

STATE OF NORTH CAROLINA  
**DEPARTMENT OF TRANSPORTATION**



STATE BRIDGE MANAGEMENT UNIT

**CONTRACT PROPOSAL**

CONTRACT/WBS NUMBER: DO00142/17BP.13.P.3

ROUTE: NC 181, SR 2169, SR 1901 & SR 1920 COUNTY: Burke & Rutherford

DESCRIPTION: Bridge No. 30 in Burke County and Bridge Nos. 81 and 119 in Rutherford County – Deck Overlay with Latex Modified Concrete. Bridge No. 14 in Rutherford County – Deck Overlay with Epoxy.

BID OPENING: 2:00 PM, November 30, 2011

**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.

\_\_\_\_\_  
NAME OF BIDDER

\_\_\_\_\_  
ADDRESS OF BIDDER

RETURN BIDS TO: **Mr. Rick Nelson, PE**  
**Asst. State Bridge Management Engineer**  
**1000 Birch Ridge Road**  
**Raleigh, NC 27610**

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### APPENDIX

EXECUTION OF CONTRACT  
FORM W-9

## **PRE-QUALIFYING TO BID**

In order to qualify to bid on this contract, all prospective Bidders shall be pre-qualified with the Department of Transportation prior to submitting a bid. Contractors who are not pre-qualified may obtain information and forms for pre-qualifying from:

Contractual Services Unit  
State Contractual Services Engineer  
Neal Galehouse, PE  
Tel: (919) 733-7174  
Fax: (919) 715-7378

All required pre-qualification statements and documents shall be filed with the State Contractual Services Engineer at least two weeks prior to the date of opening bids.

## **PUBLIC ADVERTISEMENT**

There will NOT be a Pre-Bid Conference for this project. Advertisement for this project is posted on our web site with the plans and proposal at: <http://www.ncdot.gov/business/letting/bridge/default.html>.

In order for Prospective Bidders to bid on these projects, the Prospective Bidders are required to send an email to Rick Nelson at: [enelson@ncdot.gov](mailto:enelson@ncdot.gov) requesting hard copies of the sealed plans and proposals. Once the Prospective Bidders have requested the sealed hard copies of the plans and proposals, the Prospective Bidders will then be put on the Bid List. **Hard copies of the plans and proposals must be requested by November 17, 2011 for the Prospective Bidders to be eligible to bid on these projects.** Only Prospective Bidders, who are bidding as Prime Contractors, should submit e-mail requests for hard copies of the plans and proposals. Sub-Contractors and suppliers may download unsealed plans and proposals from the website.

There will be no cost for these plans and proposal.

A list of plan holders will be posted on the website.

## **AVAILABILITY OF FUNDS - TERMINATION OF CONTRACTS**

Payments made on this contract are subject to availability of funds as allocated by the General Assembly. If the General Assembly fails to allocate adequate funds, the Department reserves the right to terminate this contract.

In the event of termination, the Contractor shall be given a written notice of termination at least 60 days before completion of schedule 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.

## **PREPARATION AND SUBMISSION OF BIDS**

All bids shall be prepared and submitted in accordance with the following listed requirements.

1. The proposal form furnished by the Department shall be used and shall not be taken apart or altered.
2. All entries including signatures shall be written in ink.
3. The amount bid shall be written in figures in the proper place in the proposal form.
2. 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.
3. The bid shall be properly executed. In order to constitute proper execution, the bid shall show the Contractor's name, address, and License Number and shall be signed by an authorized representative. Bids submitted by corporations shall bear the seal of the corporation.
4. The bid shall not contain any unauthorized additions, deletions, or conditional bids.
7. 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.
8. The bid shall be accompanied by a bid bond on the form furnished by the Department or by a bid deposit. The bid bond shall be completely and properly executed in accordance with the requirements of "Bid Bond or Bid Deposit". The bid deposit shall be a certified check or cashiers check in accordance with "Bid Bond or Bid Deposit".
9. The bid shall be placed in a sealed envelope (complete proposal) and shall have been delivered to and received by the Department prior to the time specified in the invitation to bid.

### **REJECTION OF BIDS**

Any bid submitted which fails to comply with any of the requirements contained herein shall be considered irregular and may be rejected.

### **AWARD OF CONTRACT**

The award of the contract, if it be awarded, will be made to the lowest responsible Bidder. The lowest responsible Bidder will be notified that his bid has been accepted and that he has been awarded the contract.

### **BID BOND OR BID DEPOSIT**

Each bid shall be accompanied by a corporate bid bond or a bid deposit of a certified or cashiers check in the amount of at least 5% of the total amount bid for contract. No bid will be considered or accepted unless accompanied by one of the foregoing securities. The bid bond shall be executed by a Corporate Surety licensed to do business in North Carolina and the certified check or cashiers check shall be drawn on a bank or trust company insured by the Federal Deposit Insurance Corporation and made payable to the Department of Transportation in an amount of at least 5% of the total amount bid for the contract. The condition of the bid bond or bid deposit is: the Principal shall not withdraw its bid within 60 days after the opening of the same, and if the contract is awarded to the Principal, the Principal shall within 15 days after the prescribed contract documents are mailed to him for signature, execute such contractual documents as may be required by the terms of the bid and give payment and performance bonds with good and sufficient surety as required for the faithful performance of the contract and for the protection of all persons supplying labor and materials in the prosecution of the work; in the event of the failure of the Principal to enter into such contract and execute such documents as may be required, then the amount of the bid bond shall be immediately paid to the Department as

liquidated damages or, in the case of a bid deposit, the deposit shall be forfeited to the Department.

When a bid is secured by a bid bond, the bid bond shall be on the form furnished by the Department. The bid bond shall be executed by both the Bidder and a Corporate Surety licensed under the laws of North Carolina to write such bonds.

The execution by the Bidder shall be in the same manner as required under "Preparation and Submission of Bids" for the proper execution of the bid. The execution by the Corporate Surety shall be the same as is provided for under "Preparation and Submission of Bids" for the execution of the bid by a corporation. The seal of the Corporate Surety shall be affixed to the bid bond. The bid bond form furnished is for execution of the Corporate Surety by a General Agent or Attorney in Fact. A certified copy of the Power of Attorney shall be attached if the bid bond is executed by a General Agent or Attorney in Fact. The Power of Attorney shall contain a certification that the Power of Attorney is still in full effect as of the date of the execution of the bid bond by the General Agent or Attorney in Fact. If the bid bond is executed by the Corporate Surety by the President, Vice President, or Assistant Vice President, and attested to by the Secretary or Assistant Secretary, then the bid bond form furnished shall be modified for such execution, instead of execution by the Attorney in Fact or the General Agent.

When a bid is secured by a bid deposit (certified check or cashiers check), the execution of a bid bond will not be required.

All bid bonds will be retained by the Department until the contract is executed by the successful Bidder, after which all such bid bonds will be returned to the Bidder or the Surety.

### **PERFORMANCE BOND AND PAYMENT BOND REQUIREMENTS**

Bonds will not be required by the Department if the awarded amount of the contract is less than Three Hundred Thousand Dollars (\$300,000.), otherwise, the following shall apply:

- (A) The successful Bidder, at the time of the execution of the contract, shall provide a contract performance bond in the amount of one hundred percent (100%) of the contract amount, conditioned upon the faithful performance of the contract in accordance with the plans, specifications and conditions of the contract. Such bond shall be solely for the protection of the contracting body which awarded the contract.
- (B) The successful Bidder, at the time of the execution of the contract, shall provide a contract payment bond in the amount of one hundred percent (100%) of the contract amount, conditioned upon the prompt payment for all labor or materials for which a contractor or sub-contractor is liable. The payment bond shall be solely for the protection of the persons furnishing materials or performing labor for which a contractor or subcontractor is liable.

The performance bond and the payment bond shall be executed by one or more surety companies legally authorized to do business in the State of North Carolina and become effective upon the awarding of the construction contract.

Before an award is made, the apparent low bidder will be notified in writing to submit to the Purchasing Section, a performance bond and payment bond, each in the amount of 100% of the contract.

**DELIVERY OF BIDS**

All bids (complete proposal) shall be placed in a sealed envelope having the name and address of the Bidder, and the Statement on the outside of the envelope:

“Bid for State Highway Project No. 17BP.13.P.3”

If delivered by mail, the sealed envelope shall be placed in another sealed envelope and the outer envelope addressed to:

N. C. DEPARTMENT OF TRANSPORTATION  
STRUCTURES MANAGEMENT UNIT  
1000 BIRCH RIDGE ROAD  
RALEIGH, NC 27610

ATTENTION: Mr. Rick Nelson

The outer envelope shall also bear the statement:

“BID FOR STATE HIGHWAY PROJECT NO. 17BP.13.P.3”

If delivered in person, the sealed envelope shall be delivered to the office of North Carolina Department of Transportation, Structures Management Unit, 1000 Birch Ridge Road, Raleigh, NC 27610. All bids shall be delivered prior to the time specified in the invitation to bid. Bids received after 2:00 PM, November 30, 2011, will not be accepted.

## GENERAL PROJECT SPECIAL PROVISIONS

### SCOPE OF WORK

This work shall consist of furnishing all labor, equipment, and materials to overlay the existing bridge decks with either latex modified concrete or an epoxy overlay as shown on the plans. Work includes: removing deteriorated concrete using hydro-demolition methods and overlaying with latex modified concrete on three bridges, placing an epoxy overlay on one bridge, disposal of waste material, installing evazote joint seals, grooving bridge deck, performing shotcrete repairs of concrete spalls to substructures and to the underside of bridge decking, pavement markings, seeding and mulching all grassed areas disturbed; and all incidental items necessary to complete the project as specified and shown on the plans.

The contractor shall be responsible for fulfilling all requirements of the NCDOT Standard Specifications for Roads and Structures dated July 2006, except as otherwise specified herein.

### CONTRACT TIME AND LIQUIDATED DAMAGES (no permits):

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

SP1 G05B

The date of availability for this contract is the date the Contractor begins work but not before **April 15, 2012** or later than **July 1, 2012**.

The completion date for this contract is the date that is **One Hundred twenty (120)** consecutive calendar days after and including the date of availability.

Except where otherwise provided by the contract, observation periods required by the contract will not be a part of the work to be completed by the completion date and/or intermediate contract times stated in the contract. The acceptable completion of the observation periods that extend beyond the final completion date shall be a part of the work covered by the performance and payment bonds.

The liquidated damages for this contract are **Five Hundred Dollars (\$500.00)** per calendar day. At the preconstruction conference the Contractor shall declare his expected date for beginning work. Should the Contractor desire to revise this date after the preconstruction conference, he shall notify the Engineer in writing at least thirty (30) days prior to the revised date.

### INTERMEDIATE CONTRACT TIME No. 1 AND LIQUIDATED DAMAGES

The Contractor shall complete the required work of installing, maintaining, and removing the traffic control devices for lane closures and restoring traffic to the existing traffic pattern. Except when road closures are specified in the traffic control plan, do not close or narrow travel lanes as follows:

#### NC 181

6:00 AM to 7:00 PM Monday thru Friday

#### SR 2169 And SR 1901

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

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

## **HOLIDAY AND HOLIDAY WEEKEND LANE CLOSURE RESTRICTIONS:**

1. For **unexpected occurrence** that creates unusually high traffic volumes, as directed by the Engineer.
2. For **New Year's Day**, between the hours of 6:00 am December 31st to 7:00 pm January 2nd. If New Year's Day is on Friday, Saturday, Sunday or Monday, then until 7:00 pm the following Tuesday.
3. For **Easter**, between the hours of 6:00 am Thursday and 7:00 pm Monday.
4. For **Memorial Day**, between the hours of 6:00 am Friday and 7:00 pm Tuesday.
5. For **Independence Day**, between the hours of 6:00 am the day before Independence Day and 7:00 pm the day after Independence Day.

