

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION 8

PROPOSAL

DATE AND TIME OF BID OPENING: MARCH 12, 2024 AT 2:00 PM

CONTRACT ID: 12116381

WBS ELEMENT NO.: TBD (TO BE DETERMINED)

FEDERAL AID NO.: N/A

COUNTY: CHATHAM, HOKE, LEE, MOORE, MONTGOMERY, RANDOLPH,
RICHMOND, AND SCOTLAND

ROUTE NO.: VARIOUS

LOCATION: VARIOUS

TYPE OF WORK: REPLACE OR REPAIR BRIDGE JOINTS, CONCRETE/ASPHALT DECK
REPAIRS AND FOAM INJECTIONS AT VARIOUS LOCATIONS AS
NEEDED

NOTICE:

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

THIS IS A ROADWAY PROJECT. BID BONDS ARE NOT REQUIRED.

NAME OF BIDDER

ADDRESS OF BIDDER

**PROPOSAL FOR THE CONSTRUCTION OF
CONTRACT NO. 12116381
IN CHATHAM, HOKE, LEE, MOORE, MONTGOMERY, RANDOLPH, RICHMOND
AND SCOTLAND COUNTIES, NORTH CAROLINA**

DEPARTMENT OF TRANSPORTATION, RALEIGH, NORTH CAROLINA

The Bidder has carefully examined the location of the proposed work to be known as **CONTRACT 12116381**; has carefully examined the plans and specifications, which are acknowledged to be part of the proposal, the special provisions, the proposal, the form of contract; and thoroughly understands the stipulations, requirements and provisions. The undersigned bidder agrees to bound upon his/her execution of the bid and subsequent award to him/her by the Department of Transportation in accordance with this proposal to provide all necessary machinery, tools, labor, and other means of construction; and to do all the work and to furnish all materials, except as otherwise noted, necessary to perform and complete the said contract in accordance with *the 2024 Standard Specifications for Roads and Structures* by the dates(s) specified in the Project Special Provisions and in accordance with the requirements of the Engineer, and at the unit or lump sum prices, as the case may be, for the various items given on the sheets contained herein.

The Bidder shall provide and furnish all the materials, machinery, implements, appliances and tools, and perform the work and required labor to construct and complete **CONTRACT 12116381** in **CHATHAM, HOKE, LEE, MOORE, MONTGOMERY, RANDOLPH, RICHMOND AND SCOTLAND COUNTIES**, for the unit or lump sum prices, as the case may be, bid by the Bidder in his/her bid and according to the proposal, plans and specifications prepared by said Department, which proposal, plans, and specifications show the details covering this project, and hereby become a part of this contract.

The published volume entitled *North Carolina Department of Transportation, 2024 Standard Specifications for Roads and Structures* with all amendments and supplements thereto, is by reference incorporated into and made a part of this contract; that, except as herein modified, all the construction and work included in this contract is to be done in accordance with the specifications contained in said volume, and amendments and supplements thereto, under the direction of the Engineer.

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

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

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

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 submitted with the entire proposal and 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. Federal Identification Number (or Social Security Number of Individual)
 - e. 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 8 ENGINEER'S OFFICE AT 121 DOT DR., CARTHAGE, NC 28327 BY 2:00 P.M. ON TUESDAY, MARCH 12, 2024**
12. The sealed bid must display the following statement on the front of the sealed envelope:

**QUOTATION FOR CONTRACT 12116381 WBS ELEMENT 'TO BE DETERMINED' -
REPLACE OR REPAIR BRIDGE JOINTS, CONCRETE/ASPHALT DECK REPAIRS
AND FOAM INJECTIONS AT VARIOUS SITES IN CHATHAM, HOKE, LEE,
MONTGOMERY, MOORE, RANDOLPH, RICHMOND, AND SCOTLAND COUNTIES
TO BE OPENED AT 2:00 P.M., TUESDAY, MARCH 12, 2024.**

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

**N. C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS, DIVISION 8
ATTN: CHAD G. BROWN
121 DOT DR.
CARTHAGE, NC 28327**

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 (excluding 102-10) of the current edition of the *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 any or all bids.

PROJECT SPECIAL PROVISIONS**GENERAL**

This contract is for replace or repair bridge joints, concrete/asphalt deck repairs and foam injections as needed at various sites in Chatham, Hoke, Lee, Montgomery, Moore, Randolph, Richmond, and Scotland Counties

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

Wherever reference is given to codes, or standard specifications, or other data published by regulating agencies or accepted organizations, including but not limited to N.C. State Building Codes, Federal Specifications, ASTM Specifications, N.C. Department of Transportation ‘Standard Specifications for Roads and Structures’, and the like, it shall be understood that such reference is to the latest edition including addenda published prior to the date of the contract documents.

The Contractor shall keep him/herself fully informed of all Federal, State and local laws, ordinances, and regulations, and shall comply with the provisions of Section 107 of the *Standard Specifications*.

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, and State Regulations for safety 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.

DIVISION LET CONTRACT PREQUALIFICATION:

(07-01-14)

SPD 01-410

Any firm that wishes to bid as a prime contractor shall be prequalified as a Bidder or PO Prime Contractor prior to submitting a bid. Information regarding prequalification can be found at: <https://connect.ncdot.gov/business/Prequal/Pages/default.aspx>.

CONTRACT AND LIQUIDATED DAMAGES

The date of availability for this project is upon issuance of purchase order. The Contractor may begin work prior to this date upon approval of the Engineer or his duly authorized representative. If such approval is given, and the Contractor begins work prior to the date of availability, the Department of Transportation will assume no responsibility for any delays caused prior to the date of availability by any reason whatsoever, and such delays, if any, will not constitute a valid reason for extending the completion date. The Contractor will be notified by the Engineer of job location and scope and shall begin work on the project within 30 days after this notification or as determined by the Engineer. Failure to begin work within 30 calendar days will result in the assessment of liquidated damages

No work will be permitted and no purchase order will be issued until all required bonds and prerequisite conditions and certifications have been satisfied.

The completion date for this project is March 31, 2025. No extensions will be authorized except as authorized by Article 108-10 of the current edition of the *Standard Specifications*.

The liquidated damages of One Hundred Dollars (\$100.00) per calendar day will be charged for each calendar day when the Contractor fails to respond within 30 days or does not complete the project deadlines as required by the Engineer.

Term of Contract – The Contractor shall submit his bid for the initial period. At the option of the Department, this contract may be extended for two (2) additional periods of one (1) year each (maximum three (3) years total). No changes in the terms, conditions, etc. of this contract will be made when an extension to the contract is implemented, except that there will be a clause to allow up to a maximum 3% increase in the existing contract unit prices. The Engineer will notify the Contractor in writing by **January 1** if the contract may be extended. The Contractor must notify the Engineer in writing by **January 15** of his acceptance or rejection of this offer. Failure on the part of Contractor to reply will be received as a rejection of contract extension. These dates are subject to change based on lead-time required. If they change it will be covered at the pre-construction conference.

BASIS OF AWARD:

The Contractor is advised that this is an annual needs contract and that the quantities as shown on the bid form are estimates only. Actual quantities will be determined on an as needed basis. The quantities shown on the bid form will be used to establish unit prices for each line item and determination of low bid only. The Contractor shall submit a unit price for every item on the bid form.

Unit prices should reflect actual costs; in accordance with Article 102-14, unbalanced bids may be rejected.

Quotations will be evaluated based on the total bid of all items. There are no guarantees either stated or implied for the quantities as shown on the bid form. Payment to the successful low bidder will be based on actual quantities installed and accepted at the PER UNIT PRICE for each item as quoted.

The Department reserves the right to reject any or all bids.

NON-EXCLUSIVE CONTRACT

(6-1-15)

SPD 01-750

The Department may, as it deems to be in the best interest of the state and the Department of Transportation, execute more than one contract based on this proposal. The Contractor(s) understands and agrees, by signature on the Purchase Order Contract Bid Proposal, that this agreement **does not** constitute an exclusive contract. If awarded, the contracts will be executed with the lowest responsible bidders. The Department of Transportation reserves the right to make multiple awards for the services provided by this contract. Furthermore, the Department reserves the right to reject all bids received.

BOND REQUIREMENTS – No Bonds Required

(6-1-16)(Rev. 1-16-24)

SPD 01-420B

The provisions of Articles 102-10 and 103-7 of the *Standard Specifications* are waived for this project. No bonds required.

NO MAJOR CONTRACT ITEMS:

(2-19-02) (Rev. 8-21-07)

104

SP1 G31

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

NO SPECIALTY ITEMS:

(7-1-95)(Rev. 1-16-24)

108-6

SP1 G34

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

MINORITY BUSINESS ENTERPRISE AND WOMEN BUSINESS ENTERPRISE (DIVISIONS):

(10-16-07)(Rev. 1-16-24)

102-15(J)

SP1 G67

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 the Combined MBE/WBE goal. No submittal of a Letter of Intent is required.

Combined MBE/WBE Goal: A portion of the total contract, expressed as a percentage that is to be performed by committed MBE/WBE subcontractors.

Committed MBE/WBE Subcontractor - Any MBE/WBE submitted at the time of bid that is being used to meet the Combined MBE / 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 Goal Requirement - The approved participation at time of award, but not greater than the advertised Combined MBE/WBE contract goal.

Goal Confirmation Letter - Written documentation from the Department to the bidder confirming the Contractor's approved, committed 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 Participation (Anticipated) - A portion of the total contract, expressed as a percentage that is anticipated 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.

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

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 Participation (Anticipated) - A portion of the total contract, expressed as a percentage that is anticipated 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.
<https://connect.ncdot.gov/business/Turnpike/Documents/Form%20DBE-IS%20Subcontractor%20Payment%20Information.pdf>

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

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

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

Letter of Intent - Form signed by the Contractor and the 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 estimated amount (based on quantities and unit prices) listed at the time of bid.
<http://connect.ncdot.gov/letting/LetCentral/Letter%20of%20Intent%20to%20Perform%20as%20a%20Subcontractor.pdf>

Listing of MBE and WBE Subcontractors Form - Form for entering MBE/WBE subcontractors on a project that will meet the Combined MBE/WBE goal. This form is for paper bids only.
[http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/09%20MBE-WBE%20Subcontractors%20\(State\).docx](http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/09%20MBE-WBE%20Subcontractors%20(State).docx)

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>

Combined MBE/WBE Goal

The Combined MBE/WBE Goal for this project is **0 %**

The Combined Goal was established utilizing the following anticipated participation for Minority Business Enterprises and Women Business Enterprises:

(A) Minority Business Enterprises **0 %**

- (1) *If the anticipated MBE participation 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.

- (2) *If the anticipated MBE participation 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 %**

- (1) *If the anticipated WBE participation 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.
- (2) *If the anticipated WBE participation 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.

The Bidder is required to submit only participation to meet the Combined MBE/WBE Goal. The Combined Goal may be met by submitting all MBE participation, all WBE participation, or a combination of MBE and WBE participation.

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 Combined MBE / WBE goal. The Directory can be found at the following link.

<https://www.ebs.nc.gov/VendorDirectory/default.html>

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

Listing of 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 Combined MBE/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 above the goal will follow the banking guidelines found elsewhere in this provision. All other additional MBE/WBE subcontractor participation submitted at the time of bid will be used toward the Department's 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) Electronic Bids

Bidders shall submit a listing of MBE and WBE participation in the appropriate section of the electronic submittal file.

- (1) Submit the names and addresses of MBE and WBE firms identified to participate in the contract. If the bidder uses the updated listing of MBE and WBE firms shown

in the electronic submittal file, the bidder may use the dropdown menu to access the name and address of the firms.

