certification, & Gift Ban
2. MBE/WBE/DBE Subcontract Listing Form



The Bidder shall certify his and to the best of his knowledge all subcontractors, material suppliers and vendors utilized herein current status concerning suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency, in accordance with the "Debarment Certification" located behind the signature sheets in the proposal forms. Execution of the bid signature sheets in conjunction with any applicable statements concerning exceptions, when such statements have been made on the "Debarment Certification", constitutes the Bidders certification of "status" under penalty of perjury under the laws of the United States.

### **AWARD LIMITS ON MULTIPLE PROJECTS**

It is the desire of the Proposer to be awarded contracts, the value of which will not exceed a total of \$\_\_\_\_\_, for those projects indicated below on which bids are being opened on the same date as shown in the Proposal Form. Individual projects shall be indicated by placing the project number and county in the appropriate place below. Projects not selected will not be subject to an award limit.

_____	_____
(Project Number)	(County)
_____	_____
(Project Number)	(County)
_____	_____
(Project Number)	(County)

\*If a Proposer desires to limit the total amount of work awarded to him in this letting, he shall state such limit in the space provided above in the second line of this form.

It is agreed that in the event that I am (we are) the successful bidder on indicated projects, the total value of which is more that the above stipulated award limits, the Board of Transportation will award me (us) projects from among those indicated which have a total value not exceeding the award limit and which will result in the best advantage to the Department of Transportation.

\_\_\_\_\_  
\*\*Signature of Authorized Person

\*\*Only those persons authorized to sign bids under the provisions of Article 102-8, Item 8, shall be authorized to sign this form.

### **CONTRACT PAYMENT AND PERFORMANCE BOND**

A performance bond in the amount of **one hundred percent (100%)** of the contract amount, conditioned upon the faithful performance of the contract in accordance with specifications and conditions of the contract is required for Construction contracts of **\$500,000.00** or more. Such

bond shall be solely for the protection of the North Carolina Department of Transportation and the State of North Carolina.

A payment bond in the amount of **one hundred percent (100%)** of the contract amount, conditioned upon the prompt payment for all labor or materials for which the Contractor, or his subcontractors, is liable is required for Construction contracts greater than **\$500,000.00**. The payment bond shall be solely for the protection of persons or firms furnishing materials or performing labor for this contract for which the Contractor is liable.

The successful bidder, **within fourteen (14) days** after notice of award, shall provide the Department with a contract payment bond and a contract performance bond each in an amount equal to 100 percent of the amount of the contract.

### **WORKMEN'S COMPENSATION INSURANCE**

The contractor shall defend, indemnify and hold harmless the North Carolina Department of Transportation, its officers and employees from any claim, demand, suit, liability, judgment and expense (including attorney's fees and other costs of litigation) arising out of or relating to injury, disease, or death of persons or damage to or loss of property resulting from or in connection with the negligent performance of this contract by the contractor, its agents, employees, and subcontractors or any one for whom the contractor may be responsible. The obligations, indemnities and liabilities assumed by the contractor under this paragraph shall not extend to any liability caused by the negligence of the Department of Transportation or its employees. The contractor's liability shall not be limited by any provisions or limits of insurance set forth in this contract.

The contractor shall indemnify and hold harmless the Department of Transportation from any claim, demand, suit, liability, judgment, and expense involving damage or loss to the contractor's equipment (including vandalism, theft, fire and acts of God) arising out of or relating to work performed under this agreement. The obligations, indemnities and liabilities assumed by the contractor under this paragraph shall not extend to any liability caused by the negligence of the Department of Transportation or its employees. The contractor's liability shall not be limited by any provisions or limits of insurance set forth in this contract.

The contractor further agrees to indemnify the Department of Transportation for any damages to the roadway, highway signs, highway equipment and other property owned or in possession of the Department of Transportation, brought about by reason of the negligent operation of the leased equipment. The contractor further agrees to indemnify and save harmless the Department of Transportation, its officers and employees from any claims or amounts recovered by any of the contractor's employees under the Worker's Compensation Act.

*Pursuant to N.C.G.S. § 97-19, all contractors of the Department of Transportation are, prior to beginning services, required to show 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 stating that it has complied with N.C.G.S. § 97-93 irrespective of whether subcontractors have regularly in service fewer than three employees in the same business within*

*the State of North Carolina, and subcontractors shall be hereinafter liable under the Workers' Compensation Act for payment of compensation and other benefits to its employees for any injury or death due to an accident arising out of and in the course of performance of the work insured by the subcontractor.*

**Proof of insurance shall be furnished to the Engineer prior to beginning work.**

### **LICENSES**

In accordance with G.S. 136-28.14, this project is not subject to the licensing requirements of Chapter 87 of the General Statutes.

### **SUBLETTING OF CONTRACT**

The Contractor shall not sublet, sell, transfer, assign or otherwise dispose of this contract or any portion thereof; or his right, title, or interest therein; without written consent of the Engineer. Subletting of this contract or any portion of the contract shall conform to the requirements of Article of 108-6 of the *2012 Standard Specifications*.

### **DEFAULT OF CONTRACT**

The Department of Transportation shall have the right to declare a default of contract for breach by the Contractor of any material term or condition of the contract. Default of contract shall be in accordance with the terms, conditions, and procedures of Article 108-9 of the *2012 Standard Specifications*.

### **PARTIAL PAYMENT**

The Contractor may submit a request for partial payment on a monthly basis, or other interval as approved by the Engineer. The amount of partial payments will be based on the work accomplished and accepted as the last day of the approved pay period. A separate invoice will be required for each different work order and function code. Compensation for all pay items shall be in accordance with the *Standard Specifications*.

Requests for payment can be made on the form furnished to the Contractor by the Department of Transportation. The form shall be completely and legibly filled out with all appropriate information supplied and shall be signed by an authorized representative of the Contractor.

If the request for payment is made by Contractor's Invoice, the Invoice shall be submitted to:

**North Carolina Department of Transportation  
Attention: David Wayne, PE  
P. O. Box 250  
North Wilkesboro, NC 28659**

All invoice items and unit costs shall correspond to contract pay items. In the event of error or discrepancy in items or unit costs, the Department may return the invoice to the contractor for correction. Invoices must be "electronically scanned" by our office and the image is transmitted to the Purchasing Unit to verify payment. To avoid confusion and delay of payments each invoice should have a **Unique Invoice Number**, i.e. 1, 2, 3... In addition, the invoice should be positively identified and associated with the Purchase Order by including the **Purchase Order Number** on the Invoice.

Minority Business Enterprise (MBE), Women's Business Enterprise (WBE) and/or Disadvantage Business Enterprise (DBE) participation shall be listed on the appropriate form (DBE-IS) and shall accompany all requests for payment. If there is no participation the word "**None**" or the figure "**0**" shall be entered. Requests for payment will not be processed without the submission of the DBE-IS form. One hundred percent (100%) payment shall be made after successful completion of the work as verified by the final inspection.

### **RETAINAGE AND PROMPT PAYMENT**

#### **Prompt Payment of Monies Due Subcontractors, Second Tier Subcontractors and Material Suppliers and Release of Retainage**

Contractors at all levels; prime, subcontractor, or second tier contractor, shall within seven calendar days of receipt of monies, resulting from work performed on the project or services rendered, pay subcontractors, second tier subcontractors, or material suppliers, as appropriate. This seven-day period begins upon knowledgeable receipt by the contracting firm obligated to make a subsequent periodic or final payment. These prompt payment requirements will be met if each firm mails the payment to the next level firm by evidence of postmark within the seven-day period.

This provision for prompt payment shall be incorporated into each subcontract or second tier subcontract issued for work performed on the project or for services provided.

The Contractor may withhold up to 3% retainage if any subcontractor does not obtain a payment and performance bond for their portion of the work. If any retainage is held on subcontractors, all retainage shall be released within seven calendar days of satisfactory completion of all work. For the purpose of release of retainage, satisfactory completion is defined as completion of all physical elements and corresponding documentation as defined in the contract, as well as agreement between the parties as to the final quantities for all work performed in the subcontract. The Department will provide internal controls to expedite the determination and processing of the final quantities for the satisfactorily completed subcontract portions of the project.

Failure of any entity to make prompt payment as defined herein may result in (1) withholding of money due to that entity in the next partial payment until such assurances are made satisfactory to this provision; or (2) removal of an approved contractor from the prequalified bidders list or the removal of other entities from the approved subcontractors list.

## **MANDATORY SUBCONTRACTOR INFORMATION**

The Contractor is to provide a list of all proposed subcontractors he or she plans to use on this project. This list shall include all subcontractors that will be used, not only MBE, WBE or DBE firms. Only pre-approved subcontractors that are registered with the NCDOT may be used. A listing of all contractors (prime or subcontractor) may be found at the following website:

<https://partner.ncdot.gov/VendorDirectory/default.html>

Subcontract Approval Form (Form SAF) must be completed for each subcontractor that will be used and returned prior to the issuance of the purchase order. This form can be found at the following website:

[http://www.ncdot.org/doh/operations/dp\\_chief\\_eng/constructionunit/saf.xls](http://www.ncdot.org/doh/operations/dp_chief_eng/constructionunit/saf.xls)

If the proposed subcontractor cannot fulfill their obligation and a substitute must be used, then an appropriate form for the replacement subcontractor must be delivered to the administering officer before the new subcontractor is used.

**Failure to provide this information (regardless of any goals in contract) may result in the contract being awarded to another contractor.**

## **AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS**

*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 Article 108-13(E), of the *North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2012*.

## **LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC**

### **Laws to be Observed**

In accordance with 107-1 of the *Standard Specifications*, The Contractor shall keep himself fully informed of all Federal and State laws, all local laws, ordinances, and regulations, and all orders and decrees of bodies or tribunals having any jurisdiction or authority which may in any manner affect those engaged or employed in the work, or which in any way affect the conduct of the work. He shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall indemnify and hold harmless the Board of Transportation and the Department of Transportation and their agents and employees from any claim or liability arising from or based on the violation of any such law, ordinance, regulations, order, or decree, by the Contractor or by his agents and employees.

### **Responsibility For Damage Claims**

In accordance with 107-14 of the *Standard Specifications*, The Contractor shall indemnify and save harmless the Board of Transportation and its members and the Department of Transportation and its officers, agents, and employees from all suits, actions, or claims of any character brought for any injury or damages received or sustained by any person, persons, or property by reason of any act of the Contractor, Subcontractor, its agents or employees, in the performance of the contract.

### **Safety and Accident Protection**

In accordance with 107-21 of the *Standard Specifications*, The Contractor shall comply with all applicable Federal, State, and local laws, ordinances, and regulations governing safety, health, and sanitation, and shall provide all safeguards, safety devices, and protective equipment, and shall take any other needed actions, on his own responsibility that are 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.

All Contractors' personnel, all subcontractors and their personnel, and any material suppliers and their personnel shall wear a reflective vest or outer garment conforming to the requirements of MUTCD at all times while on the project.

## **BANKRUPTCY**

The Department of Transportation, at its option, may terminate the contract upon the filing by the contractor of any petition for protection under the provisions of the Federal Bankruptcy Act.

## **EXTENSION OF CONTRACT TIME**

Failure on the part of the Contractor to furnish bonds or certifications or to satisfy preliminary requirements necessary to issue the purchase order will not constitute grounds for extension of

the contract time. If the Contractor has fulfilled all preliminary requirements for the issuance of a purchase order, and the purchase order authorization is not available by the date of availability, the Contractor shall be granted an extension equal to the number of calendar days the purchase order authorization is delayed after the date of availability.

### **CLAIMS FOR ADDITIONAL COMPENSATION OR EXTENSION OF TIME**

Any claims for additional compensation and/or extensions of the completion date shall be submitted to the Division Engineer with detailed justification within thirty (30) days after receipt of the final invoice payment. The failure of the Contractor to submit the claim(s) within thirty days shall be a bar to recovery.

### **CONTRACTOR CLAIM SUBMITTAL FORM**

If the Contractor elects to file a written claim or requests an extension of contract time, it shall be submitted on the Contractor Claim Submittal Form (CCSF) available through the Construction Unit or [http://ncdot.org/doh/operations/dp\\_chief\\_eng/constructionunit/formsmanuals/](http://ncdot.org/doh/operations/dp_chief_eng/constructionunit/formsmanuals/).

### **PROSECUTION AND PROGRESS**

The Contractor will be required to prosecute the work in a continuous and uninterrupted manner from the time he begins the work until completion and final acceptance of the project. The contractor will not be permitted to suspend his operations except for reasons beyond his control except where the Engineer has authorized a suspension of the contractor's operations in writing.

The Contractor shall pursue the work diligently with workmen in sufficient numbers, abilities, and supervision, and with equipment, materials, and methods of construction as may be required to complete the work described in the contract by the completion date and in accordance with Section 108 of the *Standard Specifications*.

In the event that the Contractor's operations are suspended in violation of the above provisions, the sum of **Two Hundred Dollars (\$200.00)** will be charged the Contractor for each and every calendar day that such suspension takes place. The said amount is hereby agreed upon as liquidated damages due to extra engineering and maintenance costs and due to increased public hazard resulting from a suspension of the work. Liquidated damages chargeable due to suspension of the work will be additional to any liquidated damages that may become chargeable due to failure to complete the work on time.

