DATE: December 6, 2010

CONTRACTING AGENCY

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH, NORTH CAROLINA

Request For Proposals For:

Contract ID. : DO00092
WBS ELEMENT: 35565.3.1
TIP No. : B-3898

Bridge Replacement With

Prestressed Concrete Cored Slabs
Robeson County
Bridge Number 41

Proposals subject to the conditions made a part hereof will be received until 2:00 P.M., Thursday, January 20, 2011 and then publicly opened for furnishing the services as described herein.

Opening of proposals to be in the Conference Room (N. C. Department of Transportation, Bridge Management Unit), 4809 Beryl Road, Raleigh, N. C.

Send all proposals directly to the issuing agency:

N. C. DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT UNIT
4809 BERYL ROAD
RALEIGH, NORTH CAROLINA 27606

ATTENTION: DAN HOLDERMAN

NOTE: Please indicate project number, bridge number and opening date on the bottom left hand corner of your envelope.

NORTH CAROLINA PROFESSIONAL SEAL 34949 ENGINEER ZAKI H. WAFA

12-8-2010

TABLE OF CONTENTS

COVER SHEET	PAGE NO.
PREQUALIFYING TO BID	1
AVAILABILITY OF FUNDS	2
PREPARATION AND SUBMISSION OF BIDS	2-5
PROJECT SPECIAL PROVISIONS	6-11
GENERAL PROVISIONS	12-34
DISADVANTAGED BUSINESS ENTERPRISE	12-22
ROADWAY PROVISIONS	35-67
SEEDING AND MULCHING	68-75
STRUCTURE PROVISIONS	76-100
STANDARD SPECIAL PROVISION-ERRATA-	101-104
PLANT AND PEST QURANTINES	105
MINIMUM WAGES AND AWARD OF CONTRACT	106
ATTACHMENT A	107-111
GEOTECHNICAL ATTACHMENT 'B' (7)	112
ENVIRONMENTAL PERMIT ATTACHMENT 'C' (8)	113
UTILITY ATTACHMENT 'D' (8)	114
BID FORM	115-116
EXECUTION OF PROPOSAL	117
AWARD LIMITS ON MULTIPLE PROJECTS	118
EXECUTION OF CONTRACT **(NON-COLLUSION AFFIDAVIT AND DEBARMENT CERTIFICATION)**	119-122
BRIDGE LOCATION MAP	
PRE-BID CONFERENCE LOCATION MAP	

PRE-QUALIFYING TO BID

In order to qualify to bid on this contract, all prospective Bidders must attend the Pre-Bid Conference.

All prospective pre-qualified may obtain information and forms for pre-qualifying from:

Contractual Services Unit
State Contractual Services Engineer:
Greg Keel, 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.

PRE-BID CONFERENCE

All prospective Bidders shall attend a Pre-Bid Conference at the location indicated below. This Conference will be conducted by Department personnel for the purpose of providing additional information about the project and to give Bidders an opportunity to ask any questions they may have. Only bids received from Bidders who have attended and properly registered at the Pre-Bid Conference will be considered.

No questions concerning the project will be answered by any Department personnel at any time except at the Pre-Bid Conference.
he Pre-Bid Conference will not meet the requirements of proper registration unless the individual attending has registered at the Conference in accordance with the following:

1. The individual signs his or her name on the official roster;
2. The individual writes in the name and address of the company he or she represents; and
3. Only one company is shown as being represented by the individual attending.
4. The individual must be an officer or permanent employee of the firm they represent.

Bidders are to meet for the mandatory Pre-Bid Conference at 10:00 a.m. on Tuesday, December 21, 2010 in the Chief Engineer's conference room in the NCDOT Maintenance office building at 4809 Beryl Road which is directly across (south) from the NC State Fairgrounds in Raleigh, Wake County, North Carolina. (SEE PRE-BID LOCATION MAP)

SPECIAL PROVISION - GENERAL

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.

4. 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.

5. 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. If a corporation, the corporate seal shall be affixed. The bid execution shall be notarized by a notary public whose commission is in effect on the date of execution.

6. 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 to 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.

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

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 14 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
(This provision is not applicable if the contract amount is less than $300,000.)