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

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

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

The time of availability for this intermediate contract time shall be the time the Contractor begins to install all traffic control devices for daytime and nighttime lane closures according to the time restrictions listed above.

The completion time for this intermediate contract time shall be the time the Contractor is required to complete the removal of traffic control devices required for daytime and nighttime lane closures according to the time restrictions stated above and restore traffic to the existing pattern.

The liquidated damages are One Hundred Twenty Five Dollars (\$125.00) per 15 minute period.

## **CONSTRUCTION METHODS**

The contractor shall perform all construction activities in accordance with the applicable requirements of the NCDOT Standard Specifications for Roads and Structures dated July 2006, except as otherwise specified herein.

## **SITE INVESTIGATION AND REPRESENTATION**

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

### **CONTROL OF EROSION, SILT AND POLLUTION**

Control of erosion, siltation, and pollution shall meet the requirements of Section 107-13 of the Standard Specifications for Roads and Structures dated July 2006.

The Contractor may, at his option, submit an alternate plan and sequence by submitting 3 copies of the proposed alternate to the Engineer for approval. Approval must be obtained before construction is started on the alternate plan.

In the event an erosion and sedimentation control plan is not followed or properly maintained, all other work shall be suspended until corrections are made.

### **MATERIALS AND TESTING**

The Engineer reserves the right to perform all sampling and testing in accordance with Section 106 of the Standard Specifications and the Department's "Material and Tests Manual". All material must be approved by the Engineer prior to being used.

### **TRAFFIC CONTROL**

The Contractor shall provide all traffic control for this project in accordance with the plans and proposal and as directed by the Engineer.

### **INDEMNIFICATION**

The Contractor shall indemnify, defend and save harmless, the State, the Department, and all of its officers, agents and employees from all damages, suits, actions or claims brought of any injuries or damages sustained by any person or property on account of the Contractor's operations in connection with the contract. It is specifically understood and agreed that this indemnification agreement does not cover or indemnify the Department for its own negligence,

breach of contract, equipment failure, or other circumstance of operation beyond the control of the Contractor. The Contractor shall be responsible for and indemnify and save the Department harmless for any and all damages to its property caused by the negligence of the Contractor, its employees or agents in carrying out this contract.

### **COMPENSATION**

The Department agrees to pay the Contractor the total project bid cost including any bid item overruns, minus any liquidated damages, when he has satisfactorily completed the scheduled work described herein.

## **ADDITIONAL COMPENSATION and/or EXTENSION OF COMPLETION DATE**

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

## **BASIS OF PAYMENT**

Monthly partial payments will be made in accordance with Section 109-4 of the NCDOT Standard Specifications dated July 2006.

## **WORK PROCEDURES AND ASSIGNMENTS**

### **Engineer**

The Engineer for this project shall be the State Bridge Management Engineer, thru the issuing of the purchase order. Thereafter the Engineer shall be the Division 13 Engineer, Division of Highways, North Carolina Department of Transportation, acting directly or through his duly authorized representatives.

### **Authority of the Engineer**

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.

### **Contractor Supervision**

The Contractor shall have a responsible Supervisor for the purpose of supervising, scheduling and coordinating this contract with the Engineer.

### **Availability**

Provisions shall be made so that a Supervisor can be contacted at any time during the length of the contract.

## **COMPETITIVE PROPOSALS**

Pursuant to the provisions of G.S. 143-54 under penalty of perjury, the signer of this proposal certifies this proposal has not been arrived at collusively nor otherwise in violation of Federal or North Carolina Anti-Trust Laws. All proposals must be signed by the owner or an officer of the firm.

## **ACCEPTANCE AND REJECTION**

The right is reserved by the Contracting Agency to accept or reject all proposals or to waive any informality in the proposals.

**GIFTS FROM VENDORS AND CONTRACTORS:**

(12-15-09)

SP1 G152

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

- (1) have a contract with a governmental agency; or
- (2) have performed under such a contract within the past year; or
- (3) anticipate bidding on such a contract in the future.

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

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

**SEEDING AND MULCHING:**

(8-19-08)

**(West Ed Crimp)**

S-2

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

**Shoulder and Median Areas**

**August 1 - June 1**

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

**May 1 - September 1**

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

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

**August 1 - June 1**

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

**May 1 - September 1**

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

### Approved Tall Fescue Cultivars

2 <sup>nd</sup> Millennium	Duster	Magellan	Rendition
Avenger	Endeavor	Masterpiece	Scorpion
Barlexas	Escalade	Matador	Shelby
Barlexas II	Falcon II, III, IV & V	Matador GT	Signia
Barrera	Fidelity	Millennium	Silverstar
Barrington	Finesse II	Montauk	Southern Choice II
Biltmore	Firebird	Mustang 3	Stetson
Bingo	Focus	Olympic Gold	Tarheel
Bravo	Grande II	Padre	Titan Ltd
Cayenne	Greenkeeper	Paraiso	Titanium
Chapel Hill	Greystone	Picasso	Tomahawk
Chesapeake	Inferno	Piedmont	Tacer
Constitution	Justice	Pure Gold	Trooper
Chipper	Jaguar 3	Prospect	Turbo
Coronado	Kalahari	Quest	Ultimate
Coyote	Kentucky 31	Rebel Exeda	Watchdog
Davinci	Kitty Hawk	Rebel Sentry	Wolfpack
Dynasty	Kitty Hawk 2000	Regiment II	
Dominion	Lexington	Rembrandt	

### Approved Kentucky Bluegrass Cultivars:

Alpine	Bariris	Envicta	Rugby
Apollo	Bedazzled	Impact	Rugby II
Arcadia	Bordeaux	Kenblue	Showcase
Arrow	Champagne	Midnight	Sonoma
Award	Chicago II	Midnight II	

### Approved Hard Fescue Cultivars:

Chariot	Nordic	Rhino	Warwick
Firefly	Oxford	Scaldis II	
Heron	Reliant II	Spartan II	
Minotaur	Reliant IV	Stonehenge	

On cut and fill slopes 2:1 or steeper add 20# Sericea Lespedeza and 15# Crown Vetch January 1 - December 31.

The Crown Vetch Seed should be double inoculated if applied with a hand seeder. Four times the normal rate of inoculant should be used if applied with a hydroseeder. If a fertilizer-seed slurry is used, the required limestone should also be included to prevent fertilizer acidity from killing the inoculant bacteria. Caution should be used to keep the inoculant below 80° F to prevent harm to the bacteria. The rates and grades of fertilizer and limestone shall be the same as specified for *Seeding and Mulching*.

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

**TEMPORARY SEEDING:**

Fertilizer shall be the same analysis as specified for *Seeding and Mulching* and applied at the rate of 400 pounds and seeded at the rate of 50 pounds per acre. German Millet, or Browntop Millet shall be used in summer months and rye grain during the remainder of the year. The Engineer will determine the exact dates for using each kind of seed.

**FERTILIZER TOPDRESSING:**

Fertilizer used for topdressing shall be 16-8-8 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 2-1-1 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 16-8-8 analysis and as directed.

**SUPPLEMENTAL SEEDING:**

The kinds of seed and proportions shall be the same as specified for *Seeding and Mulching*, and the rate of application may vary from 25# to 75# per acre. The actual rate per acre will be determined prior to the time of topdressing and the Contractor will be notified in writing of the rate per acre, total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for incorporating seed into the soil as to prevent disturbance of existing vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

**BASIS OF PAYMENT:**

Payment for “Seeding and Mulching” will be included in the lump sum bid price for “Excavation and Embankment”. This price shall be full compensation for all materials, tools, equipment, labor, and for all incidentals necessary to complete the work.

**TWELVE MONTH GUARANTEE:**

(7-15-03)

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.

**LAW ENFORCEMENT**

**SPECIAL**

**Description**

Furnish law enforcement officers and marked law enforcement vehicles to direct traffic in accordance with the contract.

**Construction Methods**

Use uniformed law enforcement officers and marked law enforcement vehicles equipped with lights mounted on top of the vehicle and law enforcement vehicle emblems to direct or control traffic as required by the plans or by the Engineer.

**Measurement and Payment**

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

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Law Enforcement	Hour

**LONGITUDINAL CHANNELIZING DEVICES (PLASTIC BARRIER)**

**DESCRIPTION**

Furnish, install, relocate, maintain, and remove longitudinal channelizing devices.

**MATERIALS**

Refer to Division 10 of the 2012 North Carolina Department of Transportation Standard Specifications for Roads and Structures.

**Item**

Guardrail and Barrier Delineators                      1088-2

All devices must be on the NCDOT approved products list.

Provide longitudinal channelizing devices (plastic barrier) that act as their own free standing non-redirective end treatment.

If the longitudinal channelizing device is filled with water, and there is a chance of freezing temperatures while it is being used, use an environmentally safe anti-freezing agent in the water per manufacturer specifications and recover agent when the barrier is drained. Dispose of water and agent properly. Do not drain water into or across a traffic lane. Provide plastic barrier units that are capable of being lifted and moved when filled, if draining is not possible.

## **CONSTRUCTION METHODS**

### **(A) General**

Plastic Barrier is specified as a longitudinal channelizing device on this project optional to the use of drums.

The Engineer will make the final decision as to whether drums or plastic barrier is used.

Place all longitudinal channelizing devices as shown in the plans or as directed by the Engineer and according to the manufacturer's installation requirements.

Longitudinal channelizing devices may be of the type that are filled with water or may be used partially filled or used empty if lane closure time restriction constraints are encountered.

Replace misaligned or damaged units immediately.

Do not use any longitudinal channelizing device that is damaged or otherwise nonfunctional.

### **(B) Resetting Longitudinal Channelizing Devices**

Reset longitudinal channelizing devices as shown in the plans.

### **(C) Barrier Delineators**

Furnish delineators for the longitudinal channelizing devices. Use only one delineator type and only one attachment position throughout the duration of the project. Attach the delineators as shown in the *Roadway Standard Drawings*.

## **MEASUREMENT AND PAYMENT**

*Longitudinal Channelizing Devices* will be measured and paid as the maximum number of linear feet furnished, satisfactorily installed, accepted by the Engineer, maintained, reset and removed. Measurement will be made by counting the number of units used and multiplying by the length of a unit.

Delineation, relocation, resetting, replacement, or repair of longitudinal channelizing devices will be incidental to the work of this section.

Payment will be made under:

### **Pay Item**

Longitudinal Channelizing Device (Plastic Barrier).....Linear Foot

## PROJECT SPECIAL PROVISIONS

### HYDRO-DEMOLITION OF BRIDGE DECK

SPECIAL

#### **Description**

Hydro-demolition shall consist of the removal of the deck surface by means of high pressure water blasting which will remove concrete, asphalt, oil, dirt, concrete laitance and rust from the exposed reinforcing bars by direct impact, pressurization of micro and macro cracks and cavitation produced by jet instability. If reinforcing bars or bridge drainage devices are pulled up or snagged during scarification milling operations, the Contractor shall cease operations and consult with the Engineer to determine what adjustments, if any, need to be made to the roto-milling operations.