### **TEMPORARY SUSPENSION OF WORK**

In accordance with Article 108-7 of the 2012 *Standard Specifications*, the Engineer will have the authority to suspend the work wholly or in part, any written order for such periods as he may deem necessary for any of the following reasons.

1. Conditions considered unfavorable for the suitable prosecution of the work, or
2. The Contractor's failure for correct conditions unsafe for workmen or the general public, or
3. The Contractor has not carried out orders given to him by the Engineer, or
4. The Contractor's failure to perform any provisions of the contract.

No extension of the completion date will be allowed for the above suspensions except as may be provided for in Article 108-10.

### **AUTHORITY OF THE ENGINEER**

The Engineer for this project shall be the Division Engineer, Division 11, Division of Highways, North Carolina Department of Transportation, acting directly or through his duly authorized representatives.

The Engineer will decide all questions which may arise as to the quality and acceptability of work performed and as to the rate of progress of the work; all questions which may arise as to the interpretation of the contract; and all questions as to the acceptable fulfillment of the contract on the part of the Contractor. His decision shall be final, and he shall have executive authority to enforce and make effective such decisions and orders as the Contractor fails to carry out promptly.

### **APPROVAL OF PERSONNEL**

The State shall have the right to approve or reject the project engineer and other supervisory personnel, assigned to a project.

The Engineers or any subcontractor for the Engineers which are employed to provide engineering services for this project shall not engage the services of any person or persons, now in the employment of the State during the time of this Agreement, without written consent of the State.

In the event of engagement, the Engineers or their subcontractors shall restrict such person or persons from working on any of the Engineers' contracted projects in which the person or persons were formerly involved while employed by the State. This restriction period shall be for the duration of the contracted project with which the person or persons was involved. "Involvement" shall be defined as active participation in any of the following activities:

- Drafting the contract;
- Defining the scope of the contract;
- Selection of the Engineers' firm for services;
- Negotiation of the cost of the contract (including calculating man-hours or fees); and
- Administration of the contract.



An exception to these terms may be granted when recommended by the Secretary and approved by the Board of Transportation. Failure to comply with the terms stated above in this section shall be grounds for termination of this contract.

### **SUPERVISION BY CONTRACTOR**

At all times during the life of the project the Contractor shall provide one permanent employee who shall have the authority and capability for overall responsibility of the project and who shall be personally available at the work site within 24 hours notice. Such employee shall be fully authorized to conduct all business with the subcontractors, to negotiate and execute all supplemental agreements, and to execute the orders or directions of the Engineer.

At all times that work is actually being performed, the Contractor shall have present on the project one competent individual who is authorized to act in a supervisory capacity over all work on the project, including work subcontracted. The individual who has been so authorized shall be experienced in the type of work being performed and shall be fully capable of managing, directing, and coordinating the work; of reading and thoroughly understanding the contract; and receiving and carrying out directions from the Engineer or his authorized representatives. He shall be an employee of the Contractor unless otherwise approved by the Engineer.

The Contractor may, at his option, designate one employee to meet the requirements of both positions. However, whenever the designated employee is absent from the work site, an authorized individual qualified to act in a supervisory capacity on the project shall be present.

Provisions shall be made so that a Supervisor can be contacted at any time during the work day during the length of the contract and during nights and weekends for the duration of any road closures.

### **CONTRACTOR PERSONNEL**

The Department will not be responsible in any way to the Contractor's personnel for damages, destruction or loss, from any cause, to the Contractor's equipment, supplies, materials or tools or the personal property of the Contractor's personnel. The Contractor will be responsible for all repairs, regardless of cost, resulting from the negligence of the Contractor or Contractor's employees. The Department will not participate in the cost of such repairs.

### **INSPECTION**

All work shall be subject to inspection by the Engineer at any time. Routinely, the Engineer will make periodic inspections of the completed work. It will be the responsibility of the Contractor to keep the Engineer informed of his proposed work plan and to submit written reports of work accomplished on a frequency to be determined by the Engineer.

## **MATERIALS AND TESTING**

The Engineer reserves the right to perform all sampling and testing in accordance with Section 106 of the *Standard Specifications* and the Department's "Materials and Test Manual." However the Engineer may reduce the frequency of sampling and testing where he deems it appropriate for the project under construction.

All steel products, which are permanently incorporated into this project, shall be domestically produced. The Contractor shall furnish a notarized certification certifying that steel products conform to this requirement.

The Contractor shall furnish the applicable certifications and documentation for all materials as required by the *Standard Specifications*. Material that is not properly certified will not be accepted.

## **COOPERATION BETWEEN CONTRACTORS**

The Contractor's attention is directed to Article 105-7 of the *2012 Standard Specifications*.

The Contractor on this project shall cooperate with Contractor(s) and state forces 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.

## **PLAN, DETAIL AND QUANTITY ADJUSTMENTS**

The Department reserves the right to make, at any time during the progress of the work, such alterations in plans or the details of construction as may be found necessary or desirable by the Engineer to complete the project.

## **OUTSOURCING OUTSIDE THE USA**

All work on consultant contracts, services contracts, and construction contracts shall be performed in the United States of America. No work shall be outsourced outside of the United States of America.

*Outsourcing* for the purpose of this provision is defined as the practice of subcontracting labor, work, services, staffing, or personnel to entities located outside of the United States.

The North Carolina Secretary of Transportation shall approve exceptions to this provision in writing.

## **DOMESTIC STEEL**

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.

## **LOCATING EXISTING UNDERGROUND UTILITIES**

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.

## **UTILITY CONFLICTS**

It shall be the responsibility of the Contractor to contact all affected utility owners and determine the precise locations of all utilities prior to beginning construction. Utility owners shall be contacted a minimum of 48 hours prior to the commencement of operations. Special care shall be used in working around or near existing utilities, protecting them when necessary to provide uninterrupted service. In the event that any utility service is interrupted, the Contractor shall notify the utility owner immediately and shall cooperate with the owner, or his representative, in the restoration of service in the shortest time possible. Existing fire hydrants shall be kept accessible to fire departments at all times.

The Contractor shall adhere to all applicable regulations and follow accepted safety procedures when working in the vicinity of utilities in order to insure the safety of construction personnel and the public.

## **GIFTS FROM VENDORS AND CONTRACTORS**

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, offer or, 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:

- (1) have a contract with a governmental agency; or
- (2) have performed under such a contract within the past year; or
- (3) 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 *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.

## **Special Provisions**

### **NOTES TO CONTRACTOR**

1. Refer to the *Standard Specifications for Roads and Structures and Roadway Standard Drawings dated January 2012* and any Special Provisions in contract for guidelines on this project.
2. All work performed by the contractor shall be in compliance with the *2012 Standard Specifications* and Workmanship/Appearance done to the satisfaction of the Engineer.
3. All work items necessary to complete the work other than listed on the "Bid Proposal Form" will be considered incidental in nature and no further compensation will be made. Any work performed in an unsatisfactory manner could be basis for cancellation of the contract.
4. Expansion joints to be repaired or replaced shall be designated by the Engineer. The Contractor shall begin work within 30 days of notification. Failure to respond within the designated time frame shall result in liquidated damages.
5. All concrete and/or asphalt repairs shall be designated by the Engineer. The Contractor shall begin work within 30 days of notification. Failure to respond within the designated time frame shall result in liquidated damages.
6. All areas of foam injections shall be designated by the Engineer. The Contractor shall begin work within 30 days of notification. Failure to respond within the designated time frame shall result in liquidated damages.
7. The contractor shall notify the Engineer/Supervisor at the beginning of each week of his intended schedule of work. This will allow the NCDOT to schedule inspections accordingly.
8. All existing joint material, concrete and asphalt removed during repairs shall become the property of the Contractor and shall be disposed of properly.

### **SITE INVESTIGATION AND REPRESENTATION**

The Contractor acknowledges that he has satisfied himself as to the nature of the work, and general and local conditions; particularly those bearing on transportation, availability of labor, State Regulations for safety and security of property, roads, and facilities required for the prosecution of the work, and all matters which can in any way affect the work, or cost thereof, under this contract. Any failure by the Contractor to acquaint himself with all the available information concerning these conditions will not relieve him from the responsibility for estimating properly the difficulty or cost of successfully performing the work.

## **STATE HIGHWAY ADMINISTRATOR TITLE CHANGE**

Revise the *2012 Standard Specifications* as follows:

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

## **EMPLOYMENT**

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.

## **E-VERIFY COMPLIANCE**

Contractors and subcontractors shall comply with the E-Verify requirements of N.C.G.S. Chapter 64, Article 2. Contractors are directed to review the foregoing laws. By signing this bid, any awarded Contractor certifies its compliance with the E-Verify requirements and will do so on a periodic basis thereafter as may be required by the Department.

## **CONTRACT BID QUANTITIES**

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 any 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.

Contractor's pricing shall be based on the estimated quantities per Division. These estimated amounts are submitted to assist contractors in the bidding process. Estimated quantities are not to be regarded as actual requirements. The State shall not be obligated to purchase any specific quantity.

## **DRIVEWAYS AND PRIVATE PROPERTY**

The Contractor shall maintain access to driveways for all residents and property owners throughout the life of the project.

The Contractor shall not perform work for private citizens or agencies in conjunction with this project or within the project limits of this contract.

## **SUBSURFACE INFORMATION**

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

## **WARRANTY – MATERIALS AND WORKMANSHIP**

All materials and workmanship shall be warranted for a period of one (1) year from the date of installation.

## **MOBILIZATION**

This work consists of preparatory work and operations to mobilize personnel, materials, and equipment to the project site(s).

The Contractor shall be paid a mobilization fee for each time work is requested for the purpose of performing work under this contract. Mobilization types are joint/deck repair work (line items 2-9), Concrete/Asphalt Deck Repair (line items 10-13), foam leveling/stabilization (line items 14-16), and epoxy coating system (line items 17-18). If work is requested for two or more locations on the same work request, only one mobilization charge will be paid. Travelling between work sites within Division 11 on the same work request will not be paid for as a separate Mobilization.

## **SILICON EXPANSION JOINT REPLACEMENT**

Contractor shall remove the existing expansion joint, clean the area in accordance with the manufacturer's recommendations, and place the silicon expansion joint in accordance with the manufacturer's recommendations. The expansion joint shall be replaced with the materials stated in this contract.

All materials shall be delivered unopened in their original containers bearing the manufacturer's label, date of manufacture, batch number, trade name brand, and quantity. Sufficient material to perform the entire expansion joint shall be "on hand" prior to removing the existing expansion joint. Stored materials may be inspected prior to their use and shall meet the requirements of these provisions. Each shipment of repair material shall be accompanied by Material Safety Data

Sheets (MSDS) and a certificate of compliance certifying that the materials conform to the requirements of these provisions.

The repair material shall be one of the following approved products:

Joints less than or equal to one (1) inch in width:

**Sealant – Dow 888**

**or other approved NCDOT material**

**Baysilon 960 (silicon based)**

Joints greater than one (1) inch in width:

**Sealant – Dow 902 (silicon based)**

**or other approved NCDOT material**

The entire cost for the silicon expansion joint replacement including but not limited to labor, maintenance, equipment, tools, and incidentals will be included in the unit prices for Silicon Joint Replacement.

Payments shall be made under:

Silicon Joint Replacement (1" wide or less) .....Linear Feet

Silicon Joint Replacement (1" to 2" wide).....Linear Feet

Silicon Joint Replacement (greater than 2" wide).....Linear Feet

### **EVAZOTE EXPANSION JOINT REPLACEMENT**

Contractor shall remove the existing expansion joint, clean the area in accordance with the manufacturer's recommendations, and place the evazote expansion joint in accordance with the manufacturer's recommendations. Contractor shall have a manufacturer's representative present during the installation of the first evazote expansion joint of the project. The expansion joint shall be replaced with the materials stated in this contract.

All materials shall be delivered unopened in their original containers bearing the manufacturer's label, date of manufacture, batch number, trade name brand, and quantity. Sufficient material to perform the entire expansion joint shall be "on hand" prior to removing the existing expansion joint. Stored materials may be inspected prior to their use and shall meet the requirements of these provisions. Each shipment of repair material shall be accompanied by Material Safety Data Sheets (MSDS) and a certificate of compliance certifying that the materials conform to the requirements of these provisions.

#### **Evazote Joint Seal Specifications**

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 low-density closed cell, cross-linked ethylene vinyl acetate polyethylene copolymer nitrogen blown material for the seal. Use seals manufactured with grooves 1/8" (3 mm) ± wide by 1/8" (3 mm) ± deep and spaced



between 1/4 (6 mm) and 1/2 inch (13 mm) apart along the bond surface running the length of the joint. Use seals sized so that the depth of the seal 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 inch (6 mm). Splice the seal using the heat welding method by placing the joint material ends against a Teflon heating iron of 350°F (177°C) for 7 - 10 seconds, then pressing the ends together tightly. Do not test the welding until the material has completely cooled. Use material that resists weathering and ultraviolet rays. Provide a seal that has a working range of 30% tension and 60% compression and is watertight along its entire length including the ends. Have the top of the evazote seal clearly shop marked. Inspect the evazote seals upon receipt to ensure that the marks are clearly visible upon installation.