- (2) Submit the contract line numbers of work to be performed by each MBE and WBE firm. When no figures or firms are entered, the bidder will be considered to have no MBE or WBE participation.
- (3) The bidder shall be responsible for ensuring that the MBE and WBE are 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 Combined MBE/WBE goal.

(B) Paper Bids

- (1) *If the Combined MBE/ WBE goal is more than zero,*
 - (a) 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.
 - (b) 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.
 - (c) 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 Combined MBE/WBE goal.
- (2) *If the Combined MBE/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 a Combined MBE/WBE Goal, the firm is responsible for meeting the goal or making good faith efforts to meet the goal, just like any other bidder. In most cases, a MBE or WBE bidder on a contract will meet the Combined MBE/WBE goal 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.

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 Combined MBE/WBE goal 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 2:00 p.m. of the fifth calendar day following opening of bids, unless the fifth 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 10:00 a.m. 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 Combined MBE/WBE goal, or if the form is incomplete (i.e. both signatures are not present), the MBE/WBE participation will not count toward meeting the Combined MBE/WBE goal. If the lack of this participation drops the commitment below the Combined MBE/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 2:00 p.m. 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 10:00 a.m. on the next official state business day.

Banking MBE/WBE Credit

If the committed MBE/WBE participation submitted exceeds the algebraic sum of the Combined MBE/WBE goal by \$1,000 or more, the excess will be placed on deposit by the Department for future use by the bidder. Separate accounts will be maintained for MBE and WBE participation and these may accumulate for a period not to exceed 24 months.

When the apparent lowest responsive bidder fails to submit sufficient participation by MBE and WBE firms to meet the advertised goal, as part of the good faith effort, the Department will consider allowing the bidder to withdraw funds to meet the Combined MBE/WBE goal as long as there are adequate funds available from the bidder's MBE and WBE bank accounts.

Submission of Good Faith Effort

If the bidder fails to meet or exceed the Combined MBE/WBE goal, the apparent lowest responsive bidder shall submit to the Department documentation of adequate good faith efforts made to reach that specific goal.

One complete set and 7 copies of this information shall be received in the office of the Engineer no later than 2:00 p.m. of the fifth calendar day following opening of bids, unless the fifth 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 10:00 a.m. 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 a Combined MBE/WBE Goal 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 that are also prequalified subcontractors. 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 Combined MBE/WBE goal 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 advertised goal when the work to be sublet includes potential for MBE/WBE participation (2nd and 3rd tier subcontractors).
- (C) Providing interested certified MBEs/WBEs that are also prequalified subcontractors 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 the advertised goal 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 advertised goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidding contractors are not, however, required to accept higher quotes from 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 the Business Opportunity and Work Force Development Unit at BOWD@ncdot.gov 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 advertised 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 Combined MBE/WBE goal.
- (2) The bidders' past performance in meeting the contract goal.

- (3) The performance of other bidders in meeting the advertised goal. For example, when the apparent successful bidder fails to meet the goal, but others meet it, you may reasonably raise the question of whether, with additional reasonable efforts the apparent successful bidder could have met the goal. If the apparent successful bidder fails to meet the advertised goal, 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 Combined MBE/WBE goal can be met or that an adequate good faith effort has been made to meet the advertised goal.

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 the Combined MBE/WBE Goal

(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 anticipated MBE participation. The same holds for work that a WBE subcontracts to another WBE firm. Work that a MBE/WBE subcontracts to a non-MBE/WBE firm does not count toward the contract goal requirement. 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 MBE or WBE participation breakdown. 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 firms and there is no interest or availability, and they can get assistance from other certified firms, the Engineer will not hold the prime responsible for meeting the individual MBE or WBE breakdown. 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.

(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 /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 /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. If it is determined that a MBE or WBE is not performing a Commercially Useful Function, the contractor may present evidence to rebut this presumption to the Department.

(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 Combined MBE/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 participation breakdown. 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 responsible for meeting the individual MBE or WBE participation breakdown.
- (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 subcontractor (or an approved substitute MBE or WBE subcontractor) to meet all or part of a contract goal requirement, the contractor shall not terminate the MBE/WBE subcontractor for convenience. This includes, but is not limited to, instances in which the Contractor seeks to perform the work of the terminated subcontractor with another MBE/WBE subcontractor, a non-MBE/WBE subcontractor, or with the Contractor's own forces or those of an affiliate.

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

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

- (a) The listed MBE/WBE subcontractor fails or refuses to execute a written contract;
- (b) The listed MBE/WBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the MBE/WBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;
- (c) The listed MBE/WBE subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements;

- (d) The listed MBE/WBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (e) The listed MBE/WBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR Parts 180, 215 and 1,200 or applicable state law;
- (f) The listed MBE/WBE subcontractor is not a responsible contractor;
- (g) The listed MBE/WBE voluntarily withdraws from the project and provides written notice of withdrawal;
- (h) The listed MBE/WBE is ineligible to receive MBE/WBE credit for the type of work required;
- (i) A MBE/WBE owner dies or becomes disabled with the result that the listed MBE/WBE contractor is unable to complete its work on the contract;
- (j) Other documented good cause that compels the termination of the MBE/WBE subcontractor. Provided, that good cause does not exist if the prime contractor seeks to terminate a MBE/WBE it relied upon to obtain the contract so that the prime contractor can self-perform the work for which the MBE/WBE contractor was engaged or so that the prime contractor can substitute another MBE/WBE or non-MBE/WBE contractor after contract award.

The Contractor shall comply with the following for replacement of a committed MBE/WBE:

(A) Performance Related Replacement

When a committed MBE/WBE is terminated for good cause as stated above, an additional MBE/WBE that was submitted at the time of bid may be used to fulfill the MBE/WBE commitment to meet the Combined MBE/WBE Goal. A good faith effort will only be required for removing a committed MBE/WBE if there were no additional MBE/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 MBE/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 MBE/WBEs for specific subbids including, at a minimum:
 - (a) The names, addresses, and telephone numbers of MBE/WBEs who were contacted.
 - (b) A description of the information provided to MBE/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 MBE/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 MBE/WBE subcontractor to perform at least the same amount of work to meet the Combined 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).
- (3) Exception: If the MBE/WBE's ineligibility is caused solely by its having exceeded the size standard during the performance of the contract, 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 and overall goal.

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

Changes in the Work

When the Engineer makes changes that result in the reduction or elimination of work to be performed by a committed 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 through the Department's DBE Payment Tracking System.

Failure to Meet Contract Requirements

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

EQUIPMENT IDLING GUIDELINES:

(1-19-21)

107

SP1 G096

Exercise reduced fuel consumption and reduced equipment emissions during the construction of all work associated with this contract. Employees engaged in the construction of this project should turn off vehicles when stopped for more than thirty (30) minutes and off-highway equipment should idle no longer than fifteen (15) consecutive minutes.

These guidelines for turning off vehicles and equipment when idling do not apply to:

1. Idling when queuing.
2. Idling to verify the vehicle is in safe operating condition.
3. Idling for testing, servicing, repairing or diagnostic purposes.
4. Idling necessary to accomplish work for which the vehicle was designed (such as operating a crane, mixing concrete, etc.).
5. Idling required to bring the machine system to operating temperature.
6. Emergency vehicles, utility company, construction, and maintenance vehicles where the engines must run to perform needed work.
7. Idling to ensure safe operation of the vehicle.
8. Idling when the propulsion engine is providing auxiliary power for other than heating or air conditioning. (such as hydraulic systems for pavers)
9. When specific traffic, safety, or emergency situations arise.
10. If the ambient temperature is less than 32 degrees Fahrenheit. Limited idling to provide for the safety of vehicle occupants (e.g. to run the heater).
11. If the ambient temperature is greater than 90 degrees Fahrenheit. Limited idling to provide for the safety of vehicle occupants of off-highway equipment (e.g. to run the air conditioning) no more than 30 minutes.
12. Diesel powered vehicles may idle for up to 30 minutes to minimize restart problems.

Any vehicle, truck, or equipment in which the primary source of fuel is natural gas or electricity is exempt from the idling limitations set forth in this special provision.

COOPERATION BETWEEN CONTRACTORS:

(7-1-95)(Rev. 1-16-24)

105-7

SP1 G133

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

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

TWELVE MONTH GUARANTEE:

(7-15-03)

108

SP1 G145

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

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

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

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

OUTSOURCING OUTSIDE THE USA:

(9-21-04) (Rev. 5-16-06)

SP1 G150

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.

AUTHORITY OF THE ENGINEER:

The Engineer for this project shall be the Division Engineer, Division 08, 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.

MATERIALS AND TESTING:

The Engineer reserves the right to perform all sampling and testing in accordance with Section 106 of the current edition 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.

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

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/her proposed work plan and to submit written reports of work accomplished on a frequency to be determined by the Engineer.

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 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. 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.

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.

SITE INVESTIGATION AND REPRESENTATION

The contractor acknowledges that he has satisfied himself as to the nature of the work, and general local conditions; particularly those bearing on transportation, availability of labor, and State Regulations for safety 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.**

DAMAGE TO NCDOT PROPERTY

Any damage to NCDOT property shall be repaired or replaced by the Contractor to the satisfaction of the Engineer. Payment to Contractor for work performed may be withheld until acceptable repairs are made to damaged property.

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/her 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.

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.

EROSION CONTROL

The Contractor shall exercise every reasonable precaution throughout the life of the project to prevent erosion and siltation.

MAINTENANCE OF PROJECT:

The Contractor shall maintain the project from the date construction begins until project is finally accepted in accordance with Section 104-10, Maintenance of Project, Section 104-11, Final Clean Up, and Section 105-16, Failure to Maintain the Project or Perform Erosion Control Work.

PAYMENT AND RETAINAGE

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. One hundred percent (100%) payment shall be made after successful completion of the work and all quantities have been verified. The invoices will show the requisition number and purchase order number and should state "Terms Net Ten (10) Days". There will be no retainage held on this project.

Prices and payment will be full compensation for all work covered including all miscellaneous materials to complete the work. 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 the basis for cancellation of the contract.

Units on the "Bid Proposal Form" are for bid evaluation only and do not reflect the purchase order limits. Purchase order quantities will be based on actual need. The Engineer reserves the right to make, at any time during the work, such changes in the quantities as necessary to satisfactorily complete the project.

PROJECT SPECIAL PROVISIONS**BRIDGE JOINT & DECK REPAIR****GENERAL**

Joints, bridge decks, and areas of foam injection to be repaired shall be designated by the Engineer. The Contractor shall begin work within 30 days of notification. Failure to respond within the designated time frame may result in liquidated damages or cancellation of this contract.

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.

The contractor shall notify the Bridge Engineer/Supervisor at the beginning of each week of his intended schedule of work. This will allow the DOT to schedule inspections accordingly.

All existing joint material removed shall become the property of the Contractor and shall be disposed of properly. All residual joint repair material shall be disposed of properly by the Contractor.

WORK ZONE TRAFFIC CONTROL

The Contractor shall maintain traffic in accordance with Division 11 of the *2024 Standard Specifications for Roads and Structures*. The Contractor shall furnish, install, maintain, relocate and remove any signs, barricades, drums, cones, flashing arrow boards, truck mounted impact attenuators, etc.

When closing a lane on a 2-lane, 2-way roadway the Contractor shall install temporary lane closures in accordance with Standard 1101.02 sheet 1 and 2 of 14 of the Highway Design Branch Roadway Standard Drawings. When closing a lane on a multi-lane roadway the Contractor shall install temporary lane closures in accordance with Standard 1101.02 sheets 3, 4, 5, 6, and 7 of 14 of the Highway Design Branch Roadway Standard Drawings.