(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 shall 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:

> "Bid for State Highway Project WBS Element 35565.3.1 for Bridge No. 41 in Robeson County."

on the outside of the envelope. 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
BRIDGE MANAGEMENT UNIT
4809 BERYL ROAD
RALEIGH, N. C. 27606

ATTENTION: DAN HOLDERMAN, PE

The outer envelope shall also bear the statement:

> "Bid for State Highway Project WBS Element 35565.3.1 for Bridge No. 41 in Robeson County."

If delivered in person, the sealed envelope shall be delivered to the office of North Carolina Department of Transportation, Bridge Management Unit, 4809 Beryl Road, Raleigh, NC (South of the NC State Fairgrounds, directly south from Dorton Arena). All bids shall be delivered prior to the time specified in the invitation to bid. Bids received after 2:00 p.m., Thursday, January 20, 2011 will not be accepted.

ROJECT SPECIAL PROVISIONS

GENERAL REQUIREMENTS

A. SCOPE OF WORK

This work shall consist of furnishing and installing precast prestressed concrete cored slabs, removal of the existing structure; clearing and grubbing; excavation and embankment; installation of guardrail; roadway base course and pavement; placement of substructure and superstructure; grading within limits of the project; placement of rip rap; temporary erosion control; seeding and mulching; and all other incidental items necessary to complete the project as specified and shown on the plans. The Department will be responsible for placement of final pavement markings.

Only the construction centerline, control points with a reference station and benchmark location shall be furnished by the Bridge Maintenance Unit on an initial one time basis. All other engineering, surveying, layout and measurements shall be the responsibility of the contractor.

B. LOCATION AND DESCRIPTION

The existing 24.0' clear roadway width bridge is consisting of 2 spans, 1@17'10" and 1@17'8", RC floor on timber joists on timber caps and piles, is located on SR-2115 across Jacobs Swamp, 1.6 mile east of junction NC72. This bridge shall be replaced by a cored slab bridge with approach slabs, consisting of two spans @ 40' each, cored slabs on steel pile foundation on a 90 degree skew and a 38'-10" clear roadway width with roadway approaches. (SEE BRIDGE LOCATION MAP)

C. CONTRACT TIME AND LIQUIDATED DAMAGES

The date of availability for this contract is the date the Contractor begins work but no later than March 15, 2011.

The completion date for this contract is one hundred and twenty (120) consecutive calendar days after and including the date of availability. 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/she shall notify the Engineer in writing at least thirty (30) days prior to the revised date

The liquidated damages for this contract time are Three Hundred Fifty Dollars ($350.00) per calendar day. After award of the project, the Contractor shall notify the Engineer of his expected date for beginning work. Should the Contractor desire revise this date, he shall notify the Engineer in writing at least thirty (30) days prior to the revised date.

D. 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.

Wherever reference is made in the Specifications to information shown in the plans, such information will be furnished by the Engineer.

E. 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 of cost of successfully performing the work.

F. 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, and as shown on the plans.

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

G. 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". However, the Engineer may reduce the frequency of sampling and testing where he deems it appropriate for the project under construction. All material must be approved by the Engineer prior to being used.

H. TRAFFIC CONTROL

The Contractor will be required to give the Engineer a minimum of two (2) weeks written notice before starting work. The Department will be responsible for erection and maintenance of all traffic control devices except for the traffic barricades at the immediate site which shall be erected by the Department and maintained by the Contractor. The Department will be responsible for striping and all pavement markings.

I. 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.

J. PROOF OF COVERAGE

Pursuant to N.C.G.S. § 97-19, all contractor/subcontractors of the Department Of Transportation are required to show proof of coverage issued by a workers' compensation insurance carrier, or a certificate of compliance issued by the Department of Insurance for self-insured contractor/subcontractors stating that it has complied with N.C.G.S. § 97-93 irrespective of whether contractor/subcontractors have regularly in service fewer than three employees in the same business within the State of North Carolina, and contractor/subcontractors shall be hereinafter liable under the Workers' Compensation Act for payment of compensation and other benefits to its employees for any injury or death due to an occupational disease or injury-by-accident arising out of and in the course and scope of performance of the work insured by the contractor or subcontractor. Proof is to be obtained prior to services beginning.