Provide seals that meet the requirements given below:

TEST	TEST METHOD	REQUIREMENT
Elongation at break	ASTM D3575	210 ± 15%
Tensile strength, psi (kPa)	ASTM D3575	110 ± 15 (755 ± 100)
Compression Recovery (% of original width)	AASHTO T42 50% compr. for 22 hr. @ 73°F (23°C) 1/2 hr. recovery	87 ± 3
Weather/Deterioration	AASHTO T42 Accelerated Weathering	No deterioration for 10 years min.
Compression/Deflection	@ 50% deflection of original width @ 50% deflection of original width	10 psi (69 kPa) min. 60 psi (414 kPa) max.
Tear Strength, psi (kPa)	ASTM D624	16 ± 3 (110 ± 20)
Density	ASTM D545	2.8 to 3.4
Water Absorption (% vol/vol)	ASTM D3575 Total immersion for 3 months	3

### Adhesives

Use a two component, 100% solid, modified epoxy adhesive with the seal that meets the requirements of ASTM C881, Type 1, Grade 3, Class B & C and has the following physical properties:

Tensile strength	3500 psi (24.1 MPa) min.
Compressive strength	7000 psi (48.3 MPa) min.
Shore D Hardness	75 psi (0.5 MPa) min.
Water Absorption	0.25% by weight

Use an adhesive that is workable to 40°F (4°C). When installing in temperatures below 40°F (4°C) or for application on moist, difficult to dry concrete surfaces, use an adhesive specified by the manufacturer of the joint material.

### Joint Preparation

After removal of existing joint, area must be sand-blasted immediately prior to installation of the new joint. Blasting medium shall be a non-silica product. Blasting medium shall be swept up and removed from the project. Traffic shall be protected from blasting operations. Joint shall be re-cleaned (and re-blasted if necessary), if joint installation is delayed and joint is determined to be unsuitable due to dirt, oils, etc. Exact size of joint seals to be used where joints have been repaired with elastomeric concrete shall be determined after the elastomeric concrete work is completed.

### Sawing the Joints

When sawing the joint to receive the evazote seal, always use a rigid guide to control the saw in the desired direction. To control the saw and to produce a straight line, 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 compression seals.

The desired depth is the depth of the seal plus 1/4 inch (6 mm) above the top of the seal plus approximately 1 inch (25 mm) 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" (6 mm) chamfer.

Remove any staining or deposited material resulting from sawing with a wet blade to the satisfaction of the Engineer.

Use extreme care to saw the joint straight to the desired width and to prevent any chipping or damage to sawed edges of the joint.

### Seal Installation

Do not install the joint seal if the ambient air temperature is below 45°F (7°C).

Begin installation at the low end of the joint after applying the mixed epoxy to the sides of both the joint material and both sides of the joint, making certain to completely fill the grooves with epoxy. With gloved hands, compress the material and with the help of a blunt probe, push it down into the joint until it is recessed approximately 1/4 inch (6 mm) below the surface. Do not push the seal at an angle that would stretch the material. Once work on a joint begins, do not stop until it is completed. Clean the excess epoxy off the surface of the joint material quickly and thoroughly. Do not use solvents to remove excess epoxy. Remove excess epoxy in accordance with the joint manufacturer's recommendations.

The entire cost for the Evazote expansion joint replacement including but not limited to labor, maintenance, equipment, tools, saw cutting, and incidentals will be included in the unit prices for Evazote Joint Replacement.

It will be at the Engineer's discretion whether the evazote expansion joint will be installed in the correctly prepared existing opening or will be installed in a sawed joint opening. There will be no additional compensation for sawing the joint opening to accept the evazote.

Payments shall be made under:

Evazote Joint Replacement.....Linear Feet

## **V-SEAL EXPANSION JOINTS**

Contractor shall remove the existing expansion joint, clean the area in accordance with the manufacturer's recommendations, and place the V-Seal expansion joint in accordance with the manufacturer's recommendations. The expansion joint shall be replaced with the materials stated in this contract or an approved equal.

All materials shall be delivered unopened in their original containers bearing the manufacturer's label, date of manufacture, batch number, trade name brand, and quantity. Sufficient material to perform the entire expansion joint shall be "on hand" prior to removing the existing expansion joint. Stored materials may be inspected prior to their use and shall meet the requirements of these provisions. Each shipment of repair material shall be accompanied by Material Safety Data Sheets (MSDS) and a certificate of compliance certifying that the materials conform to the requirements of these provisions.

### **Seals**

Use an inverted "V" shaped , preformed extruded ethylene propylene diene monomer (M-class) rubber (EPDM), or silicone rubber seal compatible with concrete and resistant to abrasion, oxidation, oils, gasoline, salt and other materials that are spilled on or applied to the surface. Seal shall be secured to concrete surfaces with a single component silicone locking adhesive and a primer, or with a quick setting epoxy adhesive.

Use seals set in a sawed joint opening with a depth that meets the manufacturer's recommendation, and is not less than ½" below the top of the deck slab at the opening's minimum width specified in the plans. **Seals edges shall be set on the bottom of the sawed joint opening that is at least 1/8" wide.** Provide a seal that has a working temperature range of 0oF to 120oF and meets the requirements given below.

TEST	TEST METHOD	REQUIREMENT
Tensile Strength	ASTM D412	1,000 psi (min.)
Elongation at Break	ASTM D412	300% (min.)
Tear Strength	ASTM D624	100 ppi (min.)
Compression Set 212 °F @ 70 hrs.	ASTM D395	30% (max.)
Water Resistance	ASTM D471	70 hrs. @ 212 °F
Durometer (Shore A)	ASTM D2240	55-65 +/-5

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

#### Bonding Adhesive

For silicone adhesive, use a single component, 100% solid, silicone locking adhesive supplied by the joint seal manufacturer that meets the following requirements:

TEST	TEST METHOD	REQUIREMENT
Tensile strength	ASTM D412	200 psi (min.)
Tack Free Time	ASTM C679	20 minutes (max.)
Cure Time (1/4" Bead)	ASTM C679	24 hours (max.)
Resistance to UV	ASTM C793	No cracking, ozone chalking, or degradation
Elongation to Break	ASTM D412	450% (min.)

For epoxy adhesive, use a quick setting two-component thixotropic paste that is mixed in strict conformance to the manufacturer's instructions. Epoxy adhesive shall be supplied by the joint seal manufacturer and shall meet the following requirements:

TEST	TEST METHOD	REQUIREMENT
Tensile strength	ASTM D638	7000 psi (min.)
Bond Strength to Concrete	ASTM C881	1000 psi (min.)
Peel Adhesion	ASTM C794	50 pli
Gel Time		8 minutes
Pot Life		45 minutes
Cure Time		24 hours (max.)

Use an adhesive that is workable to 45°F. When installing in ambient air or surface temperatures below 45°F or for application on moist, difficult to dry concrete surfaces, use an adhesive specified by the manufacturer of the joint seal.

#### Sawing the Joint

The joint opening shall be initially formed to the width shown on the plans including the blackout 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 joint 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 of the saw cut is the depth of the seal plus 1/2" minimum above the top of the seal at the minimum sawed joint width. An irregular bottom of sawed joint is permitted as indicated on the plans. Maximum surface amplitude at the bottom of the saw cut joint is 1/8". 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.

#### Preparation of Sawed Joint for 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. Seals shall be secured to substrate that is clean and sound.

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.

#### Seal Installation

Install the joint seal according to the manufacturer's procedures and recommendations and as recommended herein. 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 required seal length shown in the plans. Splices in joint seals will not be permitted. 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. The joint seal shall be installed to strict conformance

with the manufacturer's requirements for atmospheric conditions, concrete surface preparation, mixing and application of adhesive, seal material installation procedure, minimum cure time prior to exposure to traffic, as well as worker health and safety. Once work on placing a seal begins, do not stop until it is completed. Clean any excess adhesive from the top of the joint seal immediately with a trowel. Do not use solvents or any cleaners to remove the excess adhesive from the top of the seal. Remove the protective cover at the joint edges and check for any adhesive on concrete surfaces. Remove excess adhesive 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 synthetic rubber joint seals.

Joints one (1) inch to two (2) inches in width:

V-Seal 300 or Other Approved NCDOT Material

Joints two (2) inches to three and a half (3 ½") inches in width:

V-Seal 400 or Other Approved NCDOT Material

Payments shall be made under:

V-Seal 300 Expansion Joint Replacement. . . . . Linear Feet

V-Seal 400 Expansion Joint Replacement. . . . . Linear Feet

**ASPHALT JOINT REPAIR AND REPLACEMENT**

Joint material shall be hot applied, pre-mixed bituminous material that will provide a smooth riding surface and a waterproof joint. The contractor shall prepare the surface to be repaired by saw cutting to a minimum of 20" wide and 2" in depth, per manufacture's specifications, or as directed by the Engineer, removing all loose material, and cleaning the area with compressed air.

No repairs shall be made during periods of rain, snow, or sleet. Standing water shall be removed prior to placement of material.

Steel bridging plates shall be used as needed to provide load transfer across the joint opening. Plates shall be plate steel, 1/8" to 1/4" thick, and 4" to 9" wide.

Bulking aggregate shall be chosen from the Basalt, Gritstone, Gabbro, or Granite Family. Only ½" to 1" size stone shall be used.

Material Requirements

All materials shall meet the specifications as approved by the Engineer prior to use. The joint material shall be one of the following approved products:

FibreJoint, A/P Bridge Flex Joint, Wabo Expandex, or other NCDOT approved material.

Payments shall be made under:

Asphalt Joint Repair/Replacement (18"-24" wide, w/ plate).....Cubic Foot

## **ELASTOMERIC CONCRETE PLACEMENT**

Contractor shall repair damaged concrete adjacent to expansion joints as directed by the Engineer with elastomeric concrete.

Contractor shall submit falsework plans for approval. Falsework plans shall take into account expansion of the bridge deck due to changes in temperature.

Do not place elastomeric concrete if the ambient air temperature is below 45°F (7°C). Prepare and apply a primer, as per manufacturer's recommendations, to all vertical concrete faces, all steel components to be in contact with elastomeric concrete, and to areas specified by the manufacturer. Align the angles with the joint opening.

Prepare, batch, and place the elastomeric concrete in accordance with the manufacturer's instructions. Place the elastomeric concrete while the primer is still tacky and within 2 hours after applying the primer. Pay careful attention to properly consolidate the elastomeric concrete around the steel and anchors.

Tarps are to be utilized under the mixing areas, and the bridge deck joint shall be taped off to protect the bridge deck from spills during elastomeric concrete installation.

## **ELASTOMERIC CONCRETE (1-27-10)**

### **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).

<b>ELASTOMERIC CONCRETE PROPERTIES</b>	<b>TEST METHOD</b>	<b>MINIMUM REQUIREMENT</b>
Compressive Strength, psi (MPa)	ASTM D695	2000 (13.8)
5% Deflection Resilience	ASTM D695	95
Splitting Tensile Strength	ASTM D3967	625 (4.31)
Bond Strength to Concrete, psi (MPa)	ASTM D882 (D882M)	450 (3.10)
Durometer Hardness	ASTM D2240	50

<b>BINDER PROPERTIES (without aggregate)</b>	<b>TEST METHOD</b>	<b>MINIMUM REQUIREMENT</b>
Tensile Strength, psi (MPa)	ASTM D638	1000 (6.89)
Ultimate Elongation	ASTM D638	150%
Tear Resistance, lb/in (kN/m)	ASTM D624	200 (34.9)

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 4 certification in accordance with article 106-3 (F) 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 MATERIAL CERTIFICATION AND INSTALLATION**

Provide a Type 5 certification in accordance with article 106-3 (F) of the Standard Specifications, verifying that the materials satisfy the above requirements and proof of NCDOT prequalification.

Prior to placing the elastomeric concrete, thoroughly clean and dry all concrete surfaces. Sandblast the concrete surface in the blockout and clear the surface of all loose debris.

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.

#### **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.

The entire cost for joint repair using elastomeric concrete including but not limited to labor, maintenance, equipment, tools, and incidentals will be included in the unit prices for Joint Repair using Elastomeric Concrete. Linear feet measurement will include both sides of the joint to be repaired.

Payments shall be made under:

Joint Repair using Elastomeric Concrete.....Cubic Feet

#### **CONCRETE/ASPHALT DECK REPAIR (FIBRECRETE B OR EQUIVALENT)**

Concrete/asphalt repairs shall be made using the following approved Hot Applied Flexible Repair Material:

Fibrecrete B or Approved NCDOT equal

The Contractor shall prepare areas by removing any loose debris using a pavement breaker, by using a mechanical planer or as directed by the Engineer. The recess is then cleaned and dried using hot compressed air to thoroughly prepare the surface, removing all debris and loose material. The Hot Applied Flexible Repair Material is immediately poured and screeded to fill the recess flush with the surrounding area and overlap the edges. While the material is still molten, a preheated high P.S.V. aggregate is applied to the surface.