The Contractor shall submit for approval prior to beginning work, his Hydro-demolition Management Plan. This plan shall include how the Contractor shall provide for the collection, treatment, and disposal of all run-off water generated by the scarification and hydro-demolition processes. This Water Management Plan shall be prepared in accordance the NCDOT Guidelines for Managing Hydro-demolition Water (a copy of which is included in the Appendix). The contractor shall comply with applicable regulation concerning such water disposal.

#### **Equipment**

Use the following surface preparation equipment:

- Hydro-demolition machine, self-propelled with min. 17,000 psi orifice pressure.
- Sawing equipment capable of sawing concrete to the specified depth.
- Scarifying equipment that is a power-operated, mechanical scarifier or grinder capable of removing at least 1/4 inch (6 mm) for each pass.
- Hand-held high velocity (7,500 psi minimum) water-jet equipment capable of removing rust scale from reinforcing steel, or removing small chips of concrete partially loosened by the scarifying or chipping operation, and of removing rehydrated dust left from scarification.
- Power driven hand tools for removal of unsound concrete are required that meet the following requirements:
  - Pneumatic hammers weighing a nominal 35 lb (16 kg) or less.
  - Pneumatic hammer chisel-type bits that do not exceed the diameter of the shaft in width.
- Hand tools such as hammers and chisels for removal of final particles of unsound concrete.
- Vibratory screed for overlays, except as noted herein.

The hydro-demolition machine shall be self-propelled and capable of producing a water-jet through an orifice at a pressure of at least 17,000 PSI. The machine shall move the jet transversely across the area and forward and backward so that the entire deck is covered with the water-jet and operated at a pressure sufficient to remove the unsound concrete.

The machine shall have sufficient means to control and vary the following functions:

- (1) Water pressure.

- (2) Angle and distance of the orifice in relation to the surface to be blasted.
- (3) Limits of transverse and longitudinal movement of the orifice.
- (4) Speed of the orifice in the transverse and longitudinal direction.

The high pressure pump (or pumps) shall be equipped with over-pressurization relief valves and rupture disc systems. All high pressure components shall be rated at full working pressure of the hydro-demolition system. The complete hydro-demolition system must be capable of depressurization from a single point.

The equipment must operate at a noise level of less than 90 decibels at a distance of 50 feet.

**Construction Methods**

Remove all existing asphalt overlays and all loose, disintegrated, unsound or contaminated concrete from the bridge deck in accordance with the following surface preparation classifications shown below:

Seal all expansion joints subjected to run-off water from the hydro-demolition process with material approved by the Engineer, prior to beginning hydro-demolition. The expansion joints shall remain sealed until water from the hydro-demolition process no longer passes over them. The contractor shall take all steps necessary to eliminate the flow of water through the expansion joints, and any other locations water could leak from the deck.

All deck drains in the immediate work area and the other sections of the bridge affected by the work being performed in the immediate work area shall be sealed prior to beginning the Deck Scarification. They shall remain sealed until it has been determined that materials from the hydro-demolition and concrete overlay operations cannot be discharged through them any longer.

- A. Scarifying Bridge Deck: Removal of any asphalt wearing surface from the bridge deck or if applicable, the approach roadway pavement, and scarification of the concrete deck to remove the entire concrete surface of the deck to a uniform depth within 1/4" of the plan overlay thickness, but not less than 1/2" inch above the top mat of reinforcing steel.

**Estimated average cover to top mat:**

<b>Bridge # 30 in Burke County:</b>	<b>1" +/- 3/8"</b>
<b>Bridge # 14 in Rutherford County:</b>	<b>1 3/8" +/- 3/8"</b>
<b>Bridge # 31 in Perquimans County:</b>	<b>1 3/8" +/- 3/8"</b>

Remove and dispose of all concrete and asphalt, and thoroughly clean the scarified surface. In areas where reinforcing steel is located in the depth to be scarified, use another method with the Engineer's approval. If reinforcing bars or bridge drainage devices are pulled up or snagged during scarification milling operations, the Contractor shall cease operations and consult with the Engineer to determine what adjustments, if any, need to be made.

- B. Class I Surface Preparation (Partial Depth): Remove by hydro-demolition and by chipping with hand tools all loose, unsound and contaminated deck concrete and in areas where reinforcing steel is exposed remove deck to an average depth of 1/2 inch below the top mat of reinforcing steel. Dispose of the removed concrete, clean, repair or replace rusted or loose reinforcing steel, and thoroughly clean the newly exposed surface.

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

- C. Class II Surface Preparation (Partial Depth): Remove by hydro-demolition and by chipping with hand tools all loose, unsound and contaminated deck concrete to an average depth of approximately one-half the deck thickness, but no less than 3/4 inch below the top mat of steel. In areas where the entire perimeter of the reinforcing steel bar is exposed, chip or use hand-held high velocity water-jet equipment to provide a minimum depth of 3/4 inch below the bar. Dispose of the removed concrete, clean, repair or replace rusted or loose reinforcing steel, and thoroughly clean the newly exposed surface.

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

In overhangs, removing concrete areas of less than 0.60 ft<sup>2</sup>/ft length of bridge without overhang support is permitted unless the Engineer directs otherwise. Overhang support is required for areas removed greater than 0.60 ft<sup>2</sup>/ft length of bridge. Submit details of overhang support to the Engineer for approval prior to beginning the work.

- D. Class III Surface Preparation (Full Depth): Remove by hydro-demolition, and chipping with hand tools all loose, unsound and contaminated deck concrete to the full slab depth. Thoroughly clean the routed out areas and dispose of concrete removed and clean, repair, or replace reinforcing bars.

For areas of less than 3 ft<sup>2</sup> suspending forms from existing reinforcing steel using wire ties is permitted. For larger areas, support forms by blocking from the beam flanges, or other approved method.

Overhang support is required for full depth removal adjacent to bridge rails. Submit details of overhang support to the Engineer for approval prior to beginning the work.

- E. Under Deck Containment: Under deck containment shall be installed under areas of the bridge deck where Class III surface preparation occurs. The containment shall be installed prior to hydro-demolition in the areas indicated on the plans and in any other areas where blow thru or full depth removal occurs during surface preparation.

Submit for approval detailed plans for under deck containment. Detail how waste, debris, and wastewater are kept from falling below.

- F. Class AA Concrete: Fill the Class III surface preparation areas with Class AA or latex modified concrete up to the bottom of the proposed concrete overlay in accordance with the methods described below:

Refill areas where concrete was removed with Class AA concrete up to the bottom of the proposed concrete overlay in accordance with Section 420 of the Standard Specifications. Any of the methods for curing Class AA concrete as stated in the Standard Specifications are permitted except the membrane curing compound method.

Provide a raked finish to the surface of the Class AA concrete to provide a minimum relief of 1/16" and a maximum relief of 1/4". Place the overlay course only after the Class AA concrete has attained 2500 psi (17.2 MPa) as measured by an approved, non-destructive test method.

Refilling the areas from which concrete has been removed with latex modified concrete during the Class III repair is permitted if any of the following conditions are met:

- The reinforcing steel cover is 1½ inches or less for the top mat of steel.
- The area being repaired is less than 1 yd<sup>2</sup>.
- The Engineer directs the fill.

For areas of less than 3 ft<sup>2</sup> suspending forms from existing reinforcing steel using wire ties is permitted. For larger areas, support forms by blocking from the beam flanges, or other approved method.

### **Surface Preparation**

Two trial areas shall be designated by the Engineer to demonstrate that the equipment, personnel, and methods of operation are capable of producing results to the satisfaction of the owner's Engineer. The first trial area shall consist of approximately 50 square feet of sound concrete as determined by the Engineer. The equipment shall be calibrated to remove the sound concrete from the scarified surface to the depth required to achieve the plan overlay thickness. After completion of this test area, the equipment shall be moved to the second area consisting of deteriorated or defective concrete, to determine whether this unsound concrete will be completely removed with the previous calibration and to establish a baseline for requiring the contractor to place under-deck containment in areas subject to full depth removal, before beginning the hydro-demolition process in a span. Should it be determined that not all defective concrete has been removed, the hydro-demolition system shall be recalibrated to remove an additional 1/4 inch of sound concrete, then re-test on deteriorated concrete.

If additional defective concrete is found, the depth of cut will increase in 1/4 inch increments until only sound concrete is found remaining.

When satisfactory results are obtained, the machine parameters shall be used for production removal. The contractor shall make adjustments to the operating parameters, as required, to perform concrete removal as indicated on the drawings and to adjust to the variance in the compressive strength of the concrete.

Hand held water blasting equipment, pneumatic hammers, and hand tools may be substituted for the hydro-demolition unit in areas inaccessible (such as adjacent to the curb) or inconvenient (such as small patch areas).

The Engineer will re-inspect after each removal and require additional removals until compliance with plans and specifications are met.

Regardless of the method of removal, the removal operation shall be stopped if it is determined that sound concrete is being removed. Appropriate recalibration, or change in equipment and methods shall be performed prior to resuming the removal operation.

The Contractor shall take all steps necessary to prevent cutting or otherwise damaging existing steel designated to remain in place. Any such bars damaged (nicks deeper than 20% of the bar diameter) by the Contractor's operation shall be repaired or replaced. Defects in embedded reinforcing steel due to corrosion, which has reduced the cross sectional area of the steel by 25% or greater, shall have new reinforcing steel of similar cross section area lap-spliced to each side of the damaged area. Reinforcing bars shall be Grade 60 and meet the material requirements of Section 1070 of the Standard Specifications. Replacement bars shall be spliced to existing bars using either minimum 30 bar diameter lap splices or approved mechanical connectors.

The Contractor shall support and protect the exposed reinforcing steel, which is left unsupported by the hydro-demolition process, against displacement and damage from loads such as those caused by removal equipment and delivery buggies. All reinforcing steel damaged or dislodged by these operations shall be replaced with bars of the same size at the contractor's expense.

Rebar exposed and cleaned by hydro-demolition shall not require re-cleaning if encased in concrete within seven (7) days. Rebar exposed for more than seven (7) days shall be cleaned by high velocity water jets (4,000 PSI minimum) prior to placement of the new concrete.

When large areas of the deck on composite bridges are removed resulting in the debonding of the main stress carrying longitudinal reinforcing bars, the removal shall be performed in stages to comply with the construction sequence shown on the plans or as directed by the Engineer.

The Contractor shall shield his operations to prevent injury or damage from flying or falling debris. The Contractor shall provide a method of handling expected and unexpected blow-through of the deck where shown on the plans and as directed by the Engineer. This method shall provide for the containment of the runoff water and debris, and the protection of the area under the bridge deck. The Contractor shall be responsible for any injury or damage caused by his operations. The containment shall remain in-place until the latex modified concrete has been cast and reach minimum strength.

The removal area shall be thoroughly cleaned of all dirt, foreign materials and loose concrete to the extent necessary to produce a firm solid surface for adherence of new concrete.

Removal of concrete debris shall be accomplished either by hand or by mechanical means capable of removing wet debris and water all in the same pass and directly follow the hydro-demolition process to prevent the debris from re-setting or re-adhering to the surface of the remaining sound concrete. All concrete debris shall become the property of the Contractor and shall be legally disposed of at the contractor's expense. The contractor shall be responsible for disposing of all debris generated by the scarification operations.