K. 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.

L. 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 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.

M. BASIS OF PAYMENT

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

N. WORK PROCEDURES AND ASSIGNMENTS

1. ENGINEER

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

After a purchase order is issued, the Engineer for this project shall be the Division Bridge Maintenance Engineer, Division of Highways, North Carolina Department of Transportation, acting directly or through his duly authorized representatives.

2. 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.

3. CONTRACTOR SUPERVISION

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

4. AVAILABILITY

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

O. 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.

P. 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.

Q. REMOVAL OF EXISTING STRUCTURE

The Contractor shall be responsible for complete removal of the existing Structure, except a portion of each of the existing abutments to remain in place as shown on the plans and as directed by the Engineer. The Contractor's attention is directed to Article 402-2 of the Standard Specifications.

R. UTILITY CONFLICTS

The Department will be responsible for the adjustment of any utility at the bridge site prior to the date of availability, except for the water main which shall be relocated by the contractor as per the plans and as directed by the Engineer. Refer to attachment "D" in this proposal.

S. ASPHALT CONCRETE TYPE SF9.50A and B25.0B

The quantity of Asphalt Concrete Types SF9.50A and B25.0B measured as provided in Sections 610 of the Standard Specification, including furnishing all materials and placement, shall be paid for at the contract unit price per ton for "Asphalt Concrete Surface Course Type SF9.50A" and "Asphalt Concrete Base Course, Type B25.0B". Asphalt Binder for Plant Mix shall be measured as provided in Section 620 of the Standard Specifications. Payment for Asphalt Binder for Plant Mix shall be paid for at the contract unit price per ton for "Asphalt Binder for Plant Mix, Type PG 64-22."

The above price and payment shall be full compensation for completing the item in place. No other separate measurement of payment will be made.

T. CLASS I RIP RAP

Placement of all rip rap shall be in accordance with the Specifications. Filter fabric used in conjunction with rip rap will be paid separately from the Contract unit price for Class II Rip Rap.

U. STEEL BM GUARDRAIL

Furnish all labor, equipment, materials and incidentals necessary to install guardrail as indicated on the plans, the Roadway Standard Drawings dated July 2006 and the Standard Specifications.

All work covered by this special provision shall be paid for at the unit bid price for "Steel BM Guardrail".

The cost of guardrail delineators and the concrete barrier rails delineators shall be included in the unit bid price for "Steel BM Guardrail."

GENERAL PROVISIONS

MINORITY BUSINESS ENTERPRISE AND WOMEN BUSINESS ENTERPRISE: (PO & MUNICIPALITIES)

(10-16-07) (12-21-10) SP1G68

Policy

It is the policy of the North Carolina Department of Transportation that Minority Business Enterprises (MBEs) and Women Business Enterprises (WBEs) as defined in *GS 136-28.4* shall have the equal opportunity to compete fairly for and to participate in the performance of contracts financed in whole or in part by State Funds.

Obligation

The Contractor, subcontractor, and sub-recipient shall not discriminate on the basis of race, religion, color, creed, national origin, sex, handicapping condition or age in the performance of this contract. The Contractor shall comply with applicable requirements of *GS 136-28.4* in the award and administration of state funded 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 MBE/WBE participation submitted by the prime contractor during the bidding process.

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

Department (DOT)- North Carolina Department of Transportation/State Bridge Management

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

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

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

MBE/WBE – This term is used for convenience only. Minority Business Enterprise and Women Business Enterprise are not interchangeable terms and the goals for either or both are not interchangeable.

Goal - The MBE/WBE participation specified herein

Letter of Intent – Written documentation of the bidder/offeror's commitment to use a MBE/WBE subcontractor and confirmation from the MBE/WBE 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 MBE/WBE 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.*

Contract Goal

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

(A) Minority Business Enterprises 2 %

(1) *If the goal is more than zero*, the Contractor shall exercise all necessary and reasonable steps to ensure that Minority Business Enterprises participate in at least the percent of the contract as set forth above as the goal.

(2) *If the goal is zero*, the Contractor shall continue to recruit the MBEs and report the use of MBEs during the construction of the project. A good faith effort will not be required with a zero goal.