When repairing pot holes from 1-1/2” to full depth, the Contractor will include 1/2” – 1” washed aggregate at the rate of no more than 30% of volume as directed by the Engineer. The balance of the repair will be completed as previously stated.

All materials shall be delivered unopened in their original containers bearing the manufacturer’s label, specifying date of manufacture, batch number, trade name or brand and quantity.

Sufficient material to perform the entire repair application shall be in storage at the site or at the Contractors facility prior to any field preparation, so that there shall be no delay in procuring the material for each day’s application.

Stored materials may be inspected prior to their use and shall meet the requirements of these Special Provisions at the time of use.

Any material which is rejected because of failure to meet the required tests or that has been damaged so as to cause rejections shall be immediately replaced by the Contractor at no additional cost to the Department.

Each shipment of the Hot Applied Flexible Repair Material shall be accompanied by Material Safety Data Sheets (MSDS) and a Certificate of Compliance certifying that the materials conform to the requirements as approved by NCDOT Materials and Test Unit.

#### Basis of Payment

The quantity of Hot Applied Flexible Repair Material for which payment will be made will be the actual pounds of material used. Payment shall be in full compensation for all labor, tools, equipment and incidentals necessary for the completion of the work. Payment shall be made as follows:

Concrete/Asphalt Deck Repair (Fibrecrete B or NCDOT Approved Equivalent) .....Cubic Foot

#### **CONCRETE/ASPHALT DECK REPAIR (FIBRECRETE G OR EQUIVALENT)**

Concrete/asphalt repairs shall be made using the following approved Hot Applied Flexible Repair Material:

Fibrecrete G or NCDOT Approved Equal

The Contractor shall prepare areas by removing any loose debris using a pavement breaker, by using a mechanical planer or as directed by the Engineer. The recess is then cleaned and dried using hot compressed air to thoroughly prepare the surface, removing all debris and loose material. The Hot Applied Flexible Repair Material is immediately poured or screeded to fill the recess and overlap the edges. While the material is still molten, a preheated high P.S.V. aggregate is applied and then compacted to ensure that the finished repair is flush with the surrounding area.

When repairing pot holes from 1-1/2” to full depth, that are not adjacent to or spanning a joint, the Contractor will include 1/2” – 1” washed aggregate at the rate of no more than 30% of volume as directed by the Engineer. The balance of the repair will be completed as previously stated.

All materials shall be delivered unopened in their original containers bearing the manufacturer’s label, specifying date of manufacture, batch number, trade name or brand and quantity.

Sufficient material to perform the entire repair application shall be in storage at the site or at the Contractors facility prior to any field preparation, so that there shall be no delay in procuring the material for each day’s application.

Stored materials may be inspected prior to their use and shall meet the requirements of these Special Provisions at the time of use.

Any material which is rejected because of failure to meet the required tests or that has been damaged so as to cause rejections shall be immediately replaced by the Contractor at no additional cost to the Department.

Each shipment of the Hot Applied Flexible Repair Material shall be accompanied by Material Safety Data Sheets (MSDS) and a Certificate of Compliance certifying that the materials conform to the requirements as approved by NCDOT Materials and Test Unit.

#### Basis of Payment

The quantity of Hot Applied Flexible Repair Material for which payment will be made will be the actual pounds of material used. Payment shall be in full compensation for all labor, tools, equipment and incidentals necessary for the completion of the work. Payment shall be made as follows:

Concrete/Asphalt Deck Repair (Fibercrete G or Equivalent) .....Cubic Foot

### **CLASS II CONCRETE DECK REPAIRS – HES CONCRETE**

Class II Surface Preparation (Partial Depth): Remove by chipping with hand tools (or hydrodemolition) all loose, unsound and contaminated deck concrete to an average depth of approximately one half the deck thickness, but no less than 3/4 inch below the top mat of steel. In areas where the entire perimeter of the reinforcing steel bar is exposed, chip or use hand-held high velocity water-jet equipment to provide a minimum depth of 3/4 inch below the bar. Use a small chipping hammer (15 lb. class) to prepare the edges of the repair area to limit micro fractures. Dispose of the removed concrete, clean, repair or replace rusted or loose reinforcing steel, and thoroughly clean the newly exposed surface. Use a bonding agent in accordance with the manufacturer’s recommendations.

Care shall be taken not to cut, stretch, or damage any exposed reinforcing steel.

In overhangs, removing concrete areas of less than 0.60 sf/ft length of bridge without overhang support will be permitted unless the Engineer directs otherwise. For concrete areas greater than 0.60 sf/ft length of bridge, approval of the overhang support will be required.

Refill areas where concrete was removed with a NCDOT approved high-early concrete material up to the finished deck surface and cure in accordance with the material manufacturer's recommendations. Provide a broom finish.

#### Bases of Payment

The quantity of Class II Concrete Deck Repairs for which payment will be made will be the actual square footage of concrete deck repaired. Payment shall be in full compensation for all labor, tools, equipment and incidentals necessary for the completion of the work. Payment shall be made as follows:

Class II Concrete Deck Repairs – HES Concrete (0 – 15 SF).....SF

Class II Concrete Deck Repairs – HES Concrete (more than 15 SF).....SF

### **HDPF (HIGH DENSITY POLYURETHANE FOAM) PROCESSES – GENERAL AND SLAB LEVELING, UNDERSEALING AND VOIDFILLING**

#### Material

The medium used for slab leveling, undersealing and voidfilling shall be a blown high-density polyurethane. The material shall be hydrophobic.

The high-density, closed cell, polyurethane system shall exhibit the following physical characteristics and properties:

<b>DENSITY, Lbs/Ft</b>	<b>COMPRESSIVE STRENGTH</b>
ASTM 1622	ASTM 1621
3.0	40 psi
3.5	50 psi
4.0	60 psi
6.0	110 psi

The polyurethane foam system will have a free rise density of 3.0 – 4.2 lb/ft, with a minimum compressive strength of 40 psi. The expansion of the polyurethane foam under pressure increases the foam density above the original free rise density value. The compressive strength is a function of density of the tested material; therefore the foam produced during the lifting process will normally have a higher compressive strength than foam produced without restriction (free rise).

#### Equipment

A listing of lifting and under sealing equipment shall be submitted to the Engineering Department for review. The minimum list of equipment required shall be as listed below. The listing is a minimum and shall not preclude the use of additional equipment.

- A. A pneumatic drill and an electric drill capable of drilling 5/8"- 3/4" dia. holes.
- B. A dynamic penetrometer.
- C. A truck-mounted pumping unit capable of injecting the high-density polyurethane formulation below the concrete slab or asphalt pavement into the sub-surface soils. This pumping unit will be capable of controlling the rate of rise of the pavement and densifying the sub-surface soils.
- D. A laser level or dial indicator devices capable of monitoring and verifying that the concrete slab or asphalt pavement is raised to the required elevation.

#### Contractor Pre-Qualification Requirements

The contractor shall have a minimum of three years of experience in performing this type of work and a minimum of 10 projects on which the contractor has successfully completed this type of work. Prior to beginning work, the contractor shall submit certification to the engineer that the contractor meets the minimum required experience. The certification shall include a listing of previous clients with contact name and phone numbers.

Prior to being approved for performing this type of work, the following documents shall be supplied by the contractor to the engineer and found to be acceptable:

- (a) A report from an industrial hygienist who has conducted a personnel, production vehicle and typical jobsite safety review of the contractor's implementation procedures involving the polyurethane material.
- (b) A copy of the contractor's Employee Safety Manual specific to polyurethane pavement raising and undersealing work.

#### Construction Methods

Final elevations shall be within 1/4" of the elevations proposed by profile, to the extent permitted by the structure, existing construction and site conditions. A tight string line may be used to monitor and verify elevations for slab lengths of 50 foot or less. For longer sections, a laser level will be used to monitor and verify elevations. Elevations can also be verified by flooding the area to confirm that the paving has been realigned properly. The Contractor shall be responsible for any pavement blowouts or excessive pavement lifting which may result from process and shall repair the damaged area to the satisfaction of the Engineer without additional cost.

The HDPF shall reach 90% of the full compressive strength in 15 minutes after injection.

#### **HDPF Slab Leveling, Undersealing and Voidfilling**

For leveling and undersealing, the Contractor shall prepare concrete to be leveled by profiling existing pavement and determining where the pavement needs to be raised. Voidfilling shall be in areas as indicated and as directed by the engineer. A series of 5/8" holes shall be drilled into the pavement 6-8 foot O.C. (exact location and spacing to be determined in the field). The expanding HDPF material shall then be injected under the slab. The amount of rise shall be controlled by regulating the rate of HDPF injected. Injection holes shall be sealed with non-expansive cementitious grout once leveling is complete.

### Measurement

The polyurethane material shall be paid for by the pound, which will include furnishing and injecting material.

Double Verification of Actual Pounds pumped will be accomplished as follows:

1. A conversion from pump counters to pounds will be provided with a manufacturer's certification of the accurate conversion factor.
2. A visual measurement conversion on the actual totes/barrels of pounds per inches pumped.

### Basis of Payment

The quantity of material to be paid for shall be the quantity actual used, based on the contract unit price shown on the bid form. Only those items shown on the bid sheet shall be paid for directly. All other labor, tool, equipment, and incidentals necessary for the completion of the project shall be considered incidental to the contract bid items.

Payment shall be made as follows:

HDPF Slab Leveling, Undersealing and Voidfilling.....Pounds

## **HYDROPHOBIC FOAM SOIL STABILIZATION**

### Important Notice

Inject hydrophobic polyurethane injection resin into the soil at locations to be determined by the Engineer to stabilize weak and loose soils and prevent water migration.

Specification describes pressure injection of soils to stabilize weak and loose soils and stop water migration through injected soils using a hydrophobic polyurethane injection resin.

### **Part 1 – General**

#### **1.01 Purpose**

- A. Furnish all materials, labor, tools, and equipment to stabilize soils as indicated on drawings or in contract documents.

#### **1.02 Related Work**

- A. None

#### **1.03 Quality Assurance**

- A. Manufacturer of polyurethane material shall have been in existence for a period of not less than 15 (fifteen) years.

1. The contractor must provide the engineer with job references where they successfully used hydrophobic polyurethane resins for soil stabilization.

#### **1.04 Delivery, Storage, and Handling**

- A. Deliver the specified products in original, unopened containers with manufacturer's name, labels, product identification, and batch numbers intact.
- B. Store and condition the specified product as recommended by the manufacturer.

#### **1.05 Job Conditions**

- A. Do not apply the material if it is or it appears that it will be raining or snowing unless precautions are taken to protect the material from moisture. If temperature is or will be below 34 degrees F, protect grout from freezing. Ice or the formation of ice can prevent grout penetration and travel.
- B. Contractor will take all precautions necessary to insure that no damage will occur to any work zone due to handling or pumping of the polyurethane resin.

### **Part 2 – Materials**

#### **2.01 Acceptable Manufacturers**

- A. Prime Flex 910 is considered to conform to the requirements of this specification and has performed satisfactorily for soil stabilization.
- B. The use of any other similar product will be considered providing the contractor requests its use in writing to the Engineer.

#### **2.02 Performance Criteria**

- A. Physical properties of polyurethane resin:
  1. Water activated resin
  2. Variable cure rate
  3. Viscosity – 40 cps +/- 20 cps
  4. Solids content – 100% solids
  5. Characteristics – Hydrophobic polymer
- B. Physical properties of catalyst:
  1. Appearance – Clear liquid
  2. Viscosity – 15-20 cps
  3. Solids content – 100%
- C. Physical properties of polyurethane resin cured under pressure:
  1. Shrinkage (ASTM D-1042 / D-756) – None
  2. Tensile properties (ASTM D-1623)
    - a. Tensile strength – 23 psi
    - b. Elongation – 3%

## **2.03 Materials**

### **A. Polyurethane Resin**

1. Polyurethane resin shall be a single component material that requires catalyst. Adjusting the percentage of catalyst to the base resin shall control reaction time of the grout.
2. Material shall be a water reactive grout.
3. Polyurethane resin shall be based on MDI in combination with pre-polyols.
4. Polyurethane resin shall be hydrophobic in nature.

## **Part 3 – Execution**

### **3.01 Preparation**

- A. Prior to starting work the Contractor is responsible for locating all underground utilities in accordance with NCGS Chapter 87. This may be done by contacting the NC One-Call Center (811).
- B. Contractor shall determine appropriate spacing and depth placement for injection probes to successfully seal and stabilize area as shown in drawings. Test sections may be necessary to determine best probe spacing depending on soil types and conditions encountered. (Typical spacing will vary between 12-60” in each direction and if multiple rows are needed then each row shall be offset ½ the space distance.) Probes: Pipe shall utilize Prime Resins Soil Probe, Expendable Drive Point, or other acceptable means to keep dirt from clogging pipe during driving. Type and size to be determined by contractor. Pipes may be placed by manual driver, pneumatic driver, auger, or water jetting.
- C. Prior to injecting grout, contractor shall ensure that the soils contain enough moisture to fully reach the grout OR shall use a plural component pump to inject water and grout simultaneously (twin streaming) through injection pipe/probe. When twin streaming is done, a ratio of 10:1 (grout to water) shall be used. A pump capable of injection pressures from 100-3000 psi is recommended. Flow rate of pumps shall be 1.50 gpm minimum. Manually operated or “hand pumps” are considered unacceptable and cannot be used.
- D. A grout log shall be maintained recording amount of grout and percentage of catalyst used for each pipe/probe and shall be available for inspection by the Engineer at all times. Request for payment of grout shall include a copy of grout log detailing quantities used.