Any debris which is allowed to re-settle or re-adhere to the surface of the sound concrete shall be carefully removed by the Contractor (at no additional cost), and the Contractor shall exercise care to avoid any damage to the remaining sound concrete or exposed reinforcement. Following the removal of the debris and prior to the placement of the overlay, the entire surface shall be blasted clean with high pressure water to remove any bond-breaking residue, loose material from the concrete surface, and/or rust from the reinforcing steel. This residue shall be collected and disposed of by the contractor. The Contractor will not be permitted to allow material to fall from the deck.

All water used for hydro-demolition shall be potable. The Contractor is responsible for furnishing all of the water required for the project.

Any areas of the prepared surface contaminated by oil or other materials detrimental to good bond as a result of the contractor's operations shall be removed to such depth as may be required at the contractor's expense.

The Contractor shall provide adequate lighting as required to allow for the safe conduct of nighttime removal operation if he elects to do hydro-demolition at night. Submit a lighting plan to the Engineer for approval prior to beginning work.

**Measurement and Payment**

*Scarifying Bridge Deck* will be measured and paid for by the contract unit price per square yard and shall be full compensation for the milling of any existing asphalt wearing surface from the bridge deck or approaches, milling of the entire concrete bridge deck, repairing or replacing any damaged reinforcing steel, and the cleaning and disposal of all waste material generated.

*Hydro-demolition of Bridge Deck* will be measured and paid for by the contract unit price per square yard and shall be full compensation for Classes I, II, and III deck preparation, removal and disposal of unsound and contaminated concrete, cleaning, repairing or replacing of reinforcing steel, under deck containment, Class AA Concrete, and for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Scarifying Bridge Deck	Square Yard
Hydro-demolition of Bridge Deck	Square Yard

**MANAGING HYDRODEMOLITION WATER**

(6-17-08)

SPI 4-03

**1.0 Description**

Collect and properly dispose of hydro-demolition water from bridge decks.

**2.0 Construction Methods**

- (A) Prepare a written hydro-demolition water management plan in accordance with the Guidelines for Managing Hydro-demolition Water available at <http://www.ncdot.gov/projects/ncbridges/#stats>. Submit plan and obtain approval from the Engineer prior to beginning of the hydro-demolition operation.
- (B) Prior to final payment, submit a paper copy of all completed records pertaining to disposal of hydro-demolition water.

**3.0 Measurement and Payment**

Payment for collecting, sampling, testing, pH adjustment, monitoring, handling, discharging, hauling, disposing of the hydro-demolition water, documentation, record keeping, and obtaining permits if applicable, shall be included in the payment for other items.

**LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH**

**SPECIAL**

**Description**

This work consists of furnishing and placing an overlay of latex modified concrete-very early strength (LMC-VES) over conventional existing concrete or repair concrete on bridge decks. Unless otherwise indicated on the plans, groove the bridge floor in accordance with Article 420-14(B) of the *Standard Specifications*.

## Materials

For equipment, proportioning and mixing of modified compositions, see Section 1000-8 of the *Standard Specifications*. Prior to beginning any work, obtain approval for all equipment to be used for deck preparation, mixing, placing, finishing, and curing the latex modified concrete.

For material of modified compositions, see Section 1000-8 of the *Standard Specifications* with the following modifications:

Page 10-10, Section 1000-8(A), add the following:

Cement – For latex modified concrete-very early strength, Cement shall be approximately 1/3 calcium sulfoaluminate (C4A3S) and 2/3 dicalcium silicate (C2S) or other hydraulic cement that will provide a Latex-Modified Concrete that meets the physical requirements for Latex-Modified Concrete as indicated in this special provision.

Page 10-11, Table beginning in paragraph 4, add the following:

Minimum compressive strength, normal setting concrete, 3000 psi at 7 days; very early strength concrete, 3000 psi at 3 hours.

Water-Cement Ratio by weight, normal setting concrete, maximum 0.40; very early strength concrete, maximum 0.42

Page 10-11, last paragraph of 1000-8, add the following:

Submit the latex modified concrete mix design, including laboratory compressive strength data for a minimum of six 4-inch by 8-inch cylinders at the appropriate age (7 days for normal setting concrete; 3 hours for very early strength concrete) to the Engineer for review. Include test results for the slump and air content of the laboratory mix. Perform tests in accordance with AASHTO T 22, T 119 and T 152.

## System Quality Submittals

**Past Performance Submittal:** Prior to beginning work, the latex modified concrete overlay Contractor shall submit records demonstrating verifiable satisfactory performance utilizing very early strength latex modified concrete on at least five (5) bridges in any state with similar scope of work.

## Construction Methods

### (A) Preparation of Surface

Completely clean all surfaces within the 48 hours prior to placing the overlay unless otherwise approved.

Thoroughly soak the clean surface for at least 2 hours immediately prior to placing the latex modified concrete. After soaking the surface for at least 2 hours, cover it with a layer of white opaque polyethylene film that is at least 4 mils (0.100 mm) thick. Immediately prior to placing the latex modified concrete, remove standing water from the surface.

(B) Placing and Finishing

Prior to placing modified material, install a bulkhead of easily compressible material at expansion joints to the required grade and profile. Placing material across expansion joints and sawing it later is not permitted.

Place and fasten screed rails in position to ensure finishing the new surface to the required profile. Do not treat screed rails with parting compound to facilitate their removal. Prior to placing the overlay, attach a 2 inch filler block to the bottom of the screed and pass it over the area to be repaired to check the thickness. Remove all concrete that the block does not clear.

Separate screed rails or construction dams from the newly placed material by passing a pointing trowel along their inside face. Carefully make this trowel cut for the entire depth and length of rails or dams after the modified composition has sufficiently stiffened and cannot flow back.

Brush a latex cement mixture onto the wetted, prepared surface. Carefully give all vertical and horizontal surfaces a thorough, even coating and do not let the brushed material dry before it is covered with the additional material required for the final grade. Remove all loose aggregate from the latex cement brushed surface prior to latex concrete placement (NOTE: Not required for surfaces prepared with hydro-demolition).

Place the latex modified concrete in one operation.

Provide a minimum overlay thickness of as shown in the plans and a final surface that is approximately the same as the original deck surface.

Construction joints other than those shown on the plans will be submitted to the Engineer for approval.

When a tight, uniform surface is achieved and before the concrete becomes non-plastic, further finish the surface of the floor by burlap dragging or another acceptable method that produces an acceptable uniform surface texture.

Promptly cover the surface with a single layer of clean, wet burlap as soon as the surface will support it without deformation. Wet cure only the surface for minimum 3 hours and until a compressive strength of 3000 psi is reached. Keep the curing material saturated during the wet cure period.

**Field Testing Latex Modified Concrete-Very Early Strength**

*For projects with multiple bridges using the same mix design, or bridge decks with time constraints that require more than one night for placement, a relationship between the compressive strength and rebound hammer readings may be developed and used to obtain the three hour cylinder strength, in lieu of compressive strength testing. For the correct procedure, reference Document: PL11-LMC Rapid Set Overlays. Contact your local M&T representative for a copy of this document or see the following link: <http://www.ncdot.org/doh/operations/materials/eforms.html> under Physical Lab. Seven day concrete compressive strength sampling and testing is required in addition to the use of this method.*

Do not place the latex modified concrete before the burlap is saturated and approved by the Engineer. Drain excess water from the wet burlap before placement.

As soon as practical, after the concrete has hardened sufficiently, test the finished surface with an approved rolling straightedge that is designed, constructed, and adjusted so that it

will accurately indicate or mark all floor areas which deviate from a plane surface by more than 1/8 inch in 10 feet (3 mm in 3 m). Remove all high areas in the hardened surface in excess of 1/8 inch in 10 feet (3 mm in 3 m) with an approved grinding or cutting machine. Where variations are such that the corrections extend below the limits of the top layer of grout, seal the corrected surface with an approved sealing agent if required by the Engineer. If approved by the Engineer, correct low areas in an acceptable manner.

Vehicular traffic may travel across an un-grooved deck, however, complete the transverse sawed grooves across the entire deck area after the latex modified concrete achieves design strength and no later than seven days after placing the latex modified concrete.

(C) Limitations of Operations

The mixer will not be permitted on the bridge deck unless otherwise approved.

No traffic is permitted on the finished latex modified concrete surface until the total specified curing time is completed and until the concrete reaches the minimum specified compressive strength.

Do not place latex modified concrete if the temperature of the concrete surface on which the overlay is to be placed is below 40°F (4°C) or above 85°F (29°C). Measure the surface temperature by placing a thermometer under the insulation against the surface.

Prior to placing latex modified concrete, the Engineer determines the air temperature and wind speed. Do not place latex modified concrete if the ambient air temperature is below 45°F (7°C) or above 85°F (29°C), or if the wind velocity is in excess of 10 mph (16 km/h). If working at night, provide approved lighting. Provide aggregates for use in the latex modified concrete that are free from ice, frost and frozen particles when introduced into the mixer.

Do not place latex modified concrete when the temperature of the latex modified concrete is below 45°F (7°C) or above 85°F (29°C).

If the rate of evaporation of surface moisture from the latex modified concrete exceeds 0.05 pounds per square foot per hour during placement, measures shall be taken to reduce the rate of evaporation. The evaporation rate is calculated using the following formula:

$$E=(T_c^{2.5}-rT_a^{2.5})(1+0.4V)(10^{-6}) \text{ where,}$$

E=Evaporation Rate,  $T_c$ =Concrete Temp ( $^{\circ}$ F), r=Relative Humidity (%/100)

$T_a$ =Air Temp ( $^{\circ}$ F), V=Wind Velocity (mph)

Stop all placement operations during periods of precipitation. Take adequate precautions to protect freshly placed latex modified concrete from sudden or unexpected precipitation. Keep an adequate quantity of protective coverings at the worksite to protect the freshly placed pavement from precipitation.

**Measurement and Payment**

*Latex Modified Concrete Overlay-Very Early Strength* will be measured and paid for in cubic yards of latex modified concrete satisfactorily placed in the completed deck.

*Placing and Finishing of Latex Modified Concrete Overlay-Very Early Strength* will be paid for at the contract unit price bid per square yard which price will be full compensation for furnishing all labor, materials, tools, equipment and incidentals required to complete the work in accordance with the contract documents.

*Grooving Bridge Floors* will be measured and paid for in accordance with Section 420 of the *Standard Specifications*.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Latex Modified Concrete Overlay-Very Early Strength	Cubic Yard
Placing and Finishing Latex Modified Concrete Overlay-Very Early Strength	Square Yard

## **SHOTCRETE REPAIRS**

**(8-13-04)**

### **SCOPE OF WORK**

This work consists of completely removing deteriorated and disintegrated concrete from substructure bent caps, columns, and struts in reasonably close conformity with the lines, depth and details shown on the plans, described herein and as established by the Engineer. This work also includes cleaning reinforcing steel, removing all loose materials, removing and disposing of debris, and applying shotcrete.

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

Repair, to the Engineer's satisfaction, any portion of the structure that is damaged from construction operations. No extra payment is provided for these repairs.