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 shall be made under:

Temporary Lane Closure (2-Lane, 2-Way Roadway)	Each
Temporary Lane Closure (Multi-Lane Roadway).	Each
Lane Closure Shift (Multi-Lane Roadway).	Each

RESPONSE FOR BRIDGE REPAIRS

This work consists of preparatory work and operations to mobilize personnel, materials, supplies, equipment and incidentals into the Division. The item *Response for Bridge Repairs* will cover the Contractor mobilizing into the Division with the possibility of multiple project locations under one *Response*. The Contractor shall complete all work available before demobilizing which could include work they are notified of while working in the Division.

Payment for mobilization will be made for each work request. A single work request may consist of work at more than one location within the Division.

Pay Item	Pay Unit
Response for Bridge Repairs	Each

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 products or an approved equal:

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

Sealant – Dow 888

Baysilon 960 (silicon based)

Joints greater than one (1) inch in width:

Sealant – Dow 902 (silicon based)

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.

Payment shall be made under:

Pay Item	Pay Unit
Silicon Joint Replacement (Less than 1" Wide)	Linear Foot
Silicon Joint Replacement (1" to 2" Wide)	Linear Foot
Silicon Joint Replacement (Greater than 2" Wide)	Linear Foot

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) \pm wide by 1/8" (3 mm) \pm 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 \pm 15%
Tensile strength, psi (kPa)	ASTM D3575	110 \pm 15 (755 \pm 100)
Compression Recovery (% of original width)	AASHTO T42 50% compr. for 22 hr. @ 73°F (23°C) 1/2 hr. recovery	87 \pm 3
Weather/Deterioration	AASHTO T42 Accelerated Weathering	No deterioration for 10 years min.
Compression/Deflection	@ 50% deflection of original width	10 psi (69 kPa) min.

	@ 50% deflection of original width	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.

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, and incidentals will be included in the unit prices for Evazote Joint Replacement.

Payment shall be made under:

Pay Item	Pay Unit
Evazote Joint Replacement	Linear Foot

SYNTHETIC RUBBER EXPANSION JOINT SEAL:

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 1/2” 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 0°F to 120°F 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. Joints that require track saw cutting shall be determined by the Engineer. Payment for Track Saw Cutting for Joint Seal will be measured and paid by the linear foot. 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.

Payments shall be made under:

Pay Item	Pay Unit
Synthetic Rubber Expansion Joint Seal (1" to 2" Wide)	Linear Feet
Synthetic Rubber Expansion Joint Seal (2" to 3.5" Wide)	Linear Feet
Track Saw Cutting For Joint Seal	Linear Feet

ELASTOMERIC CONCRETE PLACEMENT

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

Contractor shall submit false work plans for approval. False work 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.

Provide materials that comply with the following minimum requirements at 14 days.

Elastomeric Concrete Properties	Test Method	Minimum Requirement
Compressive Strength, psi	ASTM D695	2000
5% Deflection Resilience	ASTM D695	95
Splitting Tensile Strength, psi	ASTM D3967	625
Bond Strength to Concrete, psi	ASTM D882 (D882M)	450
Durometer Hardness	ASTM D2240	50

Binder Properties (Without Aggregate)	Test Method	Minimum Requirement
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Tensile Strength, psi	ASTM D638	1000
Ultimate Elongation	ASTM D638	150%
Tear Resistance, lb/in	ASTM D624	200

In addition to the requirements above, use elastomeric concrete that also resists water, chemical, UV, and ozone exposure and withstands extreme temperature (freeze-thaw) changes.

Furnish a manufacturer's certification verifying that the materials satisfy the above requirements. Provide samples of elastomeric concrete to the Engineer, if requested, to independently verify conformance with the above requirements.

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.

BASIS OF PAYMENT

Payment shall be made under:

Pay Item	Pay Unit
Joint Repair using Elastomeric Concrete	Cubic Foot

ASPHALT JOINT REPAIR AND REPLACEMENT:

This work shall consist of supplying and installing a binder and aggregate system composed of specially blended polymer modified asphalt and specific aggregate placed in layers into a prepared expansion joint block-out. When properly installed, the joint system will provide a flexible waterproof bridge joint, which will allow for a joint movement of 1" in expansion and 1" in compression.

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 manufacturer'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 1/2" to 1" size stone shall be used.

Materials

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

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

(A) Binder Material

The bridge joint binder shall be a polymer modified asphalt and shall meet the following requirements when tested according to ASTM test methods:

	Test Method	Typical Values
Softening Point	ASTM D-36	180° F
Tensile Adhesion	ASTM D-3583	750% min.
Ductility @ 77°F	ASTM D-113	40 cm min
Penetration	ASTM D-3407	
	77°F, 150g, 5 sec.	90 dmm max.
	0° F 200g, 60 sec.	10 dmm min.
Flow 5h @ 140° F	ASTM D-3407	3.0 mm max.
Resilience @ 77° F	ASTM D-3407	40% min.
Asphalt Compatibility	ASTM D-3407	Pass
Recommended Pouring Temperature	-	390° F
Safe Heating Temperature	-	410° F

(B) Aggregate

The stone type shall consist of Granite, Basalt, Gabbro, Porphyry or Gritstones. The specified aggregate shall be crushed; double washed, and shall meet the following requirements:

Gradation	
Sieve Size	3/4" Percent Passing
7/8"	95-100
5/8"	30-50
1/2"	10-30
3/8"	0-7
1/4"	-
#8	-

(C) Backer Rod

The backer rod shall be a closed cell, foam expansion joint filler, capable of withstanding the elevated temperature of the polymeric binder. The backer rod shall have the following typical physical properties using a 2" specimen and test method ASTM D-545:

Density	2.0 lbs/cf, min.
Tensile Strength	30 psi, min.
Compression	5 psi @ 25%, min.

Water Absorption	0.03 g/cc by weight, min.
Temperature @ 410°F	No Melting

(D) Bridging Plate

The bridging plate shall be a mild steel plate, 1/4" thick by 8" wide, cut in 4' to 5' lengths. Spike holes shall be drilled on a longitudinal centerline at 1' intervals.

Installation Crews

The joint system is to be installed only by factory trained and certified installation professionals.

Equipment

The equipment will consist of:

1. Small self-propelled dry cut saw
2. Pneumatic compressor of 185 CFM capacity.
3. One Hot-Compressed Air Lance (HCA Lance), capable of delivering flame retarded air stream with a temperature of 3,000°F, at a speed of 3,000 feet per second.
4. Rotating vented or un-vented drum type mixers each with a Hot-Compressed Air Lance (HCA Lance), or a pressure – air injection torch (PAT torch).
5. Melter unit equipped with agitation and an automatic temperature control which can accurately maintain the material temperature from 100°F - 650°F. A thermometer to monitor the material temperature must be provided. The burner system shall have a safety pilot capable of shutting off the gas supply in the event of a flame-out.
6. 100 lbs. Bottles of propane or smaller
7. Vibratory roller or plate capable of compacting up to 1" in one pass.
8. Hand held calibrated digital temperature sensor.
9. Chop-saw with carbide blade, if needed.
10. Sandblasting equipment, required only for installation in a concrete overlay.
11. Safety clothing and equipment as required by OSHA.

Installation

The following procedures are to be followed to ensure a successful

installation: Note: Joint must be installed at a minimum depth of 2”.

Layout: Joint system shall be located centrally over the deck expansion gap or fixed joint and marked out to the recommended minimum width of 20”.

Excavation: The joint shall be excavated by the use of saws and pneumatic hand tools. Where possible, saws shall be set to cut the full required depth of the wearing surface and any membrane present. Variations in the depth of the wearing surface across the road should be considered to insure, where possible, that the deck is not damaged. All debris from the excavation channel shall be removed to allow the full volume of new joint to be installed.

Cleaning: The entire channel must be thoroughly cleaned and dried. Small debris will be removed by using compressed air. The Hot Compressed Air Lance will then be applied throughout the length of the channel. Installation in concrete overlays requires sandblasting of the concrete vertical walls and adjacent deck area prior to the use of the HCA Lance application.

Repairs: Spalled and defective concrete should be repaired with an approved material as agreed upon by the Engineer.

Caulking: The gap shall be caulked with the backer rod, allowing for approximately 1” of binder in the gap on top of the rod. If the previous caulking is intact and will hold the binder, it may be used to take the place of the backer rod. A small amount of hot binder should be placed onto the caulking to insure that the gap is adequately plugged.

Tanking: Immediately after cleaning and caulking, the entire channel shall be coated with a thin layer of hot binder. If significant delay occurs, the channel shall be inspected to determine if re-cleaning is necessary.

Plating: The gap shall be bridged with the steel plates centered over the gap by placing locating pins in the centerline of the plate. There must be at least 2” between the edge of the steel plate and the wall of the channel. Once the locating pins are in place, the top of the plate shall be coated with a thin layer of hot binder.

Material Preparation

Aggregate: The aggregate must be heated in a vented or un-vented rotating drum mixer by the use of a hot compressed air lance (HCA Lance), or a pressure air injection torch (PAT torch). Once the aggregate has been heated to a temperature of 370° - 380°F, it is then coated with a small quantity of binder. One gallon of binder per 100 lbs. of stone should be sufficient to coat the stone.

Binder: The binder shall be heated to the recommended pouring temperature, 370° - 385°F. At no time shall the recommended safe heating temperature of 400°F be exceeded.

Material Installation: Layers of hot pre-coated aggregate not more than 2.5” thick shall be placed in the channel and immediately covered to the level of the coated aggregate. This will ensure that the 3:1 weight ratio of aggregate to binder has been achieved. Layers shall be raked to insure the aggregate is completely coated and that all air pockets are eliminated. This

process shall cease approximately 3/4" from the top of the channel.

Surface Layer: The surface layer shall be applied as other layers except that the pre-coated aggregate is not flooded with binder. The pre-coated aggregate shall be transferred to the joint and leveled slightly higher than the adjacent road surface. On a standard 2" deep joint, the topcoat should be 1/4" higher than the road surface. Deeper joints will require higher levels before tamping.

Compaction: Compaction should take place after the joint has cooled to approximately 225° F. The joint surface shall be made approximately level with the existing road surface by using the vibratory plate or roller.

Top Coating: After compaction, lines of 4" tape are placed one inch beyond the joint width on each side of the joint to insure evenness of appearance. The joint and at least one inch of the road surface shall be top-coated with the hot binder until the surface is smooth and absent of voids.

Note: If it is impossible to topcoat the joint during the same working day/night, it is allowable that the topcoat step be completed on the next working day/night. However, the surface must be cleaned, dried, and heated with the HCA Lance.

Surface Dressing: Immediately after top-coating, an anti-skid material is spread evenly over the joint to eliminate material tracking (Black Beauty Sand, Medium Grade).

Final Preparation: Prior to departure the crew will insure that the entire work area is clean of debris.

Temporary Joint: In the event of a work stoppage while constructing a joint, the following procedure can be used for low ADT roadways (<20,000). Fill the cavity with cold uncoated aggregate to the level of the road surface and top the aggregate with binder to form a temporary riding surface. Roadways with an ADT greater than 20,000 will require materials similar to cold patch asphalt. Be sure whatever is used is approved by the state agency.

Quality Control

Upon request, certifications of the materials will be provided.

The Project Engineer may require the contractor to provide samples during the course of the work for laboratory test of any or all of the properties specified.

Payments shall be made under:

Pay Item	Pay Unit
Asphalt Joint Repair/Replacement (18"-24" Wide, w/ Plate)	Cubic Foot

CONCRETE/ASPHALT REPAIR (HOT APPLIED MASTIC ASPHALT BINDER):

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

Fibrecrete B or 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 and screeded to fill the recess flush with the surrounding area and overlap the edges. While the material is still molten, a preheated high PSV 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 Contractor's 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.