### **3.02 Application**

- A. Contractor shall determine amount of grout to be injected into each probe to ensure all areas with the work area are fully grouted. Grouting shall use the “Lift Grouting Technique” where the pipe is raised or jacked up and grout is injected in 12-15” intervals or lifts. The amount of grout to be injected at each lift is to be determined by the contractor based on soil conditions for that particular area. Injection pressures will vary depending on soil conditions.
- B. Adhere to all limitations and cautions set forth by the manufacturer.

### **3.03 Safety**

- A. Copy of data sheet and Material Safety Data Sheet (MSDS) of all chemicals used must be on site at all times.
- B. Workers must wear protective rubber gloves, full protection (front and side) safety glasses, chemical goggles or face shield, and any other necessary precautions as outlined in product MSDS when handling or pumping grout.



- C. All chemicals used on site including grout, catalyst, and chemicals to clean pumps and equipment shall be non-flammable.

### **3.04 Cleaning**

- A. Flush the pump and hoses with approved pump flush. Do not use solvents to clean off human skin.
- B. Uncured polyurethane resin can be removed from tools with an approved solvent. Cured polyurethane can only be removed mechanically.
- C. Remove all pipes from work area.
- D. Leave work area clean and neat.

### **Basis of Payment**

The quantity of material to be paid for shall be the quantity actual used, based on the contract unit price shown on the bid form. Only those items shown on the bid sheet shall be paid for directly. All other labor, tool, equipment, and incidentals necessary for the completion of the project shall be considered incidental to the contract bid items. Payment shall be made as follows:

Hydrophobic Foam Soil Stabilization .....Gallons

## **STRUCTURAL FOAM VOID FILL/SLAB STABILIZATION**

### **Important Notice**

The information contained herein related to material selection, installation techniques and instruction is general in nature and may not be applicable to a particular project. Specific installation procedures and material requirements should be determined after careful analysis of the conditions and desired results of the actual project.

**This specification describes stabilizing slabs / structures with voids to prevent further movement or settling using a structural, two component polyurethane foam.**

### **Part 1 General**

#### **1.01 Purpose**

- A. Furnish all material, labor, tools, and equipment to stabilize concrete slabs or fill voids.

#### **1.02 Related Work**

- A. None

#### **1.03 Quality Assurance**

- A. Manufacturer of polyurethane resin material shall have been in existence for a period of not less than five (5) years.
- B. The contractor must supply the Engineer with 10 (ten) job references where they successfully injected polyurethane resin for slab stabilizing and void filling applications.
- C. Contractor shall provide submittals prior to commencement of work that details the material to be used and that it conforms to the project specifications.

## 1.04 Delivery, Storage, and Handling

- A. Deliver the specified product in original, unopened containers with the manufacturer's name, label, product identification, and batch numbers intact and readable.
- B. Store and condition the specified product as recommended by the manufacturer.

## Part 2 Materials

### 2.01 Acceptable Materials

- A. Prime-Flex 985 (LX-10 or LX-20) Structural Foam or an NCDOT approved equivalent.
  - 1. Material shall be a two (2) component, structural polyurethane foam
  - 2. Cured foam shall be closed cell.
  - 3. Minimum compressive strength of cured foam shall be 40-60 psi.
  - 4. Minimum expansion rate shall be 10:1 by volume (free rise).
  - 5. Heat shall not be used or required to activate foam.
  - 6. Maximum exothermal temperature to not exceed 270 degrees F per (10 cu. Ft.)
- B. The use of a product other than specified will be considered providing the contractor requests its use in writing to the Engineer. The proposed substitute product must meet or exceed the specified performance criteria and tested in accordance with the specified test standards. The proposed substitute must have been successfully used in at least 5 void fill projects. Instant or rapid set (less than 5 minutes) foams will not be approved due to lack of migration time needed for material travel.

### 2.02 Performance Criteria

- A. Properties of the mixed polyurethane resin for void filling and stabilizing:

1.	Mix ratio (by volume)	1:1 (A:B)
2.	Initial reaction time:	@ 72°F (23°C) 70 sec.
3.	Set Time:	8 min.
4.	Expansion (free rise)	10:1*
5.	Viscosity:	Part "A"        270 cps Part "B"        280 cps
6.	Compressive Strength (ASTM D-1621)	LX-10        60 psi @4.5 lb density - 9216 psf*

\* Expansion is affected by field conditions. Actual results may vary depending on temperature, mixing equipment and degree of constraint

## Part 3 Execution

### 3.01 Mixing and Application.

- A. Mixing of the polyurethane resin:
  - 1. Automated 1:1 ratio positive displacement bulk pumps such as "The Flowmaster Pump" (Prime Resins, Inc., Conyers, GA. 800-321-7212 or [www.primeresins.com](http://www.primeresins.com)) may be used to mix and dispense material. Follow manufacturer's recommendations for mixing and application.

B. Placement procedure:

1. Locate and mark areas with voids.
2. Using a drill, drill a series of holes as determined by contractor or engineer based on actual site conditions over area to be grouted. Over large areas stagger holes in an offset grid pattern by one half the distance spacing per row. Manufacturer of polyurethane resin can be contacted for assistance in hole pattern.
3. Use a 1/4" (inch) rod, dowel, or other instrument to determine depth of void under slab. After determining amount of void, calculate approximate amount of resin needed.
4. Using meter-mix, positive displacement pump, inject amount needed (to be based on field conditions) of Prime-Flex 985 Structural Foam to fill void.
7. After removing injection nozzle from hole it may be left open for venting of excess foam or plugged of with a wood dowel or other means. Removing plugs will also assist in relieving pressure by allowing excess foam to release out top.
8. After foam has fully reacted shave excess from slab surface. Holes may be left filled with foam or drilled out and filled as directed by engineer or owner.

### 3.02 Cleaning

- A. Clean the substrate to produce a finish appearance acceptable to the Engineer and Owner.
- B. Cured polyurethane foam can only be removed mechanically. All debris must be disposed of properly.
- C. Leave work area neat, clean, safe and without evidence of spillovers onto adjacent areas.

### Basis of Payment

The quantity of material to be paid for shall be the quantity actual used, based on the contract unit price shown on the bid form. Only those items shown on the bid sheet shall be paid for directly. All other labor, tools, equipment, and incidentals necessary for the completion of the project shall be considered incidental to the contract bid items. Payment shall be made as follows:

Structural Foam Void Fill/Stabilization.....Gallons

## **EPOXY COATING SYSTEM**

### Description

This work shall consist of furnishing and applying a two-coat or one coat epoxy overlay system over the concrete bridge deck in accordance with the contract documents and includes a crack filling and repairing overlay consisting of a pre-treatment and either one (1) or two (2) layers of hybrid polymer resins with a special blend of extremely hard aggregate designed to provide a 3/8 inch two layer or a 3/16 inch one layer thick application 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. ***Contractor shall have a manufacturer's representative present during the installation of the first epoxy overlay system of the project.***

## Materials

### **(A) Pre-Treatment**

Pre-treatment shall be applied consisting of a two part hybrid polymer free of any fillers or volatile solvents and formulated to provide a simple volumetric mixing ratio of two components such as one to one or two to one by volume. This hybrid polymer pretreatment shall be formulated to provide a combination of low viscosity and low surface tension to fill and repair cracks and enhance bonding of the overlay system to the bridge deck.

**Physical Requirements of Cured Pre-treatment:** When components A and B are mixed in the appropriate ratio, the cured resin shall conform to the requirements for Epoxy, Type 2 in Article 1081-1 of the *Standard Specifications*.

### **(B) Overlay (Two Layers & One Later)**

This two-part epoxy polymer overlay system shall 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 polymer 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 to chemically link in the process of curing so that the flexibility of the molecule is least affected during the low temperature conditions that are confronted in actual use.

**Physical Requirements of Epoxy Polymer Overlay:** When components A and B are mixed in the appropriate ratio, the cured resin shall conform to the requirements for Epoxy, Type 2 in Article 1081-1 of the *Standard Specifications*.

**Load Bearing Capabilities of the Overlay System:** The cured epoxy polymer overlay system shall exhibit the following load bearing capacity. At approximately 20% strain, the polymer shall retain at least 85% of its original load bearing strength (tensile stress) as per ASTM D-638.

**Pre-treatment and Overlay Compatibility:** The Pre-treatment and Overlay system shall be of compatible materials produced, supplied and certified by the same manufacturer.

### **(C) Aggregate**

Aggregate used for all layers shall be non-friable, non-polishing, clean and free from surface moisture. The aggregate shall be 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 properties shall conform to the properties of Table 1 and Table 2:

TABLE 1		
AGGREGATE PROPERTIES		
Property	Value	Test Method
Moisture Content, max.	0.2% by weight	AASHTO T225
Mohs Hardness, min.	6.5	
Soundness Loss, 5 cycles in Sodium Sulfate, max.	5.4 %	AASHTO T104
Micro-Deval, max.	10%	AASHTO TP58

TABLE 2	
AGGREGATE GRADATION	
Sieve Size	Percent Passing
No. 6	60-100
No. 10	0-20
No. 20	0-10

### System Quality Submittals

- (1) **Independent Lab Performance Submittals:** Prior to beginning work, the epoxy polymer overlay system manufacturer shall submit documentation showing verification by a nationally recognized independent testing laboratory that the overlay material:
  - (a) Has the capability of preventing the ingress of essentially all the chloride ions into the concrete at 1" depth when tested according to NCHRP-244 method.
  - (b) Has the capability to de-activate the existing chloride ions present in the concrete specimen so that the corrosion of steel bars embedded in the concrete stop corroding.
  - (c) Fully complies with the test results from the above testing requirements and specified values in Tables 1 and 2, and the *Standard Specifications* the individual components and cured system. Subsequently, this certification shall be provided on each lot number to be used on the project.
- (2) **Past Performance Submittal:** Prior to beginning work, the selected epoxy polymer overlay system manufacturer shall submit records demonstrating verifiable satisfactory performance under average daily traffic of at least 10,000 for at least five (5) years on at least three (3) bridges in any state.
- (3) **Performance Guarantee:** The Contractor shall guarantee materials and workmanship against latent and patent defects arising from faulty materials, faulty workmanship or negligence for a period of **five (5) years – two coat overlay system** and for a period of **one (1) year – one coat overlay system** following the date of final acceptance of the work for maintenance and shall replace such defective materials and workmanship without cost to the Department. The Contractor will not be responsible for damage due to normal wear and tear, for negligence on the part of the Department, and/or for use in excess of the design.

Where items of equipment or material carry a manufacturer's guarantee for any period in excess of five years, then the manufacturer's guarantee shall apply for that particular piece of equipment or material. The Department's first remedy shall be through the manufacturer although the Contractor is responsible for invoking the warranted repair work with the manufacturer. The Contractor's responsibility shall be limited to the term of the manufacturer's guarantee. NCDOT would be afforded the same warranty as provided by the Manufacturer.

This guarantee provision shall be invoked for the following conditions:

- (a) Any delaminations
- (b) Excessive loss of aggregate
- (c) Skid resistance less than 40 as measured by AASHTO T242

Payment and/or performance bonds shall cover the guarantee period.

### Construction Methods

#### **(A) Surface Preparation**

Clean the entire deck surface by shot blasting and other means to remove asphaltic material, oils, dirt, rubber, curing compounds, paint carbonation, laitance, weak surface mortar and other potentially detrimental materials that may interfere with the bonding or curing of the overlay. Acceptable cleaning is usually recognized by a significant change in the color of the concrete and mortar, and the beginning exposure of coarse aggregate particles. Mortar, that is sound and soundly bonded to the coarse aggregate, shall have open pores due to cleaning to be considered adequate for bond. Areas of asphalt larger than one inch in diameter, or smaller areas spaced less than six inches apart, shall be removed. Traffic paint lines shall be considered clean when the concrete has exposed aggregate showing through the paint stripe. Remove all dust and other loose material. Care shall be taken and methods used to fully collect the excess material and limit loss to the environment.

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 epoxy based overlay system shall be applied within 24 hours following the final cleaning and prior to opening the area to traffic.

The deck shall be completely dry at the time of application of the epoxy concrete overlay.

#### **(B) Equipment**

Equipment shall consist of no less than an epoxy distribution system, aggregate spreader, application squeegee and vacuum trucks. The distribution system or distributor shall accurately blend 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. The vacuum truck shall be self-propelled.

**(C) 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 concrete 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 epoxy overlay shall be applied in two separate courses (two coat overlay only) in accordance with the following rate of application: and the total of the two applications (two coat only) shall not be less than 7.5 gals. per 100 sq. ft.

<b>Course</b>	<b>Rate Gal./100 Sq. Ft.</b>	<b>Aggregate Lbs./Sq. Yd*</b>
1 (one coat system)	No less than 2.5	10+
2 (two coat system)	No less than 5.0	14+

\*Application of aggregate shall be of sufficient quantity to completely cover the epoxy.