Prior to beginning any repair work, provide a sufficiently sized temporary work platform at each repair location as required. Design steel members meeting 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 structure design for review and approval. Do not install the platform until the design is approved. Do not drill holes into the superstructure. When the platform is removed, remove all anchorages made in the substructure and repair the substructure at no additional cost to the Department.

### **SHOTCRETE**

#### **A. Qualification of Shotcrete Contractor**

*Shotcrete Contractors are not acceptable as a Prime Contractor or Subcontractor unless all of following requirements are met.*

The Shotcrete Contractor furnishes proof that his or her company has a minimum of 5 years experience in shotcrete repair work on jobs of similar size and character.

The Shotcrete Contractor furnishes five references who were responsible for supervision of similar projects and testifies to the successful completion of these projects. Include name, address, and telephone number.

Prior to starting work, the Contractor's nozzlemen are required to pass a test demonstrating their competence. This test is conducted at the job site and

approximates actual working conditions as near as possible. For test requirements, see ACI 506.3R, Chapters 2.5 and 3. Only workmanship demonstration is tested.

#### B. General

When shotcreting, meet all requirements of ACI 506.2, published by the American Concrete Institute, Detroit, Michigan, except as modified by the requirements of this Special Provision.

#### C. Material

Use materials conforming to the requirements of the applicable sections of the Standard Specifications and the following provisions:

Use Type II Cement.

Replace ten percent by weight of the cement with silica fume.

Do not use admixtures without approval.

Produce shotcrete cores with a compressive strength of 5000 psi (34.5 MPa) at 28 days. The provisions of ACI 506.2, Section 1.6.3.3, Paragraph 2, do not apply.

Submit the shotcrete mix design, including the source of the material, to the Engineer for acceptance before using it.

Use size 2S or 2MS fine aggregate unless otherwise approved.

#### D. Finish

Slightly build up and trim the shotcrete surface to the final surface by cutting with the leading edge of a sharp trowel. Use a rubber float to float any imperfections. Limit work on the finished surface to correcting imperfections caused by trowel cutting.

#### E. Testing

Each day shotcreting takes place, have each nozzleman shoot one 18" x 18" x 3" (460 mm x 460 mm x 75 mm) Test Panel. Shoot the panel in the same position as the repair work that is being done. The panel demonstrates whether the shotcrete is being properly applied and furnishes cores for testing compressive strength. Drill three 3" (76 mm) diameter cores from each test panel and also drill cores from the repair substructure units as directed by the Engineer. Do not take cores from repaired substructure units until the shotcrete has cured for 7 days. Drill a core that penetrates into the existing substructure concrete at least 2 inches (50 mm). These cores are inspected for delaminations and sand pockets and tested for bond strength and/or compressive strength. If a core taken from a repaired substructure unit indicates unsatisfactory application or performance of the shotcrete, take additional cores from the applicable substructure unit(s) for additional evaluation and testing as directed by the Engineer. No extra payment is provided for drilling extra cores. Patch all core holes in the repaired substructure units to the satisfaction of the Engineer. All material, sample, and core testing is done by the Materials and Tests Unit of North Carolina Department of Transportation.

## F. Mixture

Mix the shotcrete in the proportions of one part of portland cement to four parts of sand.

Measure this mixture by volume in the dry loose state. Check batching equipment daily or at the discretion of the Engineer.

## G. Repair Method and Operations

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

Remove all deteriorated concrete to sound concrete with a 17 lb (7.7 kg) (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. Do not remove more existing concrete than required to expose the surface of the sound concrete. Unless specifically directed by the Engineer, do not remove concrete deeper than 6 inches (150 mm) or deeper than 1 inch (25 mm) below the reinforcing steel.

If sound concrete is encountered before existing reinforcing steel is exposed, prepare and repair the surface without removing any more concrete. However, if the reinforcing steel is wholly or partially exposed, remove the deteriorated and/or sound concrete to a minimum clearance of 1 inch (25 mm) all around the reinforcing steel.

Sandblast all exposed concrete surfaces and existing reinforcing steel in repair areas to remove all debris, loose concrete, loose mortar, rust, scale, etc. Use a wire brush to clean all exposed reinforcing steel surfaces facing away from the sandblast nozzle to remove all dust and loose particles.

All material removed becomes the Contractor's. Use an approved method to dispose of the material.

Restore all repaired members, including chamfered edges, as close as practicable to their original "As Built" dimensions and configuration. Provide a minimum of 2" (50 mm) shotcrete cover over reinforcing steel exposed during repair. Finish the shotcrete by cutting the surface to final grade with the leading edge of a trowel.

Provide welded wire fabric at each repair area larger than 1 ft<sup>2</sup> (0.1 m<sup>2</sup>) if the depth of the repair exceeds 2 inches (50 mm) from the "As Built" outside face. Provide a minimum 2" x 2" (50 mm x 50 mm) - 12 gage galvanized welded wire fabric. Rigidly secure the welded wire fabric to existing steel or to 3/16" (4.76 mm) minimum diameter adequately spaced galvanized hook fasteners to prevent sagging. Encase the welded wire fabric in shotcrete to a minimum depth of 1½ inches (38 mm).

If preferred, use steel or synthetic fiber reinforcement as an alternate to welded wire fabric.

Work only with experienced personnel. Always work under the direction of an experienced superintendent. The superintendent is required to show a certified experience record indicating at least 5 years experience on work of similar type. No nozzleman is deemed experienced unless they have worked on several other jobs similar to that specified herein and have passed the required pre-qualification test listed in this Special Provision.

Before applying the shotcrete to the surface, thoroughly clean the surface of all dirt, grease, oil or foreign matter, and remove all loose or weakened material.

Wash the roughened existing concrete surface with fresh potable water and an air blast, or with a “stiff” hose stream of fresh water until all loosened materials and salt water spray are removed. Perform this operation 30 minutes to 1 hour prior to applying the shotcrete.

Maximum time allowed between removal of deteriorated concrete and shotcrete application is 5 days. If the time allowance is exceeded it will be necessary to prepare the surface again using the methods described above before shotcrete can be applied.

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

If a work stoppage longer than 2 hours takes place on any shotcrete layer prior to the time it has been built up to required thickness, thoroughly wash the surface with a fresh water stream and air hose as outlined previously, prior to continuing with the remaining shotcrete course. Do not apply shotcrete to a dry surface.

Have the nozzleman hold the nozzle 3 – 4 feet (0.9 to 1.2 m) from the surface being covered in a position that ensures the stream of flowing material strikes at approximately right angles to the surface being covered without excessive impact. Have the nozzleman control the water content so it never exceeds 3½ gallons (13.25 liters) per sack of cement. Direct the nozzlemen to maintain the water at a practicable minimum, dependent on weather conditions, so that the mix properly adheres. Control water content so that it does 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 strips or guide wires that do not entrap rebound sand to bring the finished work to approximate shape. 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.

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

Apply shotcrete only when the air temperature is at least 40°F (4°C) and rising, but less than 95°F (35°C). Do not apply shotcrete to frosted surfaces. Maintain shotcrete at a minimum temperature of 40°F (4°C) for 3 days.

## H. Testing Shotcrete Surfaces

Immediately after bringing shotcrete surfaces to final thickness, thoroughly check them for sags, bridging, and other deficiencies. Approximately 3 days after completing the final shotcrete placement, thoroughly test it again with a hammer. At this time, the shotcrete should have sufficient strength for all sound sections to ring sharply. Remove and replace any unsound portions of the work found during this 3 day old inspection period, or at any other time prior to the final inspection of the work. No additional compensation is provided for removal and replacement of concrete during or after the 3 day old inspection.

## I. Curing

Begin curing as soon as the finished shotcrete surface withstands the curing operation without damage in accordance with Section 3.7 of ACI 506.2.

## **METHOD OF MEASUREMENT**

Substructure shotcrete repair work will be measured in cubic feet (cubic meters) of the shotcrete applied. Depth will be measured from a place at the original outside concrete face. The Contractor and Engineer will measure repair quantities after removal of unsound concrete and before application of shotcrete. Cores included in the item "Shotcrete Core Samples" are those taken from substructure units after shotcrete repairs. Cores taken from the required test panels are not included in "Shotcrete Core Samples".

## **BASIS OF PAYMENT**

Concrete repair work will be paid for at the contract unit price bid per cubic foot (cubic meter) for "Shotcrete Repairs" which payment 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 accomplish removal. Such payment will also include the cost of sandblasting, surface cleaning and preparation, cleaning of reinforcing steel, cost of temporary work platform, testing of the soundness of the exposed concrete surface, furnishing and installation of welded wire fabric or fibers, shotcrete material, application of shotcrete, curing of shotcrete and sampling of concrete, drilling of cores from the test panels, except the drilling of cores from the repaired substructure will be paid for as "Shotcrete Core Samples" at the unit price each.

## **EVAZOTE JOINT SEALS**

**(11-5-10)**

### **Seals**

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

Use seals manufactured with grooves 1/8" (3 mm) ± wide by 1/8" (3 mm) ± deep and spaced between 1/4" (6 mm) and 1/2" (13 mm) apart along the bond surface running the length of the joint. Use seals with a depth that meets the manufacturer's recommendation, but is not less than 70% of the uncompressed width. Provide a seal designed so that, when compressed, the center

portion of the top does not extend upward above the original height of the seal by more than 1/4” (6 mm). Provide a seal that has a working range of 30% tension and 60% compression and meets the requirements given below.

TEST	TEST METHOD	REQUIREMENT
Tensile strength	ASTM D3575-08, Suffix T	110 – 130 psi (758 – 896 kpa)
Compression Set	ASTM D1056 Suffix B, 2 hr recovery	10% - 16%
Water Absorption	ASTM D3575	< 0.03 lb/ft <sup>2</sup> (< 0.001 kpa)
Elongation at Break	ASTM D3575	180% - 210%
Tear Strength	ASTM D624 (D3575-08, Suffix G)	14 – 20 pli
Density	ASTM D3575-08, Suffix W, Method A	1.8 – 2.2 lb/ft <sup>3</sup> (28.8 – 35.2 kg/m <sup>3</sup> )
Toxicity	ISO-10993.5	Pass (not cytotoxic)

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

### **Bonding Adhesive**

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

TEST	TEST METHOD	REQUIREMENT
Tensile strength	ASTM D638	3000 psi (20.7 MPa) min.
Compressive strength	ASTM D695	7000 psi (48.3 MPa) min.
Hardness	Shore D Scale	75-85 psi (0.51-0.58 MPa)
Water Absorption	ASTM D570	0.25% by weight max.
Elongation to Break	ASTM D638	5% max.
Bond Strength	ASTM C882	2000 psi (13.8 MPa) min.

Use an adhesive that is workable to 40°F (4°C). When installing in ambient air or surface 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 seal.

### **Elastomeric Concrete**

The elastomeric concrete shall not be placed until the reinforced concrete deck slab has cured for seven full days and reached a minimum strength of 3000 psi (20.7 Mpa).

Prepare the concrete surface within 48 hours prior to placing the elastomeric concrete. Before placing the elastomeric concrete, all concrete surfaces shall be thoroughly cleaned and dry.

Sandblast the concrete surface in the blockout and clear the surface of all loose debris. Do not place the elastomeric concrete until the surface preparation is completed and approved.

A manufacturer's representative shall be present when placing elastomeric concrete. Do not place elastomeric concrete if the ambient air or surface temperature is below 45°F (7°C).