Materials

(A) Hot Applied Mastic Asphalt Binder

Material shall be a flexible repair material for joint/large crack, spalls and pot-hole repairs in asphalt and concrete. It is a hot-applied mastic asphalt binder with 36% bitumen content, polymers mixed with graded fillers, recycled steel fibers (less than 1% total weight), aggregates and recycled tire rubber (no less than 3% of total weight).

(B) Applications

Material shall be designed to replace traditional asphaltic repairs, which are prone to failure due to their stiffness. The material shall be resistant to water intrusion and to a broad range of salts, bases and organic materials.

(C) Material Specifications

The material shall be an electrometric polymer modified binder, installed in accordance

with the manufacturer's specification and shall conform to the following properties:

Binder Properties	Method	Requirement
Bond	ASTM D 1190	Pass, 3 cycles @ -20°C, 50%
Penetration	ASTM D 5329	1 mm min @ -18°C, 200 g, 60 sec
		9 mm max @ 25°C, 150 g, 5 sec
Ductility	ASTM D113	40 cm min @ 25°C
Flexibility	ASTM D5329	Pass @ -12°C
Flow	ASTM D5329	3 mm max @ 60° @ 5 hours
Resilience	ASTM D5329	40% min @ 25°C
Softening Point	ASTM D36	82°C min
Elongation	-	500% min
Wheel tracking@ 122°F	BS598	4.8mm/h
Safe Heating Temperature	-	230°C (440°F)
Recommended Pouring Temperature	-	185°C to 199°C (365°F-390°F)

Site Preparation

The joint/crack shall be milled with a mechanical planer to the specified width and depth (if required) all spalls and pot holes shall be milled or saw cut or jack hammered at the Engineer's discretion. The repair surfaces will be cleaned and dried with a hot air lance capable of producing temperatures in excess of 1400°C and directional velocities exceeding 750 meters per second. The recessed area and vertical walls will be treated with a primer agent to promote adhesion and prevent moisture intrusion (for concrete applications only).

Installation

Installation of the material shall be by factory trained and certified installation professionals. The material will be heated in a thermostatically controlled mixer, having a horizontal agitator that ensures complete mixing. Once the material has reached approximately 300°F, the molten material will be introduced into the prepared repair area, sealing the bottom of the repair from water intrusion. For depths greater than 1", heated 3/4" granite aggregate shall be added at a rate of 25% - 35% by volume. The final 3/4" of the repair will be the hot applied mastic asphalt binder material for optimum flexibility of the repair. Once this top layer has been screeded to a level grade, a high PSV aggregate will be applied to the top of the repair to ensure proper skid resistance.

Depending on the depth of the repair, the material will be ready for traffic return between 30 minutes to 1 hour.

All removed materials and residual repair materials will be recovered and disposed of away from the site according to the client's specifications.

Warranty

The supplier shall warrant that the material furnished shall perform for 2 years from date of installation when installed by the materials supplier's certified applicator and installed to the

manufacturers specifications.

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 will be made under:

Pay Item	Pay Unit
Concrete/Asphalt Deck Repair (Hot Applied Mastic Asphalt Binder)	Pounds

CONCRETE/ASPHALT REPAIR (HOT APPLIED SYNTHETIC POLYMER MODIFIED RESIN):

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

Fibrecrete G or 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 PSV 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.

Materials

(A) Hot Applied Synthetic Polymer Modified Resin

Material shall be a flexible repair material for joint/ large cracks, spalls and pot holes in concrete. It is a hot-applied, synthetic polymer modified resin compound containing mineral fillers, chopped fibers, and graded aggregates.

(B) Applications

Material shall be designed to replace traditional cementitious repairs, which are prone to failure due to their stiffness. The installed product shall be color-matched, a load-transferring repair that has superior tensile strength and shall have the flexibility to accommodate limited joint/crack movement. The material shall be resistant to water intrusion and to a broad range of salts, bases and organic materials, making the repair a long-term solution for highway maintenance projects.

(C) Material Specifications

The material shall be a synthetic polymer modified resin binder. Installed in accordance with the manufacturer's specifications, the installed product will conform to the following properties:

Binder Properties	Method	Requirement
Bond	ASTM D 1190	Pass, 3 cycles @ -20°C, 50%
Penetration	ASTM D 5329	1 mm min @ -18°C, 200 g, 60 sec
		9 mm max @ 25°C, 150 g, 5 sec
Ductility	ASTM D113	40 cm min @ 25°C
Flexibility	ASTM D5329	Pass @ -12°C
Flow	ASTM D5329	3 mm max @ 60° @ 5 hours
Resilience	ASTM D5329	40% min @ 25°C
Softening Point	ASTM D36	82°C min
Elongation	FTL	500% min
Wheel tracking@ 122°F	BS598	4.8mm/h
Safe Heating Temperature	-	230°C
Recommended Pouring Temperature	-	185°C to 199°C

Site Preparation

The joint/crack, spall or pot hole will be saw-cut/milled to the specified width and depth (if required). The joint/crack, spall or pot whole surfaces will be cleaned and dried with a hot air lance capable of producing temperatures in excess of 1400°C and directional velocities exceeding 750 meters per second. The recessed area and vertical walls will be treated with a primer agent to promote adhesion and prevent moisture intrusion (for concrete applications only).

Installation

The material will be heated in a thermostatically controlled mixer, having a horizontal agitator

that ensures complete mixing. Once the material has reached approximately 195°C, the molten material will be introduced into the prepared repair, sealing the bottom of the repair from water intrusion. The remainder of the repair process will consist of layering coarse hot angular aggregate (cleaned and dried) with the molten material until within 1/2" of the top of the repair. The final 1/2" of the repair will be hot applied synthetic polymer modified resin material for optimum flexibility of the repair. Once this top layer has been screened to a level grade, a high PSV aggregate will be applied to the top of the repair to ensure proper skid resistance. Depending on the depth of the repair, the material will be ready for traffic return between 30 minutes to 1 hour.

All removed materials and residual repair materials will be recovered and disposed of away from the site according to the client's specifications.

Warranty

The supplier shall warrant that the materials furnished shall perform for 2 years from date of installation when installed by the materials supplier's certified applicator and installed to the manufacturers specifications.

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 will be made under:

Pay Item	Pay Unit
Concrete/Asphalt Deck Repair (Hot Applied Synthetic Polymer Modified Resin)	Pounds

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

MATERIAL

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

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

Density, Lbs/Ft ASTM 1622	Compressive Strength 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 undersealing equipment shall be submitted to the Engineer prior to commencement of work 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” diameter holes.
- B. A truck-mounted pumping unit capable of injecting the high-density polyurethane formulation below the concrete slab or asphalt pavement. This pumping unit will be capable of controlling the rate of rise of the pavement.
- C. Stringlines or dial indicators will be periodically monitored to ensure that the concrete slab or overlay is raised to the required elevation. These devices are not used to constantly monitor or determine the moment movement begins.

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 feet or less. 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.

The Contractor shall prepare concrete to be leveled, undersealed or void filled by profiling existing pavement and determining where the pavement needs to be raised. A series of 5/8" holes shall be drilled into the pavement 3-6 foot O.C. (exact location and spacing to be determined in the field). Drilled holes shall extend through the pavement and into known voids. Holes shall not extend into the subgrade. 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. The Contractor will be held responsible for any pavement blowouts, excessive pavement lifting or pavement damage that may occur as a result of the Contractor's work. The Contractor shall repair any such suspect areas to the satisfaction of the Engineer at the Contractor's expense. It will be the Contractor's responsibility to control these operations to make sure excessive rising of the slabs does not occur. Where such does happen, the Contractor shall be responsible for planning or replacing the existing pavement structure to provide, at the Engineer's discretion, a suitable riding surface.

Measurement

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

Verification of actual amount 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 will be made under:

Pay Item	Pay Unit
Slab Leveling, Undersealing, and Void Filling	Pounds

SOIL STABILIZATION:**Description**

Pressure inject hydrophobic polyurethane injection resin into the soil at locations to be determined by the Engineer to permeate, stabilize weak and loose soils, and prevent water migration. The Contractor shall furnish all materials, labor, tools, and equipment to stabilize soils as specified.

(A) Quality Assurance

Manufacturer of polyurethane material shall have been in existence for a period of not less than 15 years.

The Contractor shall provide the Engineer with job references where they have successfully completed 10 projects using moisture activated hydrophobic polyurethane resins for soil stabilization.

(B) Delivery, Storage, and Handling

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

(C) Site Conditions

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°F protect grout from freezing. Ice or the formation of ice can prevent grout penetration and travel.

Contractor shall take all precautions necessary to insure that no damage will occur to any work zone due to handling or pumping of the polyurethane resin.

Materials**(A) Acceptable Manufacturers**

- (1) Prime Flex 920, as manufactured by Prime Resins, Inc., Conyers, Georgia (800-321-7212) is considered to conform to the requirements of this specification and has performed satisfactorily for soil stabilization.
- (2) The use of a product other than specified will be considered providing the Contractor requests its use in writing to the Engineer. The request shall be accompanied by a notarized certification of compliance from an approved independent testing laboratory that the proposed substitute product meets or exceeds the specified performance criteria, tested in accordance with the specified test standards, and documented proof that the proposed product has a proven record of performance of soil stabilization, confirmed by actual field tests and five

successful installations that the Engineer can investigate.

- (3) The installing Contractor must have a minimum of at least 10 successful soil stabilization projects utilizing moisture activated hydrophobic polyurethane injection resins and be able to provide project lists and references to the Engineer.

(B) Performance Criteria

- (1) Physical properties of polyurethane resin:
 1. Water activated resin
 2. Variable cure rate
 3. Viscosity: 110-130 cps \pm 20 cps
 4. Solids Content: 100% solids
 5. Characteristics: Hydrophobic polymer
 6. Meets ANSI/NSF 61 Approval
- (2) Physical properties of catalyst:
 1. Appearance: Clear liquid
 2. Viscosity: 15-20 cps
 3. Solids Content: 100%
- (3) 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%
 3. ANSI/NSF 61 Approval

(C) Polyurethane Resin Specifications

- (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 hydrophobic in nature.

Construction Methods

(A) Preparation

Prior to starting work the Owner shall provide the grouting contractor with detailed drawing of all underground utilities in the work zone and all utilities shall be properly marked on the site. If a soil analysis report is not part of the original documents the contractor has the right to request one be provided at no additional cost to the contractor. This may be needed to determine proper probe placement, to identify potential problem areas, and natural differences in soil composition.

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" to 60" in each direction and if multiple rows are needed then each row shall be offset 1/2 the space distance.) Probes: Pipe shall utilize Expendable Drive Point or other acceptable means to keep dirt from clogging pipe during driving. Type and size to be determined by Contractor. Probes may be placed by manual driver, pneumatic driver, auger, or water jetting.

Prior to injecting grout Contractor shall ensure that the soils contain enough moisture to fully react 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:water) shall be used. A pump capable of injection pressures from 100 psi to 3300 psi is recommended. Flow rate of pumps shall be 2.0 gpm minimum. Manually operated or "hand pumps" are considered unacceptable and cannot be used.

A grout log shall be maintained recording amount of grout and percentage of catalyst used for inspection by the Engineer at all times. Request for payment of grout shall include a copy of grout log detailing quantities used.

(B) Application

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" to 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.

On below grade structures grouting can also be done via the "through wall" method. This involves drilling holes through a wall (or floor) and grouting via these holes. In some cases it may be necessary to install soil pipes to transfer grout further out into the soils. Contractor to determine appropriate hole spacing to ensure desired results.

Adhere to all limitations and cautions set forth by the manufacturer.

(C) Safety

Copy of Data sheet and Material Safety Data Sheet (MSDS) of all chemicals used must be on site at all times.

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.