After the epoxy mixture has been prepared for the epoxy concrete overlay, it shall be immediately and uniformly applied to the surface of the bridge deck with a squeegee. The temperature of the bridge deck surface and all epoxy and aggregate components shall be 55°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 when high temperatures would cause the gel time to be less than 10 minutes. The dry aggregate shall be applied in such a manner as to cover the epoxy mixture completely within 5 minutes. First course applications that do not receive enough aggregate prior to gel shall be removed and replaced. Any second (two coat system only) course insufficiently covered with aggregate may be left in place, but will require additional applications before opening to traffic. Each course of epoxy concrete overlay shall be cured until vacuuming or brooming can be performed without tearing or damaging the surface. Traffic or equipment shall not be permitted on the overlay surface during the curing period. After the course one curing period (two coat system only), all loose aggregate shall be removed by vacuuming or brooming and the next overlay course applied to completion. The minimum curing periods shall be as follows:

<b>Course: Average temperature of deck, epoxy and aggregate components in °F</b>	<b><u>60-64</u></b>	<b><u>65-69</u></b>	<b><u>70-74</u></b>	<b><u>75-79</u></b>	<b><u>80-84</u></b>	<b><u>85+</u></b>
1 (two coat system only)	4 hrs.	3 hrs.	2.5 hrs.	2 hrs.	1.5 hrs.	1 hr.
2 (one and two coat system)	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 prosecute the work to provide the curing periods as specified herein, or other longer minimum curing periods as prescribed by the manufacturer prior to opening to public or construction traffic, unless otherwise permitted. When two coat system overlay is used the course one application shall not be opened to traffic.

Do not apply epoxy concrete overlay courses over modular joints, metal expansion joints, or evazote joint seals.

In the event the Contractor's operation damages or mars the epoxy concrete 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.

#### Measurement and Payment

*Placement of Epoxy Overlay* will be measured and paid for in square feet, which price shall be full compensation for deck preparation, pre-treatment, furnishing and placing either one or two coat overlay system, providing a 5 year (two coat system) and 1 year (one coat system) guarantee, and all tools, labor, materials, maintenance and incidentals necessary to complete the work.

Payments shall be made under:

Placement of One Coat Epoxy Overlay.....Square Feet  
Placement of Two Coat Epoxy Overlay.....Square Feet

### **SEALING EXISTING PAVEMENT CRACKS**

#### Description

The work covered by this provision consists of sealing existing longitudinal and transverse pavement cracks with Sealant Type 2, PS/AR (hot-poured rubber asphalt) at locations as directed by the Engineer. The Contractor will not be required to seal the existing edge joints.

#### Materials

Use Sealant Type 2, PS/AR (hot-poured rubber asphalt) meeting the requirements of Article 1028-2 of the *2012 Standard Specifications*.

#### Construction Methods

Install the sealant so that it forms a complete watertight bond with a high degree of elasticity, with maximum flexibility and longevity under extreme temperature ranges.

Use a HCA (hot compressed air) lance at all times to blast out any vegetation, dirt, dampness, and loose materials from the cracks.

Use a concentrated hot air jet that is a minimum of 3000°F in temperature and that has a minimum air jet force of 3000 feet per second of blasting.



Force open asphalt cracks, clean warm and dry, and have ready for the application of the preheated sealant for maximum crack sealability.

Preheat the sealant to correct temperature, using the air jacketed flow method to prevent the burning of the modified rubber in the sealant. Perform this by means of a trailer mounted 190 gallon safety tested crack sealant preheater melter kettle, with a horizontally mounted full sweep double paddle agitator.

Apply sealant in the prepared cracks at a temperature range of 370°F minimum and 420°F maximum, using the pressure screed shoe to completely fill the crack, leaving a sealed 2" overband. Excessive overbanding or waste of sealant materials will not be tolerated.

Do not apply the PS/AR sealant when the surface temperature of the pavement is below 32°F.

All cracks sealed must have a minimum of 1/8" depth of sealant installed.

After the crack has been sealed, promptly remove any surplus sealer on the pavement. Do not permit traffic over the sealed cracks without approval by the Engineer.

The sealant is to be packaged in polyethylene bags and placed in boxes that weigh approximately 60 pounds. The sealant may be packed in 60 pound boxes containing two polyethylene bags of sealant, which weigh approximately 30 pounds each. Boxes of sealant are to be palletized for shipment. The pallets are to be protected with a weatherproof covering. The Contractor is responsible for storage.

#### **Measurement and Payment**

*Sealing Existing Pavement Cracks (Without Router or Diamond Saw)* - The amount of the sealant material to be paid for will be the actual number of pounds of material that has satisfactorily been used to seal pavement cracks in the designated highway. Any material that has been spilled, used in excessive overbanding, wasted, misapplied, or unsatisfactorily used in any way will be deducted in determining quantities for payment. The Engineer will determine the quantity, if any, to be deducted. The Engineer's decision on the quantity to be deducted will be final and binding.

*Sealing Existing Pavement Cracks (With Router or Diamond Saw)* – The amount of the sealant material to be paid for will be the actual number of pounds of material that has been satisfactorily been used to seal pavement cracks in the designated highway where the existing crack/joint has been routed/removed using a routing machine or diamond saw to a width and depth as directed by the Engineer. Any material that has been spilled, used in excessive overbanding, wasted, misapplied, or unsatisfactorily used in any way will be deducted in determining quantities for payment. The Engineer will determine the quantity, if any, to be deducted. The Engineer's decision on the quantity to be deducted will be final and binding.

The above price and payment will be full compensation for all work required to seal the pavement cracks including but not limited to furnishing, hauling, loading and unloading, and storage of all sealant materials; cleaning and preparation of cracks to be sealed; application of sealant material in the prepared cracks; any clean-up; and any incidentals necessary to satisfactorily complete the work.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Sealing Existing Pavement Cracks (Without Router or Diamond Saw)	Pound
Sealing Existing Pavement Cracks (With Router or Diamond Saw)	Pound

## **MATERIALS**

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:

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**, add the following to the table of item references:

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

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 Aggregate	Rounded Aggregate	Angular Aggregate			Min.	Max.	Min.	Max.
Units	psi					inch	inch	lb/cy	lb/cy	lb/cy	lb/cy
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	2.5	4	508	-	545	-
B Slip Formed	2,500	0.488	0.567	-	-	1.5	-	508	-	-	-
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	-	-

**TABLE 1005-1  
AGGREGATE GRADATION - COARSE AGGREGATE**

Percentage of Total by Weight Passing													
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, Str. Concrete, Shoulder Drain, 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	AST, Str. Concrete, Asphalt Plant Mix
78M	-	-	-	100	98-100	75-100	20-45	0-15	-	-	-	A	Asphalt Plant Mix, Str. Conc, Weep Hole Drains
14M	-	-	-	-	-	100	35-70	5-20	-	0-8	-	A	Asphalt Plant Mix, AST, Weep Hole Drains, Str. Concrete
9	-	-	-	-	-	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 10-46, 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 10-65, Article 1050-1, GENERAL, line 41,** replace the first sentence with the following:

All fencing material and accessories shall meet Section 106.

**Page 10-73, Article 1056-1 DESCRIPTION, lines 7-8,** delete the first sentence of the second paragraph and replace with the following:

Use geotextile fabrics that are on the NCDOT Approved Products List.

**Page 10-73, Article 1056-2 HANDLING AND STORING, line 17,** replace “mechanically stabilized earth (MSE) wall faces” with “temporary wall faces”.

**Page 10-74, TABLE 1056-1 GEOTEXTILE REQUIREMENTS**, replace table with the following:

<b>TABLE 1056-1 GEOTEXTILE REQUIREMENTS</b>						
<b>Property</b>	<b>Requirement (MARV<sup>A</sup>)</b>					<b>Test Method</b>
	<b>Type 1</b>	<b>Type 2</b>	<b>Type 3<sup>B</sup></b>	<b>Type 4</b>	<b>Type 5<sup>C</sup></b>	
<i>Typical Application</i>	<i>Shoulder Drains</i>	<i>Under Rip Rap</i>	<i>Temporary Silt Fence</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	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 (unless required otherwise in the contract)	ASTM D4595
Permittivity	Table 2 <sup>D</sup> , 15% to 50% <i>in Situ</i> Soil Passing No. 200 <sup>E</sup>		Table 7 <sup>D</sup>	Table 5 <sup>D</sup>	0.20 sec <sup>-1</sup>	ASTM D4491
Apparent Opening Size					No. 30 <sup>E</sup>	ASTM D4751
UV Stability (Retained Strength)					70%	ASTM D4355

- A.** MARV does not apply to elongation
- B.** Minimum roll width of 36" required
- C.** Minimum roll width of 13 ft required
- D.** AASHTO M 288
- E.** US Sieve No. per AASHTO M 92

**Page 10-115, Subarticle 1074-7(B), Gray Iron Castings, lines 10-11**, replace with 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 lbs.) 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 table with the following:

<b>Table 1081-1</b> <b>Properties of Mixed Epoxy Resin Systems</b>							
<b>Property</b>	<b>Type 1</b>	<b>Type 2</b>	<b>Type 3</b>	<b>Type 3A</b>	<b>Type 4A</b>	<b>Type 4B</b>	<b>Type 5</b>
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 this subarticle 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 this subarticle 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.

**Page 10-204, Subarticle 1092-2(A) Performance and Test Requirements,** replace **Table 1092-3 Minimum Coefficient of Retroreflection for NC Grade A** with the following:

<b>TABLE 1092-3</b> <b>MINIMUM COEFFICIENT OF RETROREFLECTION FOR NC GRADE A</b> <b>(Candelas Per Lux Per Square Meter)</b>								
<b>Observation Angle, degrees</b>	<b>Entrance Angle, degrees</b>	<b>White</b>	<b>Yellow</b>	<b>Green</b>	<b>Red</b>	<b>Blue</b>	<b>Fluorescent Yellow Green</b>	<b>Fluorescent Yellow</b>
0.2	-4.0	525	395	52	95	30	420	315
0.2	30.0	215	162	22	43	10	170	130
0.5	-4.0	310	230	31	56	18	245	185
0.5	30.0	135	100	14	27	6	110	81
1.0	-4.0	<b>120</b>	60	8	16	3.6	64	48
1.0	30.0	45	34	4.5	9	2	36	27

## **TRAFFIC CONTROL AND WORK ZONE SAFETY**

The Contractor shall maintain traffic during construction and shall provide, install, and maintain all traffic control devices in accordance with these project guidelines, the *Project Special Provisions*, 2012 North Carolina Department of Transportation Standard Specifications for Roads and Structures, 2012 North Carolina Department of Transportation Roadway Standards Drawings, and the current edition of the MUTCD.

The Contractor's attention is directed to *Section 1101.01 of the 2012 North Carolina Department of Transportation Roadway Standards Drawings*. The Contractor shall utilize complete and proper traffic control and traffic control devices during all operations. All traffic control and traffic control devices required for any operation shall be functional and in place prior to the

commencement of that operation. Signs for temporary operations shall be removed during periods of inactivity. The Contractor is required to leave the project in a manner that will be safe to the traveling public and which will not impede motorists.

Traffic movements through lane closures on roads with two-way traffic shall be controlled by flaggers stationed at each end of the work zone. In situations where sight distance is limited, the Contractor shall provide additional means of controlling traffic, including, but not limited to, two-way radios, pilot vehicles, or additional flaggers. Flaggers shall be competent personnel, adequately trained in flagging procedures, and furnished with proper safety devices and equipment, including, but not limited to, safety vests and stop/slow paddles.

All personnel when working in traffic areas or areas in close proximity to traffic shall wear an approved safety vest, or shirt or jacket which meets the color requirements of the *MUTCD*.

The Contractor shall comply with all applicable Federal, State, and local laws, ordinances, and regulations governing safety, health, and sanitation, and shall provide all safeguards, safety devices, and protective equipment, and shall take any other needed actions, on his own responsibility that are 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.

Failure to comply with any of the requirements for safety and traffic control of this contract shall result in suspension of work as provided in Subarticle 108-7 of the *Standard Specifications*.

When a temporary lane closure on a multi-lane roadway is shifted to another lane, the contractor will be paid for a Lane Closure Shift. On 2-lane, 2-way roadways, the contractor will be paid one Temporary Lane Closure for both lanes.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Temporary Lane Closure (2-Lane, 2-Way Roadway)	Each
Temporary Lane Closure (Multi-Lane Roadway)	Each
Lane Closure Shift (Multi-Lane Roadway)	Each
Nighttime Temporary Lane Closure (2-Lane, 2-Way Roadway)	Each
Nighttime Temporary Lane Closure (Multi-Lane Roadway)	Each
Nighttime Lane Closure Shift (Multi-Lane Roadway)	Each

#### **MINORITY BUSINESS ENTERPRISE AND WOMEN BUSINESS ENTERPRISE (DIVISIONS)**

##### **Description**

The purpose of this Special Provision is to carry out the North Carolina Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts financed in whole or in part with State funds.

## Definitions

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

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

*Contract Goals Requirement* - The approved MBE and WBE participation at time of award, but not greater than the advertised contract goals for each.