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

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

### **Sawing the Joint**

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

The elastomeric concrete shall cure a minimum of 2 days prior to sawing the elastomeric concrete to the final width and depth as specified in the plans.

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

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

The desired depth is the depth of the seal plus 1/4" (6 mm) above the top of the seal plus approximately 1" (25 mm) below the bottom of the seal. An irregular bottom of sawed joint is permitted as indicated on the plans. Grind exposed corners on saw cut edges to a 1/4" (6 mm) chamfer.

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.

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 below. Do not install the joint seal if the ambient air or surface temperature is below 45°F (7°C). Have a manufacturer's certified trained factory representative present during the installation of the first seal of the project.

Before installing the joint seal, check the uninstalled seal length to insure the seal is the same length as the deck opening. When the joint seal requires splicing, use the heat welding method by placing the joint material ends against a teflon heating iron of 425-475°F (218-246°C) for 7 - 10 seconds, then pressing the ends together tightly. Do not test the welding until the material has completely cooled.

Begin installation by protecting the top edges of the concrete deck adjacent to the vertical walls of the joint as a means to minimize clean up. After opening both cans of the bonding agent, stir each can using separate stirring rods for each component to prevent premature curing of the bonding agent. Pour the two components, at the specified mixing ratio, into a clean mixing bucket. Mix the components with a low speed drill (400 rpm max.) until a uniform gray color is achieved without visible marbling. Apply bonding agent to both sides of the elastomeric concrete as well as both sides of the joint seal, making certain to completely fill the grooves with epoxy. With gloved hands, compress the joint seal and with the help of a blunt probe, push the seal into the joint opening until the seal is recessed approximately 1/4" (6 mm) below the surface. When pushing down on the joint seal, apply pressure only in a downward direction. Do not push the joint seal into the joint opening at an angle that would stretch the material. Seals that are stretched during installation shall be removed and rejected. Once work on placing a seal begins, do not stop until it is completed. Clean the excess epoxy from the top of the joint seal immediately with a trowel. Do not use solvents or any cleaners to remove the excess epoxy from the top of the seal. Remove the protective cover at the joint edges and check for any excess epoxy on the surface. Remove excess epoxy with a trowel, the use of solvents or any cleaners will not be allowed.

The installed system shall be watertight and will be monitored until final inspection and approval.

### **Basis of Payment**

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

**Description**

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

**Materials****(A) Overlay (Multiple Layers)**

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

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

<b>Property</b>	<b>Requirement</b>	<b>Test Method</b>
Pot life	15-45 minutes @ 75 deg. F	ASTM C881
Min. compressive Strength @ 3 hrs.	1,000 psi @ 75 deg. F	ASTM C109
Min. adhesion strength @ 24 hrs.	250 psi @ 75 deg. F	VTM-92

**(B) Aggregate**

Aggregate used for all layers shall be non-friable, non-polishing, clean and free from surface moisture. The aggregate shall be flint rock, 100% fractured, thoroughly washed and kiln dried to a maximum moisture content of 0.2% by weight, measured in accordance with ASTM C566. The fracture requirements shall be at least one mechanically fractured face and will apply to materials retained on a U.S. No. 10 sieve.

Aggregate properties shall conform to the properties of Table 1 and Table 2:

<b>TABLE 1</b>		
<b>AGGREGATE PROPERTIES</b>		
<b>Property</b>	<b>Value</b>	<b>Test Method</b>
Moisture Content, max.	0.2% by weight	AASHTO T255

Mohs Hardness, min.	6.5	
Soundness Loss, 5 cycles in Sodium Sulfate, max.	5.4%	AASHTO T104
Micro-Deval, max.	10%	AASHTO TP58

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

### System Quality Submittals

- (1) **Past Performance Submittal:** Prior to beginning work, the selected epoxy polymer overlay system manufacturer shall submit records demonstrating verifiable satisfactory performance under average daily traffic of at least 10,000 for at least five (5) years on at least three (3) bridges in any state.
- (2) **Performance Guarantee:** The Contractor shall guarantee materials and workmanship against latent and patent defects arising from faulty materials, faulty workmanship or negligence for a period of five (5) years following the date of final acceptance of the work for maintenance and shall replace such defective materials and workmanship without cost to the Department. The Contractor will not be responsible for damage due to normal wear and tear, for negligence on the part of the Department, and/or for use in excess of the design.

This guarantee provision shall be invoked for the following conditions:

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

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

### Construction Methods

#### (A) Surface Preparation

Remove all existing asphalt overlays if applicable, and all loose, disintegrated, unsound or contaminated concrete from the bridge deck.

Prepare the bridge deck prior to applying the overlay system, in accordance with the manufacturer's recommendations, the special provision *Concrete Deck Repair for Epoxy or Asphalt Overlays*, and the following.

After deck repairs have been completed, clean the entire deck surface by steel shot blasting and other means to remove asphaltic material, oils, dirt, rubber, curing compounds, paint carbonation, laitance, weak surface mortar and other potentially detrimental materials that may interfere with the bonding or curing of the overlay. Acceptable cleaning is usually recognized by a significant change in the color of the concrete and mortar, and the beginning

exposure of coarse aggregate particles. Mortar that is sound and soundly bonded to the coarse aggregate shall have open pores due to cleaning to be considered adequate for bond. Areas of asphalt larger than one inch in diameter, or smaller areas spaced less than six inches apart, shall be removed. Traffic paint lines shall be considered clean when the concrete has exposed aggregate showing through the paint stripe. Remove all dust and other loose material. Care shall be taken and methods used to fully collect the excess material and limit loss to the environment.

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

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

## **(B) Equipment**

For mechanical applications, equipment shall consist of no less than an epoxy distribution system, aggregate spreader, application squeegee and vacuum trucks. The distribution system or distributor shall accurately blend the epoxy resin and hardening agent, and shall uniformly and accurately apply the epoxy materials at the specified rate to the bridge deck in such a manner as to cover 100% of the work area. The aggregate spreader shall be propelled in such a manner as to uniformly and accurately apply the aggregate to cover 100% of the epoxy material. The vacuum truck shall be self-propelled.

For hand applications, equipment shall consist of calibrated containers, a paddle type mixer, squeegees, rollers and brooms, which are suitable for mixing the epoxy and applying the epoxy and aggregate.

## **(C) Application**

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

The number of layers and the application rates of the liquid in the various layers shall be as recommended by the manufacturer in order to achieve a minimum overlay thickness of 3/8".

After the epoxy mixture has been prepared for the epoxy and stone overlay, it shall be immediately and uniformly applied to the surface of the bridge deck. The temperature of the bridge deck surface and all epoxy and aggregate components shall be 60°F or above at the time of application. Epoxy shall not be applied if the air temperature is expected to drop below 55°F within 8 hours after application, or when high temperatures would cause the gel time to be less than 10 minutes. The dry aggregate shall be applied in such a manner as to completely cover the epoxy mixture so that no wet spots appear and before it begins to gel. First course applications that do not receive enough aggregate prior to gel shall be removed and replaced. A second course insufficiently covered with aggregate may be left in place, but will require additional applications before opening to traffic. Each course of epoxy overlay shall be cured until vacuuming or brooming can be performed without tearing or

damaging the surface. Traffic or equipment shall not be permitted on the overlay surface during the curing period. After the first course curing period, all loose aggregate shall be removed by vacuuming or brooming and the next overlay course(s) applied to completion. The minimum curing periods shall be as follows:

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

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

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

The Contractor shall plan and prosecute the work to provide the curing periods as specified herein, or other longer minimum curing periods as prescribed by the manufacturer prior to opening to public or construction traffic, unless otherwise permitted. Course one applications shall not be opened to traffic.

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

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

**Measurement and Payment**

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

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
Placement of Epoxy Overlay	Square Feet

**CONCRETE DECK REPAIR FOR EPOXY OR ASPHALT OVERLAYS**

**Description**

This work consists of concrete deck repairs prior to placing an epoxy based overlay system or asphalt overlay as designated by the Engineer. The Contractor shall begin work within 60 days of notification. After surface preparation, the Engineer sounds the deck and locates and marks areas to be repaired using a chain drag or other acceptable means.

**Materials**

Epoxy Overlays: Concrete deck repair material shall be epoxy based material with a minimum modulus of elasticity of 2,500 ksi, compatible with epoxy based overlay systems, free of magnesium phosphate, and approved for use by the NCDOT for concrete deck repair. Materials containing cement mortar are acceptable with the understanding that a 28 day curing period will be required after installation of the patch material before placing the epoxy overlay can begin. The Contractor shall submit the proposed repair material and schedule of repairs to the Engineer for approval prior to beginning the work.

Asphalt Overlays: Concrete deck repair material shall be approved for use by the NCDOT for concrete deck repair. The Contractor shall submit the proposed repair material and schedule of repairs to the Engineer for approval prior to beginning the work.

### **Construction Methods**

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

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

In overhangs, removing concrete areas of less than 0.60 ft<sup>2</sup>/ft length of bridge without overhang support will be permitted unless the Engineer directs otherwise. For concrete areas greater than 0.60 ft<sup>2</sup>/ft length of bridge, approval of the overhang support will be required.

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

### **Measurement and Payment**

*Class II Concrete Deck Repair for Epoxy/Asphalt Overlay* will be measured and paid for in square feet for the appropriate areas so prepared. The cost for concrete deck repair for epoxy or asphalt overlays including, but not limited to, materials, labor, maintenance, equipment, tools, and incidentals will be included in the unit price per square foot.

Payment will be made under:

#### **Pay Item**

Class II Concrete Deck Repair for Epoxy/Asphalt Overlay

#### **Pay Unit**

Square Foot

### **DISADVANTAGED BUSINESS ENTERPRISE (POC AND MUNICIPALITIES):**

(10-16-07)(Rev 12-21-10)

### **Policy**

It is the policy of the North Carolina Department of Transportation that Disadvantaged Business Enterprises (DBEs) as defined in 49 CFR Part 26 shall have the equal opportunity to compete

fairly for and to participate in the performance of contracts financed in whole or in part by Federal Funds.

## **Obligation**

The Contractor, subcontractor, and sub-recipient shall not discriminate on the basis of race, religion, color, national origin, age, disability or sex in the performance of this contract. The Contractor shall comply with applicable requirements of *49 CFR Part 26* in the award and administration of federally assisted contracts. Failure by the Contractor to comply with these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the Department deems necessary.

## **Definitions**

*Commitment* - The approved DBE participation submitted by the prime contractor during the bidding process.

*Committed DBE* - Any DBE listed on the DBE commitment list approved by the Department at the time of bid submission or any DBE utilized as a replacement for a DBE firm listed on the commitment list.

*Department* - North Carolina Department of Transportation

*Municipality* - The entity letting the contract, when this provision refers to the Department or DOT, it shall mean municipality, if applicable.

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

*Goal* - The DBE participation specified herein

*Letter of Intent* – Written documentation of the bidder/offeror's commitment to use a DBE subcontractor and confirmation from the DBE that it is participating in the contract.

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

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

*SAF Subcontract Approval Form* - Form required for approval to sublet the contract.

*North Carolina Unified Certification Program* - A program that provides comprehensive information to applicants for certification, such that an applicant is required to apply only once

for a DBE certification that will be honored by all recipients of USDOT funds in the state and not limited to the Department of Transportation only. The Certification Program is in accordance with *49 CFR Part 26*.