(D) Cleaning

- (1) Flush the pump and hoses with approved pump flush. Do not use solvents to clean off human skin.

- (2) Uncured polyurethane resin can be removed from tools with an approved solvent. Cured polyurethane can only be removed mechanically.
- (3) Remove all pipes from work area.
- (4) Leave work area clean and neat.

Measurement and 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 will be made under:

Pay Item	Pay Unit
Soil Stabilization	Gallons

STRUCTURAL FOAM VOID FILL/SLAB STABILIZATION:

Description

Inject a structural, two-component, polyurethane foam at locations to be determined by the Engineer to stabilize slabs and structures with voids to prevent further movement or settling. The Contractor shall furnish all materials, labor, tools, and equipment to stabilize soils as specified.

(A) Quality Assurance

Manufacturer of polyurethane resin material shall have been in existence for a period of not less than 15 years.

The Contractor shall supply the Engineer with 10 job references where they successfully injected polyurethane resin for sub-sealing, void filling applications, or soil stabilization.

Contractor shall provide submittals prior to commencement of work that details the material to be used and that it conforms to the project specifications.

(B) Delivery, Storage, and Handling

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

Materials**(A) Acceptable Manufacturers**

- (1) Prime Flex 985 (LX-10 or LX-20) Structural Foam, as manufactured by Prime Resins, Inc., Conyers, Georgia (800-321-7212) is considered to conform to the requirements of this specification and has performed satisfactorily for the application of void filling and slab stabilization.
- (2) The use of other than the specified materials will be considered providing the Contractor requests their use in writing to the Engineer. This request shall be accompanied by: (1) a certificate of compliance from an approved independent testing laboratory that the proposed substitute products meet or exceed the specified performance criteria, tested in accordance with the specified test standards; and (2) documented proof that the proposed substitute product has a 5 year proven record of performance, confirmed by actual field tests and 5 successful installations that the Engineer can investigate. Instant or rapid set (less than 5 minutes) foams will not be approved due to lack of migration time needed for material travel between rock.

(B) Performance Criteria

- (1) Properties of the mixed polyurethane resin for void filling and stabilizing:
 1. Mix ration (by volume): 1:1 (A:B)
 2. Initial reaction time: 70 sec. @ 72°F (23°C)
 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 lbs. density 9216 psf*
- * Expansion is affected by field conditions. Actual results may vary depending on temperature, mixing equipment and degree of constraint.

(C) Polyurethane Resin Specifications

- (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 exotherm temperature to not exceed 270°F per 10cf.

Construction Methods

(A) Mixing

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) may be used to mix and dispense material.

(B) Application

Locate and mark areas with voids.

Using drill, drill a series 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.

Use a 1/4” rod, dowel, or other instrument to determine depth of void under slab. After determining amount of void, calculate approximate amount of resin needed.

Using meter-mix, positive displacement pump, inject pre-determined amount (to be based on field conditions) of Prime-Flex 985 Structural Foam into void.

left open for venting of excess foam or plugged off with a wood dowel or other means. Removing plugs will also assist in relieving pressure by allowing excess foam to release out top.

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.

(D) Cleaning

- (1) Clean the substrate to produce a finish appearance acceptable to the Engineer and Owner. Shave excess foam from area.
- (2) Clean tools and equipment with MEK or Xylene immediately after use. Cured polyurethane foam can only be removed mechanically. Clean skin with soap and water, NEVER solvent.
- (3) Leave work area neat, clean, safe and without evidence of spillovers onto adjacent areas.

Measurement and 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 will be made under:

Pay Item	Pay Unit
Structural Foam Void Fill/Stabilization	Gallons

FULL DEPTH CONCRETE SAWING

The Contractor shall perform full depth saw cutting to shape, straighten, or otherwise modify concrete decks and rails as deemed necessary by the Engineer to provide a suitable joint.

BASIS OF PAYMENT

The quantity of material to be paid for shall be the quantity successfully completed, 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 this work shall be considered incidental to the contract bid items.

Payment shall be made as follows:

Pay Item	Pay Unit
Full Depth Sawing of Concrete Deck	Linear Foot
Full Depth Sawing of Concrete Rail	Linear Foot

SILANE DECK TREATMENT (SPECIAL)

DESCRIPTION

This work consists of preparation of concrete bridge deck surfaces and the furnishing and application of alkylalkoxysilane (silane) penetrant sealers, with 100% solids, to seal bridge deck surfaces and cracks. Prepare the surface of the concrete deck and apply the silane bridge deck sealer in accordance with this special provision and as indicated on the plans, or as approved by the Engineer.

Work includes: bridge deck surface preparation, placement of silane deck sealer, and any incidentals necessary to complete the project, as specified or as indicated on the plans.

(A) SUBMITTALS

Submit for approval the following requested items and any other relevant documents:

- (B) A safety data sheet (SDS) for each shipment of the silane materials.
- (C) Silane material information and manufacturer's written preparation and application instructions.
- (D) Certification from an independent testing laboratory that the materials meet the requirements of these provisions. Do not incorporate these materials into the project until the Engineer has accepted and approved the certification for the material.
- (D) The dates of manufacture of the silane materials, their lot numbers and date of shelf-life expiration for each lot number.
- (E) A table indicating the likely cure time, in minutes, to allow vehicular traffic on the silane-treated deck surface. Provide time for the allowable ambient temperature range, in

increments of 10° F (6° C).

- (F) A work plan for each structure that includes estimated times for surface preparation and silane application.

MATERIAL DELIVERY AND STORAGE

Store at the site sufficient quantities of silane materials to perform the entire application.

Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact. Ensure that each container is clearly marked by the manufacturer with the following information:

- (A) Manufacturer's name and address.
- (B) Product name.
- (C) Date of manufacture.
- (D) Expiration date.
- (E) Lot identification number.
- (F) Container serial number.

Provide the Engineer a certification from the manufacturer, confirming that the silane materials meet the requirements of this special provision. Do not incorporate these materials into the project until the Engineer has accepted and approved the certification for the material. Submit such certification for each lot of material delivered to the project. In each certification, identify the serial or lot numbers of the containers certified.

The Engineer may require samples from each lot or container of materials delivered to the project or from containers at the point of use. When samples are required, furnish samples in accordance with the Engineer's instructions.

Store silane materials in unopened containers in a clean, dry area between 40° F and 90° F. Store containers in a manner that prevents leakage or spillage.

MANUFACTURER'S REPRESENTATIVE

Provide a manufacturer's representative on site for the duration of the surface preparation and silane application work, to provide expert assistance on surface preparation, storage, mixing, application, clean-up, and disposal of materials.

MATERIALS

Provide silane from a single manufacturer and provide silane that conforms to requirements indicated in Table 1, below.

**Table 1
SILANE PROPERTIES**

Property	Test Method	Requirement
Silane Content		100%
VOC content	EPA method 24	Less than 350 g/l
Surface Appearance after Application		Unchanged
Flash Point	ASTM D3278	140° F, minimum

Resistance to Chloride Ion Penetration	AASHTO T259 and T260	Less than: 0.52 pounds/yd ³ (criteria of 1.5) at 1/2 inch level; 0.00 pounds/yd ³ (criteria of 0.75) at 1 inch level
Water absorption test	ASTM C 642	0.50% maximum/48 hours; 1.5% maximum/50 days
Scaling resistance	ASTM C 672	(non-air-entrained concrete) 0 rating “No Scaling” (100 cycles)
NCHRP 244		
Water weight gain	Series II - cube test	85% reduction, minimum
Absorbed chloride		87% reduction, minimum
Absorbed chloride	Series IV - Southern climate	95% reduction, minimum

SURFACE PREPARATION

Prepare the surface of the concrete deck for application of the silane by shotblasting in order to remove all existing grease, slurry, oils, paint, dirt, striping, curing compound, rust, membrane, weak surface mortar, or any other contaminants that could interfere with the proper adhesion, penetration, and the curing of the silane material.

Prepare a final surface that adheres to the following requirements:

(A) For areas to receive deck seal treatment, clean by shotblasting. Where approved by the Engineer, abrasive sandblasting may be used in areas that cannot be accessed by the shotblaster. Select the size of shot or sand, and travel speed of the equipment to provide a uniformly clean surface with a uniform profile. Remove striping to the maximum extent determined to be practical by the Engineer using up to three passes with shotblasting, sandblasting, or other approved equipment. Do not expose cleaned surfaces to vehicular traffic unless approved by the Engineer. If the deck becomes contaminated before placing the silane deck sealer, shotblast or abrasive sandblast the contaminated areas to the satisfaction of the Engineer, at no additional cost.

(B) Prior to silane application, protect cracks on the concrete bridge deck from materials that can interfere with the penetration and the curing of the silane material. Just prior to placement of the silane, remove, by magnets and oil-free compressed air and vacuuming, any loose particles, such that no excess particles remain. The concrete deck shall be completely dry. Power washing will not be allowed.

(C) The silane manufacturer may suggest cleaning and preparation methods other than those detailed by this special provision. The Engineer must approve such alternative methods prior to implementation.

SILANE APPLICATION

(A) Test Area

- (1) Test a small area of the surface (minimum 5 ft. by 5 ft.) before general application to ensure desired performance results, aesthetics, and application rates and to verify application technique. Allow 5–7 days for the product to react fully before evaluating.
- (2) Application rates may vary depending on field conditions and the substrate to be treated.
- (3) Conduct at least one absorption test in the test area, using a Rilem Tube Test. Acceptable results are no loss of water in the Rilem tube over a period of 20 minutes. Adjust application to achieve required repellent performance.
- (4) The manufacturer's representative shall assist the Contractor in determining the application rates. Use test applications on actual surfaces to determine accurate application rates. Extremely porous surfaces may require two (2) coats of silane.
- (5) Do not begin production application of silane until Engineer has approved the test area, including approval of aesthetics, color, texture, and appearance.

(B) Application

Immediately before placing silane, all exposed surfaces shall be completely dry and blown clean with oil-free compressed air to remove any loose dust and debris. Apply silane as soon as practical after the exposed surfaces have been properly prepared and conditions are satisfactory:

- (1) Stir material thoroughly before and during application.
- (2) Apply silane with low-pressure spray or by flooding, followed by brooming or squeegeeing for even distribution, in accordance with manufacturer's instructions.
- (3) Maintain operating pressures in sprayers used for application of the silane sealer material sufficiently low so that atomization or misting of the material does not occur.
- (4) Begin the application of the silane at the lowest elevation and proceed upward, toward higher elevations, unless otherwise approved by the Engineer.
- (5) Apply even distribution of silane. Take care when applying the silane, so that running or ponding does not occur.
- (6) Apply silane in a single application to the concrete deck surface with enough material to saturate the surface. Remove excess material with a broom or squeegee and dispose of

excess material appropriately. If a second coat is required, it should be applied "wet on wet" before first coat dries.

- (7) Application of sealant by spray methods will not be permitted when wind speeds are 20 mph or more, or if in the opinion of the Engineer, unsatisfactory results will be obtained. Other application methods or rescheduling will be required.
- (8) Avoid application with hand pump sprayers. For small areas of silane application, the use of hand pump sprayers must be approved by the Engineer.
- (9) Contractor shall protect from overspray all pedestrians, vehicles, plants and vegetation, and other areas not receiving silane application.

- (10) Allow product to penetrate the bridge deck and dry, as required by the manufacturer, prior to opening to traffic.