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

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

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

*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 MBE/WBE certification. The MBE/WBE program follows the same regulations as the federal Disadvantaged Business Enterprise (DBE) program 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.

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

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

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

*Payment Tracking System* - On-line system in which the Contractor enters the payments made to MBE and WBE 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 MBE/WBE 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 MBE/WBE Replacement Request Form* - Form for replacing a committed MBE or WBE.  
<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 MBE/WBE subcontractor, manufacturer or regular dealer that affirms that a portion of said contract is going to be performed by the signed MBE/WBE 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 MBE and WBE Subcontractors Form* - Form for entering MBE/WBE subcontractors on a project that will meet this MBE and WBE goals. This form is for paper bids only.  
[http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/09%20MBE-WBE%20Subcontractors%20\(State\).doc](http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/09%20MBE-WBE%20Subcontractors%20(State).doc)

*Subcontractor Quote Comparison Sheet* - Spreadsheet for showing all subcontractor quotes in the work areas where MBEs and WBEs 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>

## **MBE and WBE Goal**

The following goals for participation by Minority Business Enterprises and Women Business Enterprises are established for this contract:

(A) Minority Business Enterprises **0.0 %**

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

(B) Women Business Enterprises **0.0 %**

- (1) *If the WBE goal is more than zero*, the Contractor shall exercise all necessary and reasonable steps to ensure that WBEs participate in at least the percent of the contract as set forth above as the WBE goal.
- (2) *If the WBE goal is zero*, the Contractor shall make an effort to recruit and use WBEs during the performance of the contract. Any WBE 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 MBE and WBE certified shall be used to meet the MBE and WBE goals respectively. 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 MBE/WBE Subcontractors**

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

- (A) *If either the MBE or WBE goal is more than zero,*
- (1) Bidders, at the time the bid proposal is submitted, shall submit a listing of MBE/WBE participation, including the names and addresses on *Listing of MBE and WBE 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 MBE and WBE participation for the contract.
  - (2) If bidders have no MBE or WBE participation, they shall indicate this on the *Listing of MBE and WBE 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 MBE and WBE 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.
  - (3) The bidder shall be responsible for ensuring that the MBE/WBE 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 MBE’s or WBE’s participation will not count towards achieving the corresponding goal.
- (B) *If either the MBE or WBE goal is zero,* entries on the *Listing of MBE and WBE Subcontractors* are not required for the zero goal, however any MBE or WBE participation that is achieved during the project shall be reported in accordance with requirements contained elsewhere in the special provision.

### **MBE or WBE Prime Contractor**

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

For example, on a proposed contract, the WBE goal is 10%, and the MBE goal is 8%. A WBE bidder puts in a bid where they will perform 40% of the contract work and have a WBE subcontractor which will perform another 5% of the work. Together the two WBE firms submit on the *Listing of MBE and WBE Subcontractors* a value of 45% of the contract which fulfills the WBE goal. The 8% MBE goal shall be obtained through MBE participation with MBE certified subcontractors or documented through a good faith effort. It should be noted that you cannot combine the two goals to meet an overall value. The two goals shall remain separate.

MBE/WBE prime contractors shall also follow Sections A or B listed under *Listing of MBE/WBE Subcontractors* just as a non-MBE/WBE bidder would.



## **Written Documentation – Letter of Intent**

The bidder shall submit written documentation for each MBE/WBE that will be used to meet the MBE and WBE goals of the contract, indicating the bidder's commitment to use the MBE/WBE 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 Engineer no later than 12:00 noon of the sixth calendar day following opening of bids, unless the sixth day falls on Saturday, Sunday or an official state holiday. In that situation, it is due in the office of the 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 MBE and WBE to be used toward the MBE and WBE goals, or if the form is incomplete (i.e. both signatures are not present), the MBE/WBE participation will not count toward meeting the MBE/WBE goal. If the lack of this participation drops the commitment below either the MBE or WBE goal, the Contractor shall submit evidence of good faith efforts for the goal not met, completed in its entirety, to the Engineer no later than 12:00 noon of the eighth calendar day following opening of bids, unless the eighth day falls on Saturday, Sunday or an official state holiday. In that situation, it is due in the office of the 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 either the MBE or the WBE goal, the apparent lowest responsive bidder shall submit to the Department documentation of adequate good faith efforts made to reach that specific goal(s).

One complete set and three (3) copies of this information shall be received in the office of the Engineer no later than 12:00 noon of the sixth calendar day following opening of bids, unless the sixth day falls on Saturday, Sunday or an official state holiday. In that situation, it is due in the office of the Engineer no later than 12:00 noon on the next official state business day.

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 MBE/WBE 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 MBE/WBE 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 MBE/WBE participation. Adequate good faith efforts also mean that the bidder actively and aggressively sought MBE/WBE 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 goals 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 MBEs/WBEs 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 MBEs/WBEs to respond to the solicitation. Solicitation shall provide the opportunity to MBEs/WBEs within the Division and surrounding Divisions where the project is located. The bidder must determine with certainty if the MBEs/WBEs are interested by taking appropriate steps to follow up initial solicitations.
- (B) Selecting portions of the work to be performed by MBEs/WBEs in order to increase the likelihood that the MBE and WBE goals will be achieved.
  - (1) Where appropriate, break out contract work items into economically feasible units to facilitate MBE/WBE 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 MBE/WBE goals when the work to be sublet includes potential for MBE/WBE participation (2<sup>nd</sup> and 3<sup>rd</sup> tier subcontractors).
- (C) Providing interested MBEs/WBEs 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 MBEs/WBEs. It is the bidder's responsibility to make a portion of the work available to MBE/WBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available MBE/WBE subcontractors and suppliers, so as to facilitate MBE/WBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of MBEs/WBEs 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 MBEs/WBEs to perform the work.
  - (2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including MBE/WBE 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 MBEs/WBEs is not in itself sufficient reason for a bidder's failure to meet the contract MBE or WBE goals, 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 MBEs/WBEs if the price difference is excessive or unreasonable.

- (E) Not rejecting MBEs/WBEs 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 MBEs/WBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or bidder.
- (G) Making efforts to assist interested MBEs/WBEs 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 MBEs/WBEs. Contact within 7 days from the bid opening NCDOT's Business Development Manager in the Business Opportunity and Work Force Development Unit to give notification of the bidder's inability to get MBE or WBE quotes.
- (I) Any other evidence that the bidder submits which shows that the bidder has made reasonable good faith efforts to meet the MBE and WBE 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 MBE and WBE goals.
- (2) The bidders' past performance in meeting the MBE and WBE goals.
- (3) The performance of other bidders in meeting the MBE and WBE goals. For example, when the apparent successful bidder fails to meet the goals, but others meet it, you may reasonably raise the question of whether, with additional reasonable efforts the apparent successful bidder could have met the goals. If the apparent successful bidder fails to meet the MBE and WBE goals, but meets or exceeds the average MBE and WBE 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 MBE and WBE goals can be met or that an adequate good faith effort has been made to meet the MBE and WBE goals.

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

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

### **Counting MBE/WBE Participation Toward Meeting MBE/WBE Goals**

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

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

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

Prior notification of joint check use shall be required when counting MBE/WBE 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 MBE/WBE may enter into subcontracts. Work that a MBE subcontracts to another MBE firm may be counted toward the MBE contract goal requirement. The same holds for work that a WBE subcontracts to another WBE firm. Work that a MBE subcontracts to a non-MBE firm does not count toward the MBE contract goal requirement. Again, the same holds true for the work that a WBE subcontracts to a non-WBE firm. If a MBE or WBE 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 MBE or WBE is not performing a commercially useful function. The MBE/WBE may present evidence to rebut this presumption to the Department. The Department's decision on the rebuttal of this presumption may be subject to review by the Office of Inspector General, NCDOT.

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

When a MBE or WBE 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 MBE or WBE in the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the MBE or WBE performs with its forces.

(E) Suppliers

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

(F) Manufacturers and Regular Dealers

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

- (1) The fees or commissions charged by a MBE/WBE 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 MBE/WBE, 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) MBE/WBE Utilization

The Contractor may count toward its contract goal requirement only expenditures to MBEs and WBEs that perform a commercially useful function in the work of a contract. A MBE/WBE 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 MBE/WBE 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 MBE/WBE 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 MBE/WBE credit claimed for its performance of the work, and any other relevant factors.

(B) MBE/WBE Utilization in Trucking

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

- (1) The MBE/WBE 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 the MBE or WBE goal.
- (2) The MBE/WBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
- (3) The MBE/WBE 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 MBE may subcontract the work to another MBE firm, including an owner-operator who is certified as a MBE. The same holds true that a WBE may subcontract the work to another WBE firm, including an owner-operator who is certified as a WBE. When this occurs, the MBE or WBE who subcontracts work receives credit for the total value of the transportation services the subcontracted MBE or WBE provides on the contract. It should be noted that every effort shall be made by MBE and WBE contractors to subcontract to the same certification (i.e., MBEs to MBEs and WBEs to WBEs), in order to fulfill the goal requirement. This, however, may not always be possible due to the limitation of firms in the area. If the MBE or WBE firm shows a good faith effort has been made to reach out to similarly certified transportation service providers and there is no interest or availability, and they can get assistance from other certified providers, the Engineer will not hold the prime liable for meeting the goal.
- (5) The MBE/WBE may also subcontract the work to a non-MBE/WBE firm, including from an owner-operator. The MBE/WBE who subcontracts the work to a non-MBE/WBE is entitled to credit for the total value of transportation services provided by the non-MBE/WBE subcontractor not to exceed the value of transportation services provided by MBE/WBE-owned trucks on the contract. Additional participation by non-MBE/WBE 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 MBE/WBE and the Contractor will not count towards the MBE/WBE contract requirement.
- (6) A MBE/WBE may lease truck(s) from an established equipment leasing business open to the general public. The lease must indicate that the MBE/WBE 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 MBE/WBE, so long as the lease gives the MBE/WBE absolute priority for use of the leased truck. This type of lease may count toward the MBE/WBE's credit as long as the driver is under the MBE/WBE's payroll.

- (7) Subcontracted/leased trucks shall display clearly on the dashboard the name of the MBE/WBE 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.

### **MBE/WBE Replacement**

When a Contractor has relied on a commitment to a MBE or WBE firm (or an approved substitute MBE or WBE firm) to meet all or part of a contract goal requirement, the contractor shall not terminate the MBE/WBE 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 MBE/WBE subcontractor, a non-MBE/WBE subcontractor, or with the Contractor's own forces or those of an affiliate. A MBE/WBE may only be terminated after receiving the Engineer's written approval based upon a finding of good cause for the termination.

All requests for replacement of a committed MBE/WBE firm shall be submitted to the Engineer for approval on Form RF-1 (*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 MBE/WBE:

#### **(A) Performance Related Replacement**

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

If a replacement MBE/WBE is not found that can perform at least the same amount of work as the terminated MBE/WBE, 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 MBEs/WBEs that their interest is solicited in contracting the work defaulted by the previous MBE/WBE or in subcontracting other items of work in the contract.
- (2) Efforts to negotiate with MBEs/WBEs for specific subbids including, at a minimum:

- (a) The names, addresses, and telephone numbers of MBEs/WBEs who were contacted.
    - (b) A description of the information provided to MBEs/WBEs regarding the plans and specifications for portions of the work to be performed.
  - (3) A list of reasons why MBE/WBE quotes were not accepted.
  - (4) Efforts made to assist the MBEs/WBEs contacted, if needed, in obtaining bonding or insurance required by the Contractor.
- (B) Decertification Replacement
- (1) When a committed MBE/WBE 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 MBE/WBE 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 MBE/WBE is decertified prior to the Department receiving the SAF (*Subcontract Approval Form*) for the named MBE/WBE firm, the Contractor shall take all necessary and reasonable steps to replace the MBE/WBE subcontractor with another similarly certified MBE/WBE subcontractor to perform at least the same amount of work to meet the MBE/WBE goal requirement. If a MBE/WBE 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 MBE/WBE, 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 MBE/WBE based upon the Contractor's commitment, the MBE/WBE shall participate in additional work to the same extent as the MBE/WBE 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 MBEs/WBEs 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 MBE/WBE, the Contractor shall seek participation by MBEs/WBEs 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 MBE/WBE, the Contractor shall seek



additional participation by MBEs/WBEs equal to the reduced MBE/WBE 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 MBE/WBE subcontractor. The Department reserves the right to require copies of actual subcontract agreements involving MBE/WBE 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 MBE/WBE 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 MBE/WBE credit.

## **Reporting Minority and Women Business Enterprise Participation**

The Contractor shall provide the Engineer with an accounting of payments made to all MBE and WBE 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 MBEs/WBEs, 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 further work on future projects until the required information is submitted.

Contractors reporting transportation services provided by non-MBE/WBE 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 on the Department's DBE-IS (*Subcontractor Payment Information*) with each invoice. Invoices will not be processed for payment until the DBE-IS is received.

### **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.

### **ERRATA**

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 8**

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

## **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:  $W = LD\sqrt{P} + 148,000$

**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”.

## **MINIMUM WAGES**

**FEDERAL** The Fair Labor Standards Act provides that with certain exceptions every employer shall pay wages at the rate of not less than SEVEN DOLLARS AND TWENTY-FIVE CENTS (\$7.25) per hour.