*Standard Specifications* – The general term comprising all directions, provisions, and requirements contained or referred to in the *North Carolina Department of Transportation Standard Specifications for Roads and Structures* and any subsequent revisions or additions to such book that are issued under the title *Supplemental Specifications*.

*USDOT* - United States Department of Transportation, including the Office of the Secretary, the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Federal Aviation Administration (FAA).

### **Contract Goal**

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

Disadvantaged Business Enterprises **0 %**

- (A) *If the goal is more than zero*, the Contractor shall exercise all necessary and reasonable steps to ensure that Disadvantaged Business Enterprises participate in at least the percent of the contract as set forth above as the goal.
- (B) *If the goal is zero*, the Contractor shall continue to recruit the DBEs and report the use of DBEs during the construction of the project. A good faith effort will not be required with a zero goal.

### **Contract Requirement**

The approved DBE participation submitted by the Contractor shall be the **Contract Requirement**.

### **Certified Transportation Firms Directory**

Real-time information about firms doing business with the Department and firms that are certified through North Carolina's Unified Certification Program is available in the Directory of Transportation Firms. The Directory can be accessed by the link on the Department's homepage or by entering <https://apps.dot.state.nc.us/vendor/directory> in the address bar of your web browser. Only firms identified as DBE certified in the Directory can be utilized to meet the contract goals.

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

### **Listing of DBE Subcontractors in Contract**

Only those DBE firms with current certification are acceptable for listing in the bidder's submittal of DBE participation. The Contractor shall indicate the following required information:

- (A) *If the goal is more than zero* bidders, at the time the bid proposal is submitted, shall submit a listing of DBE participation on the appropriate form (or facsimile thereof) contained elsewhere in the contract documents in order for the bid to be considered responsive. Bidders shall indicate the total dollar value of the DBE participation for the contract. If the bidder has no DBE participation, they shall indicate this on the form “Listing of DBE Subcontractors” by entering the word or number zero. This form shall be completed in its entirety. **Blank forms will not be deemed to represent zero participation.** Bids submitted that do not have DBE participation indicated on the appropriate form will not be read publicly during the opening of bids. The Department will not consider these bids for award and the proposal will be returned to the bidder.
- (B) *If the goal is zero*, bidders at the time the bid proposal is submitted, shall enter the word “zero” or number “0” or if there is participation, add the value on the “Listing of DBE Subcontractors” (or facsimile thereof) contained elsewhere in the contract documents.

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

The bidder shall submit written documentation of the bidder/offeror’s commitment to use a DBE subcontractor whose participation it submits to meet a contract goal and written confirmation

from each DBE, listed in the proposal, indicating their participation in the contract. This documentation shall be submitted on the Department’s form titled “Letter of Intent to Perform as a Subcontractor”. This letter of intent form is available at:

<http://www.ncdot.org/doh/preconstruct/ps/contracts/letterofintent.pdf> It shall be received in the office of the State Bridge Management Engineer no later than noon of the sixth calendar day following opening of bids.

If the bidder fails to submit the letter of intent from each committed DBE listed in the proposal indicating their participation in the contract, the DBE participation will not count toward meeting the goal.

### **Counting DBE Participation Toward Meeting DBE Goal of Zero or More**

- (A) If a firm is determined to be an eligible DBE firm, the total dollar value of the participation by the DBE will be counted toward the contract requirement. The total dollar value of participation by a certified DBE will be based upon the value of work actually performed by the DBE and the actual payments to DBE firms by the Contractor.
- (B) When a DBE performs as a participant in a joint venture, the Contractor may count toward its DBE goal a portion of the total value of participation with the DBE in the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the DBE performs with its forces.
- (C) (1) The Contractor may count toward its DBE requirement only expenditures to DBEs that perform a commercially useful function in the work of a contract. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform

a commercially useful function, the DBE shall also be responsible with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, the Department will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors.

- (2) A DBE may enter into subcontracts. Work that a DBE subcontracts to another DBE firm may be counted toward the contract requirement. Work that a DBE subcontracts to a non-DBE firm does not count toward the contract requirement. If a DBE contractor or subcontractor subcontracts a significantly greater portion of the work of the contract than would be expected on the basis of standard industry practices, the DBE shall be presumed not to be performing a commercially useful function. The DBE may present evidence to rebut this presumption to the Department for commercially useful functions. The Department's decision on the

rebuttal of this presumption is subject to review by the Federal Highway Administration but is not administratively appealable to USDOT.

- (3) The following factors will be used to determine if a DBE trucking firm is performing a commercially useful function.
  - (a) The DBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there shall not be a contrived arrangement for the purpose of meeting DBE goals.
  - (b) The DBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
  - (c) The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
  - (d) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
  - (e) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE lessees not to exceed the value of transportation services provided by DBE-owned trucks on the contract. Additional participation by non-DBE lessees receives credit only for the fee or commission it receives as a result of the lease arrangement. The value of services performed under lease

agreements between the DBE and Contractor will not count towards the contract requirement.

- (f) For purposes of this paragraph, a lease shall indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks shall display the name and identification number of the DBE.
- (D) A contractor may count toward its DBE requirement 60 percent of its expenditures for materials and supplies required to complete the contract and obtained from DBE regular dealer and 100 percent of such expenditures to a DBE manufacturer.
- (E) A contractor may count toward its DBE requirement the following expenditures to DBE firms that are not manufacturers or regular dealers:
  - (1) The fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, provided the fees or commissions are determined to be reasonable and not excessive as compared with fees and commissions customarily allowed for similar services.
  - (2) The fees or commissions charged for assistance in the procurement of the materials and supplies, or for 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 not from a manufacturer or regular dealer and provided the fees are determined to be reasonable and not excessive as compared with fees customarily allowed for similar services.

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

If the DBE participation submitted in the bid by the apparent lowest responsive bidder does not meet or exceed the DBE contract goal, the apparent lowest responsive bidder shall submit to the Department (State Bridge Management Engineer) documentation of its good faith efforts made to reach the contract goal. One complete set and one copy of this information shall be received in the office of the (State Bridge Management Engineer) no later than noon of the sixth calendar day following opening of bids. Where the information submitted includes repetitious solicitation letters it will be acceptable to submit a representative letter along with a distribution list of the firms that were solicited. Documentation of DBE quotations shall be a part of the good faith effort submittal as necessary to demonstrate compliance with the factors listed below which the Department considers in judging good faith efforts. This documentation may include written subcontractor quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

The following factors will be used to determine if the bidder has made adequate good faith effort:

- (A) Whether the bidder attended any pre-bid meetings that were scheduled by the Department to inform DBEs of subcontracting opportunities.
- (B) Whether the bidder provided solicitations through all reasonable and available means (e.g. advertising in newspapers owned and targeted to the Disadvantaged) at least 10 calendar days prior to bid opening. Whether the bidder provided written notice to all DBEs listed in the NCDOT Directory of Transportation Firms, within the Divisions and surrounding Divisions where the project is located, that specialize in the areas of work (as noted in the DBE Directory) that the bidder will be subletting.
- (C) Whether the bidder followed up initial solicitations of interests by contacting DBEs to determine with certainty whether they were interested. If a reasonable amount of DBEs within the targeted Divisions do not provide an intent to quote or no DBEs specialize in the subcontracted areas, the bidder shall notify DBEs outside of the targeted Divisions that specialize in the subcontracted areas, and contact the Director of Business and Opportunity Workforce Development to give notification of the bidder's inability to get DBE quotes.
- (D) Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the bidder might otherwise perform these work items with its own forces.
- (E) Whether the bidder provided interested DBEs with adequate and timely information about the plans, specifications and requirements of the contract.
- (F) Whether the bidder negotiated in good faith with interested DBEs without rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be noted in writing with a description as to why an agreement could not be reached.
- (G) Whether quotations were received from interested DBE firms but rejected as unacceptable without sound reasons why the quotations were considered unacceptable. The fact that the DBE firms quotation for the work is not the lowest quotation received will not in itself be considered as a sound reason for rejecting the quotation as unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered as sound reason for rejecting a DBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy contract goals.
- (H) Whether the bidder specifically negotiated with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be sublet includes potential for DBE participation.
- (I) Whether the bidder made any efforts and/or offered assistance to interested DBEs in obtaining the necessary equipment, supplies, materials, insurance, and/or bonding to satisfy the work requirements in the bid proposal.

- (J) Any other evidence that the bidder submits which show that the bidder has made reasonable good faith efforts to meet the contract goal.

If a bidder is the apparent lowest responsive bidder on more than one project within the same letting located in the same geographic area of the state, as a part of the good faith effort the Department will consider allowing the bidder to combine the DBE participation as long as the DBE overall goal value of the combined projects is achieved.

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 the Department that the contract goal can be met or that adequate good faith efforts have been made to meet the goal.

### **DBE Replacement**

The Contractor shall not terminate a committed DBE subcontractor for convenience or perform the work with its own forces or those of an affiliate. If the Contractor fails to demonstrate reasonable efforts to replace a committed DBE firm that does not perform as intended with another committed DBE firm or completes the work with its own forces without the Engineer's approval, the Contractor may be disqualified from further bidding for a period of up to 6 months.

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

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

When a DBE is terminated or fails to complete its work on the contract for any reason, the Contractor shall take all necessary, reasonable steps to replace the DBE subcontractor with another DBE subcontractor to perform at least the same amount of work as the DBE that was terminated. The Contractor is encouraged to first attempt to find another DBE firm to do the same work as the DBE that was being terminated.

To demonstrate necessary, reasonable good faith efforts, the Contractor shall document the steps they have taken to replace any DBE subcontractor who is unable to perform successfully with another DBE subcontractor. Such documentation shall include but not be limited to the following:

- (1) Copies of written notification to DBEs that their interest is solicited in subcontracting the work defaulted by the previous DBE subcontractor or in subcontracting other items of work in the contract.
- (2) Efforts to negotiate with DBEs for specific subbids including, at a minimum:
  - (a) The names, addresses, and telephone numbers of DBEs who were contacted.
  - (b) A description of the information provided to DBEs regarding the plans and specifications for portions of the work to be performed.

- (3) For each DBE contacted but rejected as unqualified, the reasons for the Contractor's conclusion.
- (4) Efforts made to assist the DBEs contacted, if needed, in obtaining bonding or insurance required by the Contractor.

**(B) Decertification Replacement**

- (1) When a committed DBE is decertified by the Department after a Request for Subcontract has been received by the Department, the Department will not require the Prime Contractor to solicit replacement DBE participation equal to the remaining work to be performed by the decertified firm. The participation equal to the remaining work performed by the decertified firm will count toward the contract requirement.
- (2) When a committed DBE is decertified prior to the Department receiving a Request for Subcontract for the named DBE firm, the Prime Contractor shall take all necessary and reasonable steps to replace the DBE subcontractor with another DBE subcontractor to perform at least the same amount of work to meet the contract goal or demonstrate that it has made a good faith effort to do so.

**Changes in the Work**

When the Engineer makes changes that result in the reduction or elimination of work to be performed by a committed DBE, the Contractor will not be required to seek additional participation. When the Engineer makes changes that result in additional work to be performed by a DBE based upon the Contractor's commitment, the DBE shall participate in additional work to the same extent as the DBE participated in the original contract work.