LIMITATIONS OF OPERATIONS

- (1) Prior to application of any silane sealer, cure concrete or concrete repairs for a minimum of 28 days or as required by the silane manufacturer.
 - (2) Do not use silane material after the shelf life date.
- (3) Do not return unused material in opened containers to storage for later use. Either apply such material to appropriate areas on concrete deck surfaces or remove and appropriately dispose of it at offsite locations provided by the Contractor.
- (4) If expansion joints are not being replaced or have been replaced prior to shotblasting, they shall be protected from damage from the shotblasting operation. Deck drains and areas of curb or railing above the proposed surface shall be protected from the shotblasting operation.
- (5) Pick up and store all blast media and contaminants in a vacuum unit. Do not create dust during the blasting operation that will obstruct the view of motorists in adjacent roadways. Store, handle, and dispose of blast media and contaminants in accordance with all applicable local, state, and federal requirements.
- (6) Cover deck joint seal and elastomeric material, plug deck drain scuppers, seal cracks on underside of deck, and use other necessary protective measures to prevent leakage of silane below the concrete deck, to protect waterways, bridge components, pedestrians, vehicles, roadway, vegetation, and any other items or areas below or near the bridge.
- (7) Application of sealant by spray methods will not be permitted during windy conditions, if in the opinion of the Engineer, unsatisfactory results will be obtained. Other application methods or rescheduling will be required.
- (8) Avoid application with hand pump sprayers. For small areas of silane application, the use of hand pump sprayers might be allowed, but must be approved by the Engineer.
- (9) Protect traffic from rebound, dust, overspray, and construction activities. Provide appropriate shielding, as required and/or directed by the Engineer.
- (10) The Contractor shall provide suitable coverings (e.g. heavy-duty drop cloths) as needed to protect all exposed areas not to receive silane treatment, such as asphalt pavement, curbs, sidewalks, parapets, etc.
- (11) Clean and/or repair all damage or defacement resulting from Contractor's operations to the Engineer's satisfaction at no additional cost to the Department.
- (12) The equipment used for silane application must be clean of foreign materials and approved by the Engineer before use.
- (13) The surface to receive the treatment shall be dry for at least 48 hours before treatment and shall be free from sand, surface dust and dirt, oil, grease, chemical films, and other contaminants prior to application of the silane.
- (14) The surface, air, and material temperatures shall be between 40°F and 90°F during application.

- (15) Do not apply silane materials during cold, hot, or wet weather conditions or when adverse weather conditions are forecast within 12 hours of the completion of the silane application. Correct any coating damaged by rain or moisture by an additional application or as required by the silane manufacturer.
- (16) Protect prepared surfaces from precipitation and heavy dew during and after the application of the silane.
- (17) Conduct the work in a continuous operation, with the silane application as soon as practical following surface preparation.
- (18) Apply silane during the lowest temperature period of the day, typically between 1:00 a.m. and 9:00 a.m., when the cracks are open to the greatest extent.
- (19) Clean up, dispose of any surplus material, and restore any disturbed areas unless otherwise directed.
- (20) 100% Silane is a combustible liquid; take appropriate precautions during handling, storage, and operations. KEEP AWAY FROM OPEN FLAME.
- (21) Work crews should wear appropriate personal protection equipment and follow manufacturer's recommendations when applying silane. Refer to the SDS and all applicable local, state, and federal laws, and rules and regulations of authorities having jurisdiction over the project, for specific guidance for personal and environmental protection and safety requirements.

MEASUREMENT AND PAYMENT

Shotblasting Bridge Deck will be measured and paid for at the contract unit price per square yard and will be full compensation for the shotblasting and necessary sandblasting and handwork to prepare the entire concrete bridge deck, and removal and disposal of all waste material generated.

Silane Deck Treatment will be measured and paid for at the contract unit price per square yard and will be full compensation for bridge deck surface and crack preparation; for furnishing and applying the silane deck treatment; for protection of waterways, bridge, and other nearby surfaces, vehicles, and pedestrians; and for all labor, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Shotblasting Bridge Deck	Square Yard
Silane Deck Treatment	Square Yard

SHOTCRETE REPAIRS**GENERAL**

The work covered by this special provision consists of removing deteriorated concrete from the structure in accordance with the limits, depth and details shown on the plans, described herein and as established by the Engineer. This work also includes removing and disposing all loose debris, cleaning and repairing reinforcing steel and applying structural shotcrete.

The location and extent of repairs shown on the plans are general in nature. The Engineer shall determine the extent of removal in the field based on an evaluation of the condition of the exposed surfaces.

Any portion of the structure that is damaged from construction operations shall be repaired to the Engineer's satisfaction, at no extra cost to the Department.

MATERIAL REQUIREMENTS

Use prepackaged dry mix shotcrete conforming to the requirements of ASTM C1480, the applicable sections of the *Standard Specifications* and the following:

Test Description	Test Method	Age (Days)	Specified Requirements
Silica Fume (%)	ASTM C1240	-	10 (Max.)
Air Content - As Shot (%)	ASTM C231 or ASTM C457	-	5 ± 2
Minimum Compressive Strength (psi)	ASTM C109	7 28	3,000 5,000
Minimum Bond Pull-off Strength (psi)	ASTM C1583 or ASTM C882	28	250
Rapid Chloride Permeability Tests (range in coulombs)	ASTM C1202	-	100 - 1000

Admixtures are not allowed unless approved by the Engineer. Store shotcrete in an environment where temperatures remain above 40°F and less than 95°F

All equipment must operate in accordance with the manufacturer's specifications and material must be placed within the recommended time.

QUALITY CONTROL**(A) Qualification of Shotcrete Contractor**

The shotcrete Contractor shall provide proof of experience by submitting a description of jobs similar in size and character that have been completed within the last five (5) years. The name, address and telephone number of references for the submitted projects shall also be furnished. Failure to provide appropriate documentation will result in the rejection of the proposed shotcrete contractor.

(B) Qualification of Nozzleman

The shotcrete Contractor's nozzleman shall be certified by the American Concrete Institute (ACI). Submit proof of certification to the Engineer prior to beginning repair work. The nozzleman shall maintain certification at all times while work is being performed for the Department. Failure to provide and maintain certification will result in the rejection of the proposed nozzleman.

TEMPORARY WORK PLATFORM

Prior to beginning any repair work, provide details for a sufficiently sized temporary work platform at each repair location. Design steel members to meet the requirements of the American Institute of Steel Construction Manual. Design timber members in accordance with the *National Design Specification for Stress-Grade Lumber and Its Fastenings* of the National Forest Products Association. Submit the platform design and plans for review and approval. The design and plans shall be sealed and signed by a North Carolina registered Professional Engineer. Do not install the platform until the design and plans are approved. Drilling holes in the superstructure for the purpose of attaching the platform is prohibited. Upon completion of work, remove all anchorages in the substructure and repair the substructure at no additional cost to the Department.

SURFACE PREPARATION

Prior to starting the repair operation, delineate all surfaces and areas assumed to be deteriorated by visually examining and sounding the concrete surface with a hammer or other approved method. The Engineer is the sole judge in determining the limits of deterioration.

Prior to removal, introduce a shallow saw cut approximately ½" in depth around the repair area at right angles to the concrete surface. Remove all deteriorated concrete 1 inch below the reinforcing steel with a 17 lb (maximum) pneumatic hammer with points that do not exceed the width of the

shank or with hand picks or chisels as directed by the Engineer. Do not cut or remove the existing reinforcing steel. Unless specifically directed by the Engineer, do not remove concrete deeper than 1 inch below the reinforcing steel.

Abrasive blast all exposed concrete surfaces and existing reinforcing steel in repair areas to remove all debris, loose concrete, loose mortar, rust, scale, etc. After sandblasting examine the reinforcing steel to ensure at least 90% of the original diameter remains. If there is more than 10% reduction in the rebar diameter, splice in and securely tie supplemental reinforcing bars as directed by the Engineer.

Provide stainless welded wire fabric at each repair area larger than one square foot if the depth of the repair exceeds 2 inches from the existing, intact exterior face of the concrete member. Provide a minimum 4" x 4" - 12 gage stainless welded wire fabric unless otherwise shown on the plans. Rigidly secure the welded wire fabric to existing steel or to $\frac{3}{16}$ " diameter stainless hook fasteners adequately spaced to prevent sagging. Encase the welded wire fabric in shotcrete a minimum depth of 1½ inches.

With the exception of overhead applications, the contractor has the option to use synthetic fiber reinforcement as an alternate to welded wire fabric if attaching welded wire fabric is impractical

or if approved by the Engineer. Welded wire fabric and synthetic fiber reinforcement shall not be used in the same repair area.

Thoroughly clean the repair area of all dirt, grease, oil or foreign matter, and remove all loose or weakened material before applying shotcrete. Saturate the repair area with clean water the day before applying shotcrete. Bring the wetted surface to a saturated surface dry (SSD) condition prior to applying shotcrete and maintain this condition until the application begins. Use a blowpipe to facilitate removal of free surface water. Only oil-free compressed air is to be used in the blowpipe.

The time between removal of deteriorated concrete and applying shotcrete shall not exceed five (5) calendar days. If the time allowance exceeds (5) calendar days, prepare the surface at the direction of the Engineer before applying shotcrete.

APPLICATION AND SURFACE FINISH

Apply shotcrete only when the surface temperature of the repair area is greater than 40°F and less than 95°F. Do not apply shotcrete to frosted surfaces. Maintain shotcrete at a minimum temperature of 40°F for three (3) calendar days after placement.

Apply shotcrete in layers. The properties of the applied shotcrete determine the proper thickness of each layer or lift.

The nozzleman should hold the nozzle three (3) to four (4) feet from the surface being covered in a position that ensures the shotcrete strikes at right angles to the surface being covered without excessive impact. The nozzleman shall maintain the water amount at a practicable minimum, so the mix properly adheres to the repair area. Water content should not become high enough to cause the mix to sag or fall from vertical or inclined surfaces, or to separate in horizontal layers.

Use shooting wires or guide strips that do not entrap rebound sand. Use guide wires to provide a positive means of checking the total thickness of the shotcrete applied. Remove the guide wires prior to the final finish coat.

To avoid leaving sand pockets in the shotcrete, blow or rake off sand that rebounds and does not fall clear of the work, or which collects in pockets in the work. Do not reuse rebound material in the work.

If a work stoppage longer than two (2) hours takes place on any shotcrete layer prior to the time it has been built up to required thickness, saturate the area with clean water and use a blowpipe as outlined previously, prior to continuing with the remaining shotcrete course. Do not apply shotcrete to a dry surface.

Finish all repaired areas, including chamfered edges, as close as practicable to their original dimensions and configuration, unless otherwise required to provide a minimum 2" of cover for reinforcing steel exposed during repair. If necessary to extend shotcrete repair material beyond the original member dimensions and geometry, coordinate with the Engineer to determine methods, geometry, and dimensions of the final finished surface to provide a minimum 2" of cover on reinforcing steel. Slightly build up and trim shotcrete to the final surface by cutting with the leading edge of a sharp trowel. Use a rubber float to correct any imperfections. Limit work on the finished surface to correcting imperfections caused by trowel cutting.

Immediately after bringing shotcrete surfaces to final thickness, thoroughly check for sags, bridging, and other deficiencies. Repair any imperfections at the direction of the Engineer.

Cure the completed shotcrete surface in accordance with Article 420-15(B) Water Method, of the *Standard Specifications* for seven (7) calendar days. If the water method is impracticable and if approved by the Engineer, a membrane curing compound may be used in accordance with Sub article 420-15(C) at double the manufacturer's recommended coverage rate.

MATERIAL TESTING & ACCEPTANCE

Each day shotcreting takes place, the nozzleman shall shoot one 18" x 18" x 3.5" test panel in the same position as the repair work that is being done to demonstrate the shotcrete is being applied properly. Store, handle and cure the test panel in the same manner as the repaired substructure and do not disturb for the first 24 hours after shotcreting.