(B) Women Business Enterprises 2 %

(1) *If the goal is more than zero*, the Contractor shall exercise all necessary and reasonable steps to ensure that Women Business Enterprises participate in at least the percent of the contract as set forth above as the goal.

(2) *If the goal is zero*, the Contractor shall continue to recruit the WBEs and report the use of WBEs during the construction of the project. A good faith effort will not be required with a zero goal.

Contract Requirement

The approved MBE/WBE 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 MBE/WBE 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 MBE/WBE Subcontractors in Contract

Only those MBE/WBE firms with current certification are acceptable for listing in the bidder's submittal of MBE/WBE 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 MBE/WBE 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 MBE/WBE participation for the contract. If the bidder has no MBE/WBE participation, he shall indicate this on the form "Listing of MBE/WBE 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 WBE/MBE 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 MBE/WBE 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 MBE/WBE subcontractors whose participation it submits to meet a contract goal and written confirmation from each MBE/WBE, 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 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 MBE/WBE listed in the proposal indicating their participation in the contract, the MBE/WBE participation will not count toward meeting the goal.

Counting MBE/WBE Participation Toward Meeting MBE/WBE Goal of Zero or More

(A) If a firm is determined to be an eligible MBE/WBE firm, the total dollar value of the participation by the MBE/WBE will be counted toward the contract requirement. The total dollar value of participation by a certified MBE/WBE will be based upon the value of work actually performed by the MBE/WBE and the actual payments to MBE/WBE firms by the Contractor.

(B) When a MBE/WBE performs as a participant in a joint venture, the Contractor may count toward its MBE/WBE goal a portion of the total value of participation with the MBE/WBE in the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the MBE/WBE performs with its forces.

(C) (1) The Contractor may count toward its MBE/WBE goal only expenditures to MBE/WBEs that perform a commercially useful function in the work of a contract. A MBE/WBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the MBE/WBE shall also be responsible with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material and installing (where applicable) and paying for the material itself. To determine whether a MBE/WBE is performing a commercially useful function, the Department will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the MBE/WBE credit claimed for its performance of the work, and other relevant factors.

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

(3) The following factors will be used to determine if a MBE/WBE trucking firm is performing a commercially useful function.

(a) The MBE/WBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there shall not be a contrived arrangement for the purpose of meeting MBE/WBE goals.

(b) The MBE/WBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.

(c) The MBE/WBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.

(d) The MBE/WBE may lease trucks from another MBE/WBE firm, including an owner-operator who is certified as a MBE/WBE. The MBE/WBE who leases trucks from another MBE/WBE receives credit for the total value of the transportation services the lessee MBE/WBE provides on the contract.

(e) The MBE/WBE may also lease trucks from a non-MBE/WBE firm, including from an owner-operator. The MBE/WBE who leases trucks from a non-MBE/WBE is entitled to credit for the total value of transportation services provided by non-MBE/WBE lessees not to exceed the value of transportation services provided by MBE/WBE-owned trucks on the contract. Additional participation by non-MBE/WBE 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 MBE/WBE and Contractor will not count towards the contract requirement.

(f) For purposes of this paragraph, a lease shall indicate that the MBE/WBE 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 MBE/WBE, so long as the lease

gives the MBE/WBE absolute priority for use of the leased truck. Leased trucks shall display the name and identification number of the MBE/WBE.

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

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

(1) The fees or commissions charged by a MBE/WBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, provided the fees or commissions are determined to be reasonable and not excessive as compared with fees and commissions customarily allowed for similar services.

(2) 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 MBE/WBE participation submitted in the bid by the apparent lowest responsive bidder does not meet or exceed the MBE/WBE contract goals, the apparent lowest responsive bidder shall submit to the **State Bridge Management Engineer** documentation of its good faith efforts made to reach each 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 MBE/WBE 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 MBE/WBEs 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 MBE/WBEs at least 10 calendar days prior to bid opening). Whether the bidder provided written notice to all MBE/WBEs 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 MBE/WBE Directory) that the bidder will be subletting.

(C) Whether the bidder followed up initial solicitations of interests by contacting MBE/WBEs to determine with certainty whether they were interested. If a reasonable amount of MBE/WBEs within the targeted Divisions do not provide an intent to quote or no MBE/WBEs specialize in the subcontracted areas, the bidder shall notify MBE/WBEs outside of the targeted Divisions that specialize in the subcontracted areas, and call the Director of Business and Opportunity Workforce Development Manager in the Office of Civil Rights to give notification of the bidder's inability to get MBE/WBE quotes.