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

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

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

**Reports**

A Subcontract Approval Form shall be submitted for all work which is to be performed by a DBE subcontractor, both committed and non-committed subcontractors. The Department

reserves the right to require copies of actual subcontract agreements involving DBE subcontractors.

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

All certifications will be considered a part of the project records, and consequently will be subject to penalties under Federal Law associated with falsifications of records related to projects.

### **Reporting Disadvantaged Business Enterprise Participation**

- (A) The Contractor shall provide the Engineer with an accounting of payments made to Disadvantaged Business Enterprise firms, including material suppliers, 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:
  - (1) Withholding of money due in the next partial pay estimate; or
  - (2) Removal of an approved contractor from the prequalified bidders' list or the removal of other entities from the approved subcontractors list. (Municipality may add to, change or delete this section.)
- (B) The Contractor shall report the accounting of payments on the Department's DBE Subcontractor Payment Information Form DBE-IS, which is available at: <http://www.ncdot.org/doh/forms/files/DBE-IS.xls>. This shall be reported to the (Officer/Engineer).
- (C) Contractors reporting transportation services provided by non-DBE lessees shall evaluate the value of services provided during the month of the reporting period only.

Prior to payment of the final estimate, the Contractor shall furnish an accounting of total payment to each DBE. A responsible fiscal officer of the payee contractor, subcontractor, or second tier subcontractor who can attest to the date and amounts of the payments shall certify that the accounting is correct.

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

Because Federal Funding is being used to fund this project, 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.

Because Federal Funding is being used to fund this project, 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 working on any Federal or State project until the required information is submitted.

**Failure to Meet Contract Requirements**

Failure to meet contract requirements in accordance with Article 102-16(J) of the *Standard Specifications* may be cause to disqualify the Contractor.



**ITEMIZED PROPOSAL FOR PROJECT NO. 17BP.13.P.3**

The Contractor agrees to provide the services outlined in this proposal for the following fixed price:

Line No.	Item No.	Sec #	Description	Quantity	Unit Cost	Amount
1	0000100000-N	800	MOBILIZATION	LS	LS	
2	1519000000-E	610	ASPH CONC SURFACE COURSE, TYPE S9.5B	77 TON		
3	4405000000-N	1110	PORTABLE WORK ZONE SIGNS	496 SF		
4	4415000000-N	1115	FLASHING ARROW PANELS, TYPE C	2 EA		
5	4420000000-N	1120	CHANGEABLE MESSAGE SIGNS	2 EA		
6	4430000000-N	1130	DRUMS	350 EA		
7	4435000000-N	1135	CONES	50 EA		
8	4450000000-N	1150	FLAGGER (BY HOUR)	1540 HR		
9	4510000000-N	SP	LAW ENFORCEMENT	640 HR		
10	4590000000-N	SP	GENERIC TRAFFIC CONTROL ITEM LONGITUDINAL CHANNELING DEVICE(PLASTIC BARRIER)	1400 LF		
11	4810000000-E	1205	PAINT (4")	9820 LF		
12	4845000000-N	1205	PAINT MARKING SYMBOLS	16 EA		
13	4845000000-N	1205	POLYUREA LINES (4") Standard Glass Beads	2151 LF		
14	4847140000-E	1205	POLYUREA LINES (24") Standard Glass Beads	60 LF		
15	4905000000-N	1253	SNOWPLOWABLE RAISED PAVEMENT MARKERS	18 EA		
16	8161000000-E	420	GROOVING BRIDGE FLOORS	31893 SF		
17	8217000000-E	425	REINFORCING STEEL	100 LBS		
18	8664000000-E	SP	SHOTCRETE REPAIRS	82 CF		
19	8692000000-N	SP	EVAZOTE JOINT SEALS	LS		
20	8881000000-E	SP	LATEX MODIFIED CONC OVERLAY- VERY EARLY STRENGTH	146 CY		
21	8892000000-E	SP	GENERIC STRUCTURE ITEM - CLASS II CONCRETE DECK REPAIR FOR EPOXY ASHPALT OVERLAY	100 SF		
22	8892000000-E	SP	GENERIC STRUCTURE ITEM- PLACEMENT OF EPOXY OVERLAY	10775 SF		
23	8893000000-E	SP	GENERIC STRUCTURE ITEM - HYDRO- DEMOLITION OF BRIDGE DECK	3538 SY		
24	8893000000-E	SP	GENERIC STRUCTURE ITEM - PLACING& FINISHING LATEX MOD CONC OVERLAY- VERY EARLY STRENGTH	3538 SY		
25	8893000000-E	SP	GENERIC STRUCTURE ITEM - SCARIFYING BRIDGE DECK	4398 SY		



Contract No. \_\_\_\_\_

Rev. 4-19-11

County \_\_\_\_\_

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

**CORPORATION**

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

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

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

**SIGNATURE OF CONTRACTOR**

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

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

Attest \_\_\_\_\_

Secretary/Assistant Secretary  
*Select appropriate title*

By \_\_\_\_\_

President/Vice President/Assistant Vice President  
*Select appropriate title*

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

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

**CORPORATE SEAL**

**AFFIDAVIT MUST BE NOTARIZED**

Subscribed and sworn to before me this the

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

**NOTARY SEAL**

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

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

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

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

Contract No. \_\_\_\_\_

Rev. 4-19-11

County \_\_\_\_\_

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

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

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

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

**SIGNATURE OF CONTRACTOR**

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

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

\_\_\_\_\_ By \_\_\_\_\_  
Signature of Witness Signature of Partner

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

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

**AFFIDAVIT MUST BE NOTARIZED**

Subscribed and sworn to before me this the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_.

**NOTARY SEAL**

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

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

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

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

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

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

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

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

**SIGNATURE OF CONTRACTOR**

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

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

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

\_\_\_\_\_ Signature of Member/Manager/Authorized Agent  
*Select appropriate title*

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

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

**AFFIDAVIT MUST BE NOTARIZED**

Subscribed and sworn to before me this the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_.

**NOTARY SEAL**

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

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

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

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

**EXECUTION OF BID  
NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION  
JOINT VENTURE (2) or (3)**

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

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

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

**SIGNATURE OF CONTRACTOR**

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

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

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

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

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

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

*If Corporation, affix Corporate Seal* and

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

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

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

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

*If Corporation, affix Corporate Seal* and

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

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

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

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

*If Corporation, affix Corporate Seal*

**NOTARY SEAL**

*Affidavit must be notarized for Line (2)*

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

\_\_\_\_\_  
Signature of Notary Public  
of \_\_\_\_\_ County  
State of \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

**NOTARY SEAL**

*Affidavit must be notarized for Line (3)*

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

\_\_\_\_\_  
Signature of Notary Public  
of \_\_\_\_\_ County  
State of \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

**NOTARY SEAL**

*Affidavit must be notarized for Line (4)*

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

\_\_\_\_\_  
Signature of Notary Public  
of \_\_\_\_\_ County  
State of \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

Contract No. \_\_\_\_\_

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

**INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME**

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

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

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

**SIGNATURE OF CONTRACTOR**

Name of Contractor

\_\_\_\_\_ Individual name

Trading and doing business as

\_\_\_\_\_ Full name of Firm

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

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

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

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

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

**AFFIDAVIT MUST BE NOTARIZED**

Subscribed and sworn to before me this the

**NOTARY SEAL**

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

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

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

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

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

Contract No. \_\_\_\_\_

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County \_\_\_\_\_

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

**INDIVIDUAL DOING BUSINESS IN HIS OWN NAME**

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

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

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

**SIGNATURE OF CONTRACTOR**

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

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

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

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

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

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

**AFFIDAVIT MUST BE NOTARIZED**

Subscribed and sworn to before me this the \_\_\_\_\_  
\_\_\_\_\_ day of \_\_\_\_\_ 20\_\_.

**NOTARY SEAL**

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

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

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

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

## DEBARMENT CERTIFICATION

### Conditions for certification:

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

### DEBARMENT CERTIFICATION

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

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

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

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

Check here if an explanation is attached to this certification.

**SUBSTITUTE FORM W-9**  
**VENDOR REGISTRATION FORM**  
**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**

Pursuant to Internal Revenue Service (IRS) Regulations, vendors must furnish their Taxpayer Identification Number (TIN) to the State. If this number is not provided, you may be subject to a 20% withholding on each payment. To avoid this 20% withholding and to insure that accurate tax information is reported to the Internal Revenue Service and the State, please use this form to provide the requested information exactly as it appears on file with the IRS.

**INDIVIDUAL AND SOLE PROPRIETOR: ENTER NAME AS SHOWN ON SOCIAL SECURITY CARD**

CORPORATION OR PARTNERSHIP : ENTER YOUR LEGAL BUSINESS NAME

**NAME:** \_\_\_\_\_

**MAILING ADDRESS: STREET/PO BOX:** \_\_\_\_\_

**CITY, STATE, ZIP:** \_\_\_\_\_

**DBA / TRADE NAME (IF APPLICABLE):** \_\_\_\_\_

- INDIVIDUAL (use Social Security No.)       SOLE PROPRIETER (use SS No. or Fed ID No.)  
 CORPORATION (use Federal ID No.)       PARTNERSHIP (use Federal ID No.)  
 ESTATE/TRUST (use Federal ID no.)       STATE OR LOCAL GOVT. (use Federal ID No.)  
 OTHER / SPECIFY \_\_\_\_\_

**SOCIAL SECURITY NO.** \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ (Social Security #)

**OR**

**FED.EMPLOYER IDENTIFICATION NO.** \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ (Employer Identification #)

<b>COMPLETE THIS SECTION IF PAYMENTS ARE MADE TO AN ADDRESS OTHER THAN THE ONE LISTED ABOVE:</b>
<b>REMIT TO ADDRESS: STREET / PO BOX:</b> _____
<b>CITY, STATE, ZIP:</b> _____

<p>Participation in this section is voluntary. You are not required to complete this section to become a registered vendor. The information below will in no way affect the vendor registration process and its sole purpose is to collect statistical data on those vendors doing business with NCDOT. If you choose to participate, circle the answer that best fits your firm's group definition.</p> <p>What is your firm's ethnicity? (<input type="checkbox"/> Prefer Not To Answer, <input type="checkbox"/> African American, <input type="checkbox"/> Native American, <input type="checkbox"/> Caucasian American, <input type="checkbox"/> Asian American, <input type="checkbox"/> Hispanic American, <input type="checkbox"/> Asian-Indian _____ )</p> <p>What is your firm's gender? (<input type="checkbox"/> Prefer Not to Answer, <input type="checkbox"/> Male, <input type="checkbox"/> Female)      <b>Disabled-Owned Business?</b> (<input type="checkbox"/> Prefer Not to Answer, <input type="checkbox"/> Yes, <input type="checkbox"/> No)</p>
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**IRS Certification**

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification and I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the IRS that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and I am a U.S. person (including a U.S. resident alien).

The IRS does not require your consent to any provision of this document other than the certifications required to avoid backup withholding. For complete certification instructions please see IRS FORM W-9 at <http://www.irs.gov/pub/irs-pdf/fw9.pdf> .

\_\_\_\_\_  
**NAME (Print or Type)**

\_\_\_\_\_  
**TITLE (Print or Type)**

\_\_\_\_\_  
**SIGNATURE**

\_\_\_\_\_  
**DATE**

\_\_\_\_\_  
**PHONE NUMBER**