Approximately 72 hours after completing the final shotcrete placement, thoroughly test the surface with a hammer. At this time, the repair area should have sufficient strength for all sound sections to ring sharply. Remove and replace any unsound portions prior to the final inspection of the work. No additional compensation will be provided for removal and replacement of unsound shotcrete.

In accordance with Sub article 1002-3(H) of the *Standard Specifications*, core three (3) 3" diameter samples from each test panel. Compressive strength values on test panels shall equal or exceed the required 28-day strength requirements. Should failures occur on the test panel cores, acceptance of the material will be determined by tests on cores from the installed work on the structure. A minimum of (3) three cores shall be taken from the area in question of the structure. The average compressive strength of the cores taken from the structure shall equal or exceed the specified

strength of the shotcrete applied, and no single core shall have strength less than 85% of the specified value. Any cores taken from the structure shall penetrate into the existing concrete at least two (2) inches. Cores shall also be inspected for delamination, sand pockets, segregation, and voids.

The adequacy of the bond between the existing concrete and the shotcrete shall be determined by direct tension bond testing, in accordance with ASTM C1583 or ASTM C882, as directed by the Engineer. A minimum bond strength of 250 psi will be accepted as satisfactory. Bond failure less than 250 psi attributable to the failure of existing concrete will not be cause for rejection. The cost of up to three passing direct tension bond tests shall be the responsibility of the Contractor; additional passing pull-off tests will be the responsibility of the Department.

Any repair work failing to meet the requirements of this provision will be rejected and the Contractor shall implement a remediation plan to correct the deficiency at no additional cost to the Department. No extra payment will be provided for drilling extra cores. Patch all core holes in the repaired structure to the satisfaction of the Engineer.

(C) MEASUREMENT AND PAYMENT

Shotcrete Repairs will be measured and paid for at the contract unit price bid per cubic foot and will be full compensation for removal, containment and disposal off-site of unsound concrete including the cost of materials, labor, tools, equipment and incidentals necessary to complete the

repair work. Depth will be measured from the original outside concrete face. If modifications to the dimensions and geometry are approved by the Engineer to achieve proper clearance over reinforcing steel, depth measurements will be made from the modified final outside face. The Contractor and Engineer will measure quantities after removal of unsound concrete and before application of repair material. Payment will also include the cost of sandblasting, surface cleaning and preparation, cleaning of reinforcing steel, placement of new steel, cost of temporary work platform, testing for soundness and bond strength, curing of shotcrete and taking core samples from the test panels and the structure.

Payment will be made under:

Pay Item	Pay Unit
Shotcrete Repairs	Cubic Feet

EPOXY RESIN INJECTION

GENERAL

For repairing cracks, an applicator certified by the manufacturer of epoxy injection system to be used is required to perform the epoxy resin injection. The Contractor shall submit documentation that indicates the firm, supervisor and the workmen have completed an instruction program in the methods of restoring concrete structures utilizing the epoxy injection process and have five (5) years of relative experience with a record of satisfactory performance on similar projects.

The Contractor furnishes all materials, tools, equipment, appliances, labor and supervision required when repairing cracks with the injection of an epoxy resin adhesive.

Scope of Work

Using Epoxy Resin Injection, repair cracks 25 mils (625 μm) wide or greater in the interior bent columns and caps, in the ends of the girders, in the cantilevered portion of the ends of the girders, and in the cantilevered portion of the superstructure deck.

Submittals

Prior to construction, the Contractor shall submit the following to the Engineer for review and approval:

- (E) Materials – Information detailing the materials and their properties, storage and handling requirements, and Material Safety Data Sheets. Material certifications and sampling shall be as required as per the NCDOT *Standard Specifications* Section 106.
- (F) Injection Procedures – Preparation and epoxy injection installation procedures, including written instructions from the manufacturer of the proportioning dispenser and the procedures recommended to monitor and assure its proportioning accuracy of the unit.
- (G) Contingencies – Proposed injection repair procedures in the event that during testing it is found that the injection installation procedure did not completely fill the cracks with epoxy.
- (H) Qualifications – The resumes of the Contractor's staff and/or the epoxy resin manufacturer's Technical Representative that will be on site performing the epoxy injection. The resumes shall detail the installer's applicable certifications and epoxy injection installation

experience.

- (I) References – The names and telephone numbers of contact persons for recent (< 2years?) epoxy injection projects.

Cooperation

Cooperate and coordinate with the Technical Representative of the epoxy resin manufacturer for satisfactory performance of the work.

Have the material manufacturer's Technical Representative present when the epoxy resin injection process begins and until the Engineer is assured that their service is no longer needed.

The expense of having this representative on the job is the Contractor's responsibility at no additional cost to the Department.

Material Properties

Provide a two-component structural epoxy adhesive for injection into cracks or other voids. Provide modified epoxy resin (Component "A") that conforms to the following requirements:

	Test Method	Specification Requirements
Viscosity @ 40 ± 3°F, cps	Brookfield RVT Spindle No. 4 @ 20 rpm	6,000 – 8,000
Viscosity @ 77 ± 3°F, cps	Brookfield RVT Spindle No. 2 @ 20 rpm	400 - 700
Epoxide Equivalent Weight	ASTM D1652	152 - 168
Ash Content, %	ASTM D482	1 max.

Provide the amine curing agent (Component "B") used with the epoxy resin that meets the following requirements:

	Test Method	Specification Requirements
Viscosity @ 40 ± 3°F, cps	Brookfield RVT Spindle No. 2 @ 20 rpm	700 - 1400
Viscosity @ 77 ± 3°F, cps	Brookfield RVT Spindle No. 2 @ 20 rpm	105 - 240
Amine Value, mg KOH/g	ASTM D664*	490 - 560
Ash Content, %	ASTM D482	1 max.
		* Method modified to use perchloric acid in acetic acid.

Certify that the Uncured Adhesive, when mixed in the mix ratio that the material supplier specifies, has the following properties:

Pot Life (60 gram mass)
 @ 77 ± 3°F - 15 minutes
 minimum @ 100 ± 3°F - 5
 minutes minimum

Certify that the Adhesive, when cured for seven (7) days at 77 ± 3°F unless otherwise specified, has the following properties:

	Test Method	Specification Requirements
Ultimate Tensile Strength	ASTM D638	7,000 psi (min.)
Tensile Elongation at Break	ASTM D638	4% max.
Flexural Strength	ASTM D790	10,000 psi (min.)
Flexural Modulus	ASTM D790	3.5 x 10 ⁵ psi
Compressive Yield Strength	ASTM D695	11,000 psi (min.)
Compressive Modulus	ASTM D695	2.0 - 3.5 x 10 ⁵ psi
Heat Deflection Temperature	ASTM D648*	125°F min.
Cured 28 days @ 77 ± 3°F		135°F min.
Slant Shear Strength, 5,000 psi (34.5 MPa) compressive strength concrete Cured 3 days @ 40°F wet concrete Cured 7 days @ 40°F wet concrete Cured 1 day @ 77°F dry concrete	AASHTO T237	3,500 psi (min.) 4,000 psi (min.) 5,000 psi (min.)
* Cure test specimens so the peak exothermic temperature does not exceed 77°F.		

Use an epoxy bonding agent, as specified for epoxy mortar, as the surface seal (used to confine the epoxy resin during injection).

EQUIPMENT FOR INJECTION

Use portable positive displacement type pumps with interlock to provide positive ratio control of exact proportions of the two (2) components at the nozzle to meter and mix the two (2) injection adhesive components and inject the mixed adhesive into the crack. Use electric or air powered pumps that provide in-line metering and mixing.

Use injection equipment with automatic pressure control capable of discharging the mixed adhesive at any pre-set pressure up to 200 ± 5 psi and equipped with a manual pressure control override.

Use equipment capable of maintaining the volume ratio for the injection adhesive as prescribed by the manufacturer. A tolerance of $\pm 5\%$ by volume at any discharge pressure up to 200 psi is permitted.

Provide injection equipment with sensors on both the Component A and B reservoirs that automatically stop the machine when only one component is being pumped to the mixing head.

PREPARATION

Follow these steps prior to injecting the epoxy resin:

- (A) Remove all dirt, dust, grease, oil, efflorescence and other foreign matter detrimental to the bond of the epoxy injection surface seal system from the surfaces adjacent to the cracks or other areas of application. Acids and corrosives are not permitted.
- (B) Provide entry ports along the crack at intervals determined by the Contractor to ensure full penetration of the crack.
- (C) Apply surface seal material to the face of the crack between the entry ports. For through cracks, apply surface seal to both faces.
- (D) Allow enough time for the surface seal material to gain adequate strength before proceeding with the injection.
- (E) Perform an air pressure check of the surface seal to ensure the system is airtight prior to proceeding with the injection.

EPOXY INJECTION

Before epoxy adhesive injection occurs, the Contractor shall test discharge one pint of epoxy to calibrate the equipment and to demonstrate that the workmen and equipment are working properly.

Follow approved preparation and installation procedures submitted by the Contractor. It is the Contractor's responsibility to achieve full penetration of cracks being injected.

Perform epoxy adhesive injection continuously until cracks are completely filled. Pressure shall be maintained until complete refusal of material is achieved. Any stoppage of injection for more than 15 minutes shall result in the injection equipment being cleaned, at no additional cost to the Department, before resuming injection.

If port to port travel of epoxy adhesive is not indicated, or the surface seal and/or ports become dislodged, immediately stop the work and notify the Engineer.

TESTING

The Contractor shall core 3" diameter by 6" deep samples of the cured epoxy to verify the cracks have been completely filled with epoxy. When coring, care shall be taken to avoid existing steel reinforcement, where possible. Injection will not proceed beyond the initial 50 feet until three (3) cores have been submitted to, and approved by, the Engineer. If the epoxy does not penetrate a minimum of 6" or the full depth of the crack, whichever is less, the repair will be rejected, and the contractor shall follow their proposed repair procedure that has been approved by the Engineer. The presence of the technical representative will be required when repairs begin.

The Engineer will take possession of the cores from the repaired concrete for compressive strength testing. If the failure plane is located at the repaired crack, a minimum compressive strength of 3,000 psi is required of these cores. The cost of coring is incidental to the pay item for epoxy injection. If the core fails, the contractor will be required to take corrective action before proceeding and another 50' test section will be required.

After the contractor demonstrates acceptable repairs, cores will be taken at a rate of one per 100 linear feet of repair until completion of the work or unacceptable cores are encountered.

FINISHING

When cracks are completely filled, allow the epoxy adhesive to cure for sufficient time to allow the removal of the surface seal without any draining or runback of epoxy material from the cracks.

Fill all cored holes with Type 3 grout in accordance with Section 1003 of the *Standard Specifications*.

Remove the surface seal material and injection adhesive runs or spills from concrete surfaces.

Finish the face of the crack and all core holes flush to the adjacent concrete, removing any indentations or protrusions caused by the placement of entry ports or grout placement.

BASIS OF PAYMENT

Epoxy Resin Injection will be paid at the contract unit price per linear foot. For full depth cracks, payment will be made for one side only. Such payment will be full compensation for all materials, tools, equipment, labor, coring and for all incidentals necessary to complete the work.

Pay Item

Pay Unit

Epoxy Resin Injection

Linear Foot

STANDARD SPECIAL PROVISION
AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS

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

Z-2

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

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

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

STANDARD SPECIAL PROVISION

ERRATA

(1-16-24)

Z-4

Revise the *2024 Standard Specifications* as follows:

Division 3

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

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

Division 9

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

Division 10

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

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

Division 11

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

Division 15

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

Division 16

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

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

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

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

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

Z-04a

Within Quarantined Area

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

Originating in a Quarantined County

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

Contact

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

Regulated Articles Include

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

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

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

Z-6

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

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

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

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

(a) Compliance with Regulations

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

(b) Nondiscrimination

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

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

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

(d) Information and Reports

The contractor shall provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FHWA to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor shall so certify to the Recipient or the FHWA, as appropriate, and shall set forth what efforts it has made to obtain the information.