(D) Whether the bidder selected portions of the work to be performed by MBE/WBEs 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 MBE/WBE participation, even when the bidder might otherwise perform these work items with its own forces.

(E) Whether the bidder provided interested MBE/WBEs with adequate and timely information about the plans, specifications and requirements of the contract.

(F) Whether the bidder negotiated in good faith with interested MBE/WBEs 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 MBE/WBE firms but rejected as unacceptable without sound reasons why the quotations were considered unacceptable.

(H) Whether the bidder specifically negotiated with subcontractors to assume part of the responsibility to meet the contract MBE/WBE goals when the work to be sublet includes potential for MBE/WBE participation.

(I) Whether the bidder made any efforts and/or offered assistance to interested MBE/WBEs 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 MBE participation as long as the MBE overall goal value of the combined projects is achieved.

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 WBE participation as long as the WBE 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.

MBE/WBE Replacement

The Contractor shall not terminate a committed MBE/WBE 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 MBE/WBE firm that does not perform as intended with another committed MBE/WBE 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 MBE/WBE.

(A) Performance Related Replacement

When a MBE/WBE 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 MBE/WBE subcontractor with another MBE/WBE subcontractor to perform at least the same amount of work as the MBE/WBE that was terminated. The Contractor is encouraged to first attempt to find another MBE/WBE firm to do the same work as the MBE/WBE that was being terminated.

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

(1) Copies of written notification to MBE/WBEs that their interest is solicited in subcontracting the work defaulted by the previous MBE/WBE subcontractor or in subcontracting other items of work in the contract.

(2) Efforts to negotiate with MBE/WBEs for specific subbids including, at a minimum:

(a) The names, addresses, and telephone numbers of MBE/WBEs who were contacted.

(b) A description of the information provided to MBE/WBEs regarding the plans and specifications for portions of the work to be performed.

(3) For each MBE/WBE contacted but rejected as unqualified, the reasons for the Contractor's conclusion.

(4) Efforts made to assist the MBE/WBEs contacted, if needed, in obtaining bonding or insurance required by the Contractor.

(B) Decertification Replacement

(1) When a committed MBE/WBE is decertified by the Department after a Request for Subcontract has been received by the Department, the Department will not require the Prime Contractor to solicit replacement MBE/WBE participation equal to the remaining work to be performed by the decertified firm. The participation equal to the remaining work performed by the decertified firm will count toward the contract requirement.

(2) When a committed MBE/WBE is decertified prior to the Department receiving a Request for Subcontract for the named MBE/WBE firm, the Prime Contractor shall take all necessary and reasonable steps to replace the MBE/WBE subcontractor with another MBE/WBE subcontractor to perform at least the same amount of work to meet the 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 MBE/WBE, the Contractor will not be required to seek additional participation. When the Engineer makes changes that result in additional work to be performed by a MBE/WBE based upon the Contractor's commitment, the MBE/WBE shall participate in additional work to the same extent as the MBE/WBE participated in the original contract work.

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

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

When the Contractor requests changes in the work that result in the reduction or elimination of work that the Contractor committed to be performed by a MBE/WBE, the Contractor shall

seek additional participation by MBE/WBEs equal to the reduced MBE/WBE participation caused by the changes.

Reports

A Subcontract Approval Form shall be submitted for all work which is to be performed by a MBE/WBE subcontractor, both committed and non-committed subcontractors. The Department reserves the right to require copies of actual subcontract agreements involving MBE/WBE subcontractors.

Within 30 (Enter No. of Days) calendar days of entering an agreement with a MBE/WBE 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 MBE/WBE credit.

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

Commitment

MBE/WBE firms submitted with the Letter of Intent to participate in the work shall be used unless otherwise approved by the Department. Provisions for replacement of MBE/WBE firms are included in this provision.

Reporting MBE/WBE Participation

(A) The Contractor shall provide the Engineer with an accounting of payments made to MBE/WBE 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 MBE/WBE 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-MBE/WBE 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 MBE/WBE. 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 MBE/WBEs, it shall be the prime contractor's responsibility to report all monthly and final payment information in the correct reporting manner.

Because NCDOT 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 on any NCDOT funded projects until the required information is submitted.

Because NCDOT 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 further working on any State or Federally funded projects 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.

PROGRESS SCHEDULE:
(12-18-07) SP1 G70

Revise the *2006 Specifications* as follows:

Page 1-72, Article 108-2 Progress Schedule, delete in its entirety and replace with the following:

The Contractor shall prepare and submit for review and approval a schedule of proposed working progress. This schedule shall be submitted on forms supplied by the Engineer or in a format that is approved by the Engineer. A detailed Critical Path Method (CPM) schedule shall not be submitted to replace the progress schedule details required below.

The proposed progress schedule shall be submitted no later than 7 days prior to the date of the project preconstruction conference and shall be approved before any payments will be processed for the project.

When the Engineer has extended the completion date or if the project overrun is anticipated to exceed 5%, the Contractor may submit a revised progress schedule to the Engineer for review and approval. If plan revisions are anticipated to change the sequence of operations in such a manner as will effect the progress but not the completion date, then the Contractor may submit a revised progress schedule for review and approval but the completion date shall remain unchanged.

The proposed progress schedule shall contain the following items:

(A) A time scale diagram with major work activities and milestone dates clearly labeled.

(B) A cash curve corresponding to the milestones and work activities established above.

(C) A written narrative that explains the sequence of work, the controlling operation(s), intermediate completion dates, milestones, project phasing, anticipated work schedule, and estimated resources. In addition, explain how permit requirements, submittal tracking, and coordination with subcontractors, utility companies and other entities will be performed.

Major work activities are defined as components comprising more than 5% of the total project cost or occupying more than 10% of total contract time and shall include, if applicable, the following:

Clearing and grubbing
Grading
Drainage
Soil stabilization
Aggregate base course
Pavement
Culverts
Bridges (including removal)
Signals, ITS, and lighting
Overhead signs

Major Milestones are derived from the project construction phasing and shall include, if applicable, the following:

Start of construction
Intermediate completion dates or times
Seasonal limitation/observation periods/moratoriums
Traffic shifts
Beginning and end of each traffic control phase or work area
Road openings
Completion date

LIABILITY INSURANCE:
(11-18-08) SP1 G80

Page 1-68, Article 107-16 is amended to include the following as the first, second, third and fourth paragraphs:

The Contractor shall be liable for any losses resulting from a breach of the terms of this contract. The Contractor shall be liable for any losses due to the negligence or willful misconduct of its agents, assigns and employees including any sub-contractors which causes damage to others for which the Department is found liable under the Torts Claims Act, or in the General Courts of Justice, provided the Department provides prompt notice to the Contractor and that the Contractor has an opportunity to defend against such claims. The Contractor shall not be responsible for punitive damages.

The Contractor shall at its sole cost and expense obtain and furnish to the Department an original standard ACORD form certificate of insurance evidencing commercial general liability with a limit for bodily injury and property damage in the amount of $5,000,000.00 per occurrence and general aggregate, covering the Contractor from claims or damages for bodily injury, personal injury, or for property damages which may arise from operating under the contract by the employees and agents of the Contractor. The required limit of insurance may be obtained by a single general liability policy or the combination of a general liability and excess liability or umbrella policy. The State of North Carolina shall be named as an additional insured on this commercial general liability policy. The policy may contain the

following language as relates to the State as an additional insured: "This insurance with respect to the additional insured applies only to the extent that the additional insured is held liable for your or your agent's acts or omissions arising out of and in the course of operations performed for the additional insured."

The Contractor shall maintain all legally required insurance coverage, including without limitation, worker's compensation and vehicle liability, in the amounts required by law. Providing and maintaining adequate insurance coverage is a material obligation of the contractor and is of the essence of this contract. All such insurance shall meet all laws of the State of North Carolina. Such insurance coverage shall be obtained from companies that are authorized to provide such coverage and that are authorized by the Commissioner of Insurance to do business in North Carolina. The Contractor shall at all times comply with the terms of such insurance policies.

Upon execution of the contract, provide evidence of the above insurance requirements to the Engineer.

SUBMISSION OF BIDS - ALTERNATES:
(7-15-08) SP1 G91

The *2006 Standard Specifications* are revised as follows:

Page 1-19, Subarticle 102-8(B)(2) is revised to delete the word "not".

Page 1-27, Subarticle 103-2(B)(4) Electronic Bids, delete and replace with the following:

Do not enter zero (0) in any unit price field unless zero is the intended bid for that item. Zero will be considered a valid bid. However, where zeros are entered for items that are authorized alternates to those items for which a non-zero bid price has been submitted, zeros will be deemed invalid.

Page 1-27, Subarticle 103-2(B)(5) Electronic Bids, delete and replace with the following:

(5) When the proposal allows alternate bids, the bidder shall submit a unit or lump sum price for every item in the proposal other than items that are authorized alternates to those items for which a bid price has been submitted. Where the bidder submits a unit price other than zero for all items of an authorized alternate, the Department will determine the lowest total price based on the alternates(s) bid.

DOMESTIC STEEL AND IRON PRODUCTS (Buy America):

SP1 G97

All steel and iron products which are permanently incorporated into this project shall be produced in the United States except minimal amounts of foreign steel and iron products may be used provided the combined project cost of the bid items involved does not exceed one-tenth of one percent (0.1 percent) of the total amount bid for the entire project or $2,500.00, whichever is greater. This minimal amount of foreign produced steel and iron products permitted for use by this Special Provision is not applicable to fasteners. Domestically produced fasteners are required for this project.

All steel and iron products furnished as "domestic products" shall be melted, cast, formed, shaped, drawn, extruded, forged, fabricated, produced, or otherwise processed and manufactured in the United States. Raw materials including pig iron and processed pelletized and reduced iron ore used in manufacturing "domestic" steel products may be imported; however, all manufacturing processes to produce the products, including coatings, must occur in the United States.

Before each steel or iron product is incorporated into this project or included for partial payment on a monthly estimate, the Contractor shall furnish the Resident Engineer a notarized certification certifying that the product conforms to the above requirements of this Special Provision. The Resident Engineer will forward a copy of each certification to the Materials and Tests Unit.

Each purchase order issued by the Contractor or a subcontractor for steel and iron products to be permanently incorporated into this project shall contain in bold print a statement advising the supplier that all manufacturing processes to produce the steel or iron shall have occurred in the United States. The Contractor and all affected subcontractors shall maintain a separate file for steel products permanently incorporated into this project so that verification of the Contractor's efforts to purchase "domestic" steel and iron products can readily be verified by an authorized representative of the Department or the Federal Highway Administration.

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.

LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC
(12-19-06) (Rev. 3-16-2010) SP 1 G151

Revise the 2006 Standard Specifications as follows:

Page 1-60, 107-2 Assignment of Claims Void, replace the reference from *G.S. 143-3.3* to ***G.S. 143B-426.40A***.

Page 1-69, 107-18 Contractor's Responsibility for Work, in the first paragraph, last sentence, replace the word *legally* with the word ***contractually***.

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.

EROSION & SEDIMENT CONTROL/STORMWATER CERTIFICATION:
1-16-07 (Rev 11-16-10) SP1 G180

General

Schedule and conduct construction activities in a manner that will minimize soil erosion and the resulting sedimentation and turbidity of surface waters. Comply with the requirements herein regardless of whether or not a National Pollution discharge Elimination System (NPDES) permit for the work is required.

Establish a chain of responsibility for operations and subcontractors' operations to ensure that the *Erosion and Sediment Control/Stormwater Pollution Prevention Plan* is implemented and maintained over the life of the contract.

(A) *Certified Supervisor* – Provide a certified Erosion and Sediment Control/Stormwater Supervisor to manage the Contractor and subcontractor operations, insure compliance with Federal, State and Local ordinances and regulations, and manage the Quality Control Program.

(B) *Certified Foreman* – Provide a certified, trained foreman for each construction operation that increases the potential for soil erosion or the possible sedimentation and turbidity of surface waters.

(C) *Certified Installer* – Provide a certified installer to install or direct the installation for erosion or sediment/stormwater control practices.

(D) *Certified Designer* – Provide a certified designer for the design of the erosion and sediment control/stormwater component of reclamation plans and, if applicable, for the design of the project erosion and sediment control/stormwater plan.

Roles and Responsibilities

(A) *Certified Erosion and Sediment Control/Stormwater Supervisor* – The Certified Supervisor shall be Level II and responsible for ensuring the erosion and sediment control/stormwater plan is adequately implemented and maintained on the project and for conducting the quality control program. The Certified Supervisor shall be on the project within 24 hours notice from initial exposure of an erodible surface to the project's final acceptance. Perform the following duties:

(1) Manage Operations – Coordinate and schedule the work of subcontractors so that erosion and sediment control/stormwater measures are fully executed for each operation and in a timely manner over the duration of the contract.

(a) Oversee the work of subcontractors so that appropriate erosion and sediment control/stormwater preventive measures are conformed to at each stage of the work.
(b) Prepare the required National Pollutant Discharge Elimination System (NPDES) Inspection Record and submit to the Engineer.
(c) Attend all weekly or monthly construction meetings to discuss the findings of the NPDES inspection and other related issues.
(d) Implement the erosion and sediment control/stormwater site plans requested.
(e) Provide any needed erosion and sediment control/stormwater practices for the Contractor's temporary work not shown on the plans, such as, but not limited to work platforms, temporary construction, pumping operations, plant and storage yards, and cofferdams.
(f) Acquire applicable permits and comply with requirements for borrow pits, dewatering, and any temporary work conducted by the Contractor in jurisdictional areas.
(g) Conduct all erosion and sediment control/stormwater work in a timely and workmanlike manner.
(h) Fully perform and install erosion and sediment control/stormwater work prior to any suspension of the work.
(i) Coordinate with Department, Federal, State and Local Regulatory agencies on resolution of erosion and sediment control/stormwater issues due to the Contractor's operations.
(j) Ensure that proper cleanup occurs from vehicle tracking on paved surfaces or any location where sediment leaves the Right-of-Way.
(k) Have available a set of erosion and sediment control/stormwater plans that are initialed and include the installation date of Best Management

Practices. These practices shall include temporary and permanent groundcover and be properly updated to reflect necessary plan and field changes for use and review by Department personnel as well as regulatory agencies.

(2) Requirements set forth under the NPDES Permit – The Department's NPDES Stormwater permit (NCS000250) outlines certain objectives and management measures pertaining to construction activities. The permit references *NCG010000, General Permit to Discharge Stormwater* under the NPDES, and states that the Department shall incorporate the applicable requirements into its delegated Erosion and Sediment Control Program for construction activities disturbing one or more acres of land. The Department further incorporates these requirements on all contracted bridge and culvert work at jurisdictional waters, regardless of size. Some of the requirements are, but are not limited to:

(a) Control project site waste to prevent contamination of surface or ground waters of the state, i.e. from equipment operation/maintenance, construction materials, concrete washout, chemicals, litter, fuels, lubricants, coolants, hydraulic fluids, any other petroleum products, and sanitary waste.

(b) Inspect erosion and sediment control/stormwater devices and stormwater discharge outfalls at least once every 7 calendar days, twice weekly for construction related *Federal Clean Water Act, Section 303(d)* impaired streams with turbidity violations, and within 24 hours after a significant rainfall event of 0.5 inch that occurs within a 24 hour period.

(c) Maintain an onsite rain gauge or use the Department's Multi-Sensor Precipitation Estimate website to maintain a daily record of rainfall amounts and dates.

(d) Maintain erosion and sediment control/stormwater inspection records for review by Department and Regulatory personnel upon request.

(e) Implement approved reclamation plans on all borrow pits, waste sites and staging areas.

(f) Maintain a log of turbidity test results as outlined in the Department's Procedure for Monitoring Borrow Pit Discharge.

(g) Provide secondary containment for bulk storage of liquid materials.

(h) Provide training for employees concerning general erosion and sediment control/stormwater awareness, the Department's NPDES Stormwater Permit NCS000250 requirements, and the applicable requirements of the *General Permit, NCG010000.*

(i) Report violations of the NPDES permit to the Engineer immediately who will notify the Division of Water Quality Regional Office within 24 hours of becoming aware of the violation.