**STATE** The North Carolina Minimum Wage Act provides that every employer shall pay to each of his employees' wages at a rate of not less than SEVEN DOLLARS AND TWENTY-FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all skilled labor employed on this contract shall be SEVEN DOLLARS AND TWENTY-FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all intermediate labor employed on this contract shall be SEVEN DOLLARS AND TWENTY-FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all unskilled labor on this contract shall be SEVEN DOLLARS AND TWENTY-FIVE CENTS (\$7.25) per hour.

This determination of the intent of the application of this act to the contract on this project is the responsibility of the Contractor.

The Contractor shall have no claim against the Department of Transportation for any changes in the minimum wage laws, State or Federal. It is the responsibility of the Contractor to keep himself fully informed of all Federal and State Laws affecting his contract.

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION BID FORM

**WBS Element:** Various

**Contract Number:** 11-00-089

**DESCRIPTION:** Replacement/Repair of Bridge Expansion Joints, Epoxy Overlay, Crack Sealing, and Foam Injections at Various Bridge/Roadway Sites upon Request in Alleghany, Ashe, Avery, Caldwell, Surry, Watauga, Wilkes, and Yadkin Counties

PAGE 1 OF 2

LINE	SECT	DESCRIPTION	QUAN	UNIT	UNIT BID	AMOUNT BID
1	SP	Mobilization	10	EA		
2	SP	Silicon Joint Replacement (1" wide or less)	1,000	LF		
3	SP	Silicon Joint Replacement (1" to 2" wide)	1,000	LF		
4	SP	Silicon Joint Replacement (greater than 2" wide)	1,000	LF		
5	SP	Evazote Joint Replacement	1,000	LF		
6	SP	V-Seal 300 Expansion Joint Replacement	500	LF		
7	SP	V-Seal 400 Expansion Joint Replacement	500	LF		
8	SP	Joint Repair using Elastomeric Concrete	100	CF		
9	SP	Asphalt Joint Repair/Replacement (18"-24" wide, w/ plate)	300	CF		
10	SP	Concrete/ASPHALT Deck Repair Fibrescrete B	15,000	LB		
11	SP	Concrete/ASPHALT Deck Repair Fibrescrete G	15,000	LB		
12	SP	Class II Concrete Deck Repairs – HES Concrete (0 – 15 sf)	50	SF		
13	SP	Class II Concrete Deck Repairs – HES Concrete (more than 15 sf)	100	SF		
14	SP	Slab Leveling, Undersealing and Voidfilling	6,000	LB		
15	SP	Soil Stabilization	400	GAL		
16	SP	Structural Foam Void Fill/Stabilization	200	GAL		
17	SP	Placement of One Coat Epoxy Overlay	15,000	SF		
18	SP	Placement of Two Coat Epoxy Overlay	25,000	SF		
19	SP	Crack Sealing (Without Router or Diamond Saw)	40,000	LB		
20	SP	Crack Sealing (With Router or Diamond Saw)	20,000	LB		
21	SP	Temporary Lane Closure (2-Lane, 2-Way Roadway)	30	EA		
22	SP	Temporary Lane Closure (Multi-Lane Roadway)	30	EA		
23	SP	Lane Closure Shift (Multi-Lane Roadway)	14	EA		
24	SP	Nighttime Temporary Lane Closure (2-Lane, 2-Way Roadway)	30	EA		

\*CONTINUED ON PAGE 2\*

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION BID FORM

WBS Element: Various

Contract Number: 11-00-089

DESCRIPTION: Replacement/Repair of Bridge Expansion Joints, Epoxy Overlay, Crack Sealing, and Foam Injections at Various Bridge/Roadway Sites upon Request in Alleghany, Ashe, Avery, Caldwell, Surry, Watauga, Wilkes, and Yadkin Counties

PAGE 2 OF 2

LINE	SECT	DESCRIPTION	QUAN	UNIT	UNIT BID	AMOUNT BID
25	SP	Nighttime Temporary Lane Closure (Multi-Lane Roadway)	30	EA		
26	SP	Nighttime Lane Closure Shift (Multi-Lane Roadway)	14	EA		

**\*THE CONTRACTOR SHALL NOTE THAT THE CONTRACT QUANTITIES PROVIDED ARE USED SOLELY FOR DETERMINING THE LOWEST RESPONSIBLE BIDDER. NO MINIMUM AMOUNT OF WORK IS GUARANTEED UNDER THIS CONTRACT.\***

***TOTAL BID FOR PROJECT:*** \_\_\_\_\_

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**THIS SECTION TO BE COMPLETED BY NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**

*This bid has been reviewed in accordance with Article 103-1 of the Standard Specifications for Roads and Structures 2012.*

Reviewed by \_\_\_\_\_ (date) \_\_\_\_\_

**EXECUTION OF BID**  
**NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION**

**CORPORATION**

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

*N.C.G.S. § 133-32* and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

**SIGNATURE OF CONTRACTOR**

\_\_\_\_\_  
Full name of Corporation

\_\_\_\_\_  
Address as Prequalified

Attest \_\_\_\_\_  
Secretary/Assistant Secretary  
Select appropriate title

By \_\_\_\_\_  
President/Vice President/Assistant Vice President  
Select appropriate title

\_\_\_\_\_  
Print or type Signer's name

\_\_\_\_\_  
Print or type Signer's name

**CORPORATE SEAL**

**AFFIDAVIT MUST BE NOTARIZED**

Subscribed and sworn to before me this the

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Signature of Notary Public

of \_\_\_\_\_ County.

State of \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

**NOTARY SEAL**

## **EXECUTION OF BID**

### **NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION**

#### **PARTNERSHIP**

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

*N.C.G.S. § 133-32* and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

#### **SIGNATURE OF CONTRACTOR**

\_\_\_\_\_  
Full Name of Partnership

\_\_\_\_\_  
Address as Prequalified

\_\_\_\_\_  
Signature of Witness

By \_\_\_\_\_

\_\_\_\_\_  
Signature of Partner

\_\_\_\_\_  
Print or type Signer's name

\_\_\_\_\_  
Print or type Signer's name

#### **AFFIDAVIT MUST BE NOTARIZED**

Subscribed and sworn to before me this the

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Signature of Notary Public

**NOTARY SEAL**

of \_\_\_\_\_ County.

State of \_\_\_\_\_

My Commission Expires: \_\_\_\_\_



## **EXECUTION OF BID**

### **NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION**

#### **LIMITED LIABILITY COMPANY**

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

*N.C.G.S. § 133-32* and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

#### **SIGNATURE OF CONTRACTOR**

\_\_\_\_\_  
Full Name of Firm

\_\_\_\_\_  
Address as Prequalified

\_\_\_\_\_  
Signature of Manager

\_\_\_\_\_  
Signature of Witness

\_\_\_\_\_  
Individually

\_\_\_\_\_  
Print or type Signer's name

\_\_\_\_\_  
Print or type Signer's name

#### **AFFIDAVIT MUST BE NOTARIZED**

Subscribed and sworn to before me this the

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Signature of Notary Public

**NOTARY SEAL**

of \_\_\_\_\_ County.

State of \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

**EXECUTION OF BID**  
**NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION**

**JOINT VENTURE (2) or (3)**

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

*N.C.G.S. § 133-32* and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

**SIGNATURE OF CONTRACTOR**

Instructions: **2 Joint Venturers** Fill in lines (1), (2) and (3) and execute. **3 Joint Venturers** Fill in lines (1), (2), (3) and (4) and execute. On Line (1), fill in the name of the Joint Venture Company. On Line (2), fill in the name of one of the joint venturers and execute below in the appropriate manner. On Line (3), print or type the name of the other joint venturer and execute below in the appropriate manner. On Line (4), fill in the name of the third joint venturer, if applicable and execute below in the appropriate manner.

(1) \_\_\_\_\_  
Name of Joint Venture

(2) \_\_\_\_\_  
Name of Contractor

\_\_\_\_\_  
Address as Prequalified

\_\_\_\_\_  
Signature of Witness or Attest By Signature of Contractor

\_\_\_\_\_  
Print or type Signer's name Print or type Signer's name

*If Corporation, affix Corporate Seal* and

(3) \_\_\_\_\_  
Name of Contractor

\_\_\_\_\_  
Address as Prequalified

\_\_\_\_\_  
Signature of Witness or Attest By Signature of Contractor

\_\_\_\_\_  
Print or type Signer's name Print or type Signer's name

*If Corporation, affix Corporate Seal* and

(4) \_\_\_\_\_  
Name of Contractor (for 3 Joint Venture only)

\_\_\_\_\_  
Address as Prequalified

\_\_\_\_\_  
Signature of Witness or Attest By Signature of Contractor

\_\_\_\_\_  
Print or type Signer's name Print or type Signer's name

*If Corporation, affix Corporate Seal*

**NOTARY SEAL**

Affidavit must be notarized for Line (2)  
Subscribed and sworn to before me this the  
\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Signature of Notary Public

of \_\_\_\_\_ County.

State of \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

**NOTARY SEAL**

Affidavit must be notarized for Line (3)  
Subscribed and sworn to before me this the  
\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Signature of Notary Public

of \_\_\_\_\_ County.

State of \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

**NOTARY SEAL**

Affidavit must be notarized for Line (4)  
Subscribed and sworn to before me this the  
\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Signature of Notary Public

of \_\_\_\_\_ County.

State of \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

## **EXECUTION OF BID**

### **NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION**

#### **INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME**

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

*N.C.G.S. § 133-32* and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

#### **SIGNATURE OF CONTRACTOR**

Name of Contractor

\_\_\_\_\_

Individual Name

Trading and doing business as

\_\_\_\_\_

Full name of Firm

\_\_\_\_\_  
Address as Prequalified

\_\_\_\_\_  
Signature of Witness

\_\_\_\_\_  
Signature of Contractor, Individually

\_\_\_\_\_  
Print or type Signer's name

\_\_\_\_\_  
Print or type Signer's name

#### **AFFIDAVIT MUST BE NOTARIZED**

Subscribed and sworn to before me this the

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Signature of Notary Public

**NOTARY SEAL**

of \_\_\_\_\_ County.

State of \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

## **EXECUTION OF BID**

### **NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION**

#### **INDIVIDUAL DOING BUSINESS IN HIS OWN NAME**

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

*N.C.G.S. § 133-32* and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

#### **SIGNATURE OF CONTRACTOR**

Name of Contractor \_\_\_\_\_  
Print or type Individual Name

\_\_\_\_\_  
Address as Prequalified

\_\_\_\_\_  
Signature of Contractor, Individually

\_\_\_\_\_  
Print or type Signer's name

\_\_\_\_\_  
Signature of Witness

\_\_\_\_\_  
Print or type Signer's name

#### **AFFIDAVIT MUST BE NOTARIZED**

Subscribed and sworn to before me this the

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Signature of Notary Public

**NOTARY SEAL**

of \_\_\_\_\_ County.

State of \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

## **DEBARMENT CERTIFICATION**

Conditions for certification:

1. The prequalified bidder shall provide immediate written notice to the Department if at any time the bidder learns that his certification was erroneous when he submitted his debarment certification or explanation filed with the Department, or has become erroneous because of changed circumstances.
2. The terms *covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded*, as used in this provision, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. A copy of the Federal Rules requiring this certification and detailing the definitions and coverages may be obtained from the Contract Officer of the Department.
3. The prequalified bidder agrees by submitting this form, that he will not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in NCDOT contracts, unless authorized by the Department.
4. For Federal Aid projects, the prequalified bidder further agrees that by submitting this form he will include the Federal-Aid Provision titled *Required Contract Provisions Federal-Aid Construction Contract (Form FHWA PR 1273)* provided by the Department, without subsequent modification, in all lower tier covered transactions.
5. The prequalified bidder may rely upon a certification of a participant in a lower tier covered transaction that he is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless he knows that the certification is erroneous. The bidder may decide the method and frequency by which he will determine the eligibility of his subcontractors.
6. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this provision. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
7. Except as authorized in paragraph 6 herein, the Department may terminate any contract if the bidder knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available by the Federal Government.

### **DEBARMENT CERTIFICATION**

The prequalified bidder certifies to the best of his knowledge and belief, that he and his principals:

- a.** Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b.** Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records; making false statements; or receiving stolen property;
- c.** Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph b. of this certification; and
- d.** Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- e.** Will submit a revised Debarment Certification immediately if his status changes and will show in his bid proposal an explanation for the change in status.

If the prequalified bidder cannot certify that he is not debarred, he shall provide an explanation with this submittal. An explanation will not necessarily result in denial of participation in a contract.

Failure to submit a non-collusion affidavit and debarment certification will result in the prequalified bidder's bid being considered non-responsive.

☐

Check here if an explanation is attached to this certification.

**Contract No: 11-00-089**

**County: Division Eleven**

ACCEPTED BY THE  
DEPARTMENT OF TRANSPORTATION

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Contract Officer

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Date

## **LISTING OF MBE & WBE SUBCONTRACTORS**

[illegible]