(e) Sanctions for Noncompliance:

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

- (i) Withholding payments to the contractor under the contract until the contractor complies; and/or

(ii) Cancelling, terminating, or suspending a contract, in whole or in part.

(f) Incorporation of Provisions

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

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

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

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

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

“The North Carolina Department of Transportation, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award. In accordance with other related nondiscrimination authorities, bidders and contractors will also not be discriminated against on the grounds of sex, age, disability, low-income level, creed/religion, or limited English proficiency in consideration for an award.”

4. Physically incorporate the FHWA-1273, in its entirety, into all subcontracts and subsequent lower tier subcontracts on Federal-aid highway construction contracts only.
5. Provide language assistance services (i.e., written translation and oral interpretation), free of charge, to LEP employees and applicants. Contact NCDOT OCR for further assistance, if needed.

6. For assistance with these Title VI requirements, contact the NCDOT Title VI Nondiscrimination Program at 1-800-522-0453.
- (b) Subrecipients (e.g. cities, counties, LGAs, planning organizations) may be required to prepare and submit a Title VI Plan to NCDOT, including Title VI Assurances and/or agreements. Subrecipients must also ensure compliance by their contractors and subrecipients with Title VI. (23 CFR 200.9(b)(7))
- (c) If reviewed or investigated by NCDOT, the contractor or subrecipient agrees to take affirmative action to correct any deficiencies found within a reasonable time period, not to exceed 90 calendar days, unless additional time is granted by NCDOT. (23 CFR 200.9(b)(15))
- (d) The Contractor is responsible for notifying subcontractors of NCDOT's External Discrimination Complaints Process.

1. Applicability

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

2. Eligibility

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

3. Time Limits and Filing Options

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

- (i) The date of the alleged act of discrimination; or
- (ii) The date when the person(s) became aware of the alleged discrimination; or
- (iii) Where there has been a continuing course of conduct, the date on which that conduct was discontinued or the latest instance of the conduct.

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

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

4. Format for Complaints

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

5. Discrimination Complaint Form

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

6. Complaint Basis

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

TABLE 103-1 COMPLAINT BASIS			
Protected Categories	Definition	Examples	Applicable Nondiscrimination Authorities
Race and Ethnicity	An individual belonging to one of the accepted racial groups; or the perception, based usually on physical characteristics that a person is a member of a racial group	Black/African American, Hispanic/Latino, Asian, American Indian/Alaska Native, Native Hawaiian/Pacific Islander, White	Title VI of the Civil Rights Act of 1964; 49 CFR Part 21; 23 CFR 200; 49 U.S.C. 5332(b); 49 U.S.C. 47123. <i>(Executive Order 13166)</i>
Color	Color of skin, including shade of skin within a racial group	Black, White, brown, yellow, etc.	
National Origin <i>(Limited English Proficiency)</i>	Place of birth. Citizenship is not a factor. <i>(Discrimination based on language or a person’s accent is also covered)</i>	Mexican, Cuban, Japanese, Vietnamese, Chinese	
Sex	Gender. The sex of an individual. <i>Note: Sex under this program does not include sexual orientation.</i>	Women and Men	1973 Federal-Aid Highway Act; 49 U.S.C. 5332(b); 49 U.S.C. 47123.
Age	Persons of any age	21-year-old person	Age Discrimination Act of 1975 49 U.S.C. 5332(b); 49 U.S.C. 47123.
Disability	Physical or mental impairment, permanent or temporary, or perceived.	Blind, alcoholic, para-amputee, epileptic, diabetic, arthritic	Section 504 of the Rehabilitation Act of 1973; Americans with Disabilities Act of 1990
Religion (in the context of employment) <i>(Religion/ Creed in all aspects of any aviation or transit-related construction)</i>	An individual belonging to a religious group; or the perception, based on distinguishable characteristics that a person is a member of a religious group. In practice, actions taken as a result of the moral and ethical beliefs as to what is right and wrong, which are sincerely held with the strength of traditional religious views. <i>Note: Does not have to be associated with a recognized religious group or church; if an individual sincerely holds to the belief, it is a protected religious practice.</i>	Muslim, Christian, Sikh, Hindu, etc.	Title VII of the Civil Rights Act of 1964; 23 CFR 230; FHWA-1273 Required Contract Provisions. <i>(49 U.S.C. 5332(b); 49 U.S.C. 47123)</i>

(3) Pertinent Nondiscrimination Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest agrees to comply with the following non-discrimination statutes and authorities, including, but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.

- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability) and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- (g) The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- (h) Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- (i) The Federal Aviation Administration's Nondiscrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- (j) Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- (k) Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- (l) Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).
- (m) Title VII of the Civil Rights Act of 1964 (42 U.S.C. § 2000e et seq., Pub. L. 88-352), (prohibits employment discrimination on the basis of race, color, religion, sex, or national origin).

(4) Additional Title VI Assurances

***The following Title VI Assurances (Appendices B, C and D) shall apply, as applicable*

(a) Clauses for Deeds Transferring United States Property (1050.2A, Appendix B)

The following clauses will be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of Assurance 4.

NOW, THEREFORE, the U.S. Department of Transportation as authorized by law and upon the condition that the North Carolina Department of Transportation (NCDOT) will accept title to the lands and maintain the project constructed thereon in accordance with the North Carolina General Assembly, the Regulations for the Administration of the Federal-Aid Highway Program, and the policies and procedures prescribed by the Federal Highway Administration of the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. § 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the NCDOT all the right, title and interest of the U.S. Department of Transportation in and to said lands described in Exhibit A attached hereto and made a part hereof.

(HABENDUM CLAUSE)

TO HAVE AND TO HOLD said lands and interests therein unto the North Carolina Department of Transportation (NCDOT) and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the NCDOT, its successors and assigns.

The NCDOT, in consideration of the conveyance of said lands and interests in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (1) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [,] [and]* (2) that the NCDOT will use the lands and interests in lands and interests in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended [,] and (3) that in the event of breach of any of the above-mentioned nondiscrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said land, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the U.S. Department of Transportation and its assigns as such interest existed prior to this instruction].*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.)

(b) Clauses for Transfer of Real Property Acquired or Improved Under the Activity, Facility, or Program (1050.2A, Appendix C)

The following clauses will be included in deeds, licenses, leases, permits, or similar instruments entered into by the North Carolina Department of Transportation (NCDOT) pursuant to the provisions of Assurance 7(a):

1. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add "as a covenant running with the land"] that:
 - (i.) In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.

2. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued. *
3. With respect to a deed, in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the NCDOT and its assigns. *

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

(c) Clauses for Construction/Use/Access to Real Property Acquired Under the Activity, Facility or Program (1050.2A, Appendix D)

The following clauses will be included in deeds, licenses, permits, or similar instruments/ agreements entered into by the North Carolina Department of Transportation (NCDOT) pursuant to the provisions of Assurance 7(b):

1. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended, set forth in this Assurance.
2. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above Non-discrimination covenants, the NCDOT will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued. *
3. With respect to deeds, in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will there upon revert to and vest in and become the absolute property of the NCDOT and its assigns. *

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

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

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

Z-10

Description

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

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

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

Minorities and Women

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

Assigning Training Goals

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

Training Classifications

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

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

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

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

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

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

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

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

Records and Reports

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

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

Trainee Interviews

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

Trainee Wages

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

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

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

Achieving or Failing to Meet Training Goals

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

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

Measurement and Payment

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

LISTING OF MBE & WBE SUBCONTRACTORS					Sheet
					of
Firm Name and Address	MBE or WBE	Item No.	Item Description	* Agreed upon Unit Price	** Dollar Volume of Item
Name Address					
Name Address					
Name Address					
Name Address					
Name Address					
Name Address					

\$ _____

_____ %
 ** Dollar Volume of MBE Subcontractor
 MBE Percentage of Total Contract Bid Price \$ _____
 ** Dollar Volume of WBE Subcontractor _____
 WBE Percentage of Total Contract Bid Price _____ %

* The Dollar Volume shown in this column shall be the Actual Price Agreed Upon by the Prime Contractor and the DBE subcontractor, and these prices will be used to determine the percentage of the DBE participation in the contract.

** - Must have entry even if figure to be entered is zero.

**This form must be completed in order for the Bid to be considered responsive and be publicly read.
 Bidders with no MBE and/or WBE participation must so indicate this on the form by entering the word or number *zero*.**

ADDENDUM(S)

ADDENDUM #1

I, _____ representing _____
(SIGNATURE)

Acknowledge receipt of Addendum #1.

ADDENDUM #2

I, _____ representing _____
(SIGNATURE)

Acknowledge receipt of Addendum #2.

ADDENDUM #3

I, _____ representing _____
(SIGNATURE)

Acknowledge receipt of Addendum #3.

North Carolina Department of Transportation BID FORM

Work Order Number: To Be Determined

Repair Bridge Joints, Concrete/Asphalt Deck Repairs and Foam Injections

Chatham, Hoke, Lee, Montgomery, Moore, Randolph, Richmond, and Scotland Counties

ITEM	SECT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT BID
1	SP	Response for Bridge Repairs	10	EA		
2	SP	Silicon Joint Replacement (Less than 1" wide)	500	LF		
3	SP	Silicon Joint Replacement (1" to 2" wide)	500	LF		
4	SP	Silicon Joint Replacement (Greater than 2" wide)	500	LF		
5	SP	Evazote Joint Replacement	1,500	LF		
6	SP	Synthetic Rubber Expansion Joint Replacement (1" to 2" wide)	200	LF		
7	SP	Synthetic Rubber Expansion Joint Replacement (2" to 3.5" wide)	200	LF		
8	SP	Joint Repair Using Elastomeric Concrete	500	CF		
9	SP	Asphalt Joint Repair/Replacement (18" – 24" wide, w/ plate)	500	CF		
10	SP	Concrete/Asphalt Deck Repair (Hot Applied Mastic Asphalt Binder)	15,000	LB		
11	SP	Concrete/Asphalt Deck Repair (Hot Applied Synthetic Polymer Modified Resin)	15,000	LB		
12	SP	Slab Leveling, Undersealing, and Voidfilling	1,000	LB		
13	SP	Soil Stabilization	400	GAL		
14	SP	Structural Foam Void Fill/Stabilization	50	GAL		

ITEM	SECT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT BID
15	SP	Full Depth Sawing of Concrete Deck	100	LF		
16	SP	Full Depth Sawing of Concrete Rail	50	LF		
17	SP	Shotblasting Bridge Deck	1,000	SY		
18	SP	Silane Deck Treatment	1,000	SY		
19	SP	Shotcrete Repairs	200	CF		
20	SP	Epoxy Resin Injection	200	LF		
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)	40	EA		
24	SP	Track Saw Cutting for Joint Seal	100	LF		

TOTAL BID FOR PROJECT: _____

CONTRACTOR _____

ADDRESS _____

Federal Identification Number _____ Contractors License Number _____

Authorized Agent _____ Title _____

Signature _____ Date _____

Witness _____ Title _____

Signature _____ 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

**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

_____	By	_____
Signature of Witness		Signature of Partner
_____		_____
Print or type Signer's name		Print or type Signer's name

**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 Witness

Signature of Member/Manager/Authorized Agent
Select appropriate title

Print or type Signer's name

Print or type Signer's Name

**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

Signature of Witness

Signature of Contractor, Individually

Print or type Signer's name

Print or type Signer's name

**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

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.

Execution of Contract

Contract No: 12116381

County: DIVISIONWIDE

ACCEPTED BY THE DEPARTMENT

Division Proposal Engineer

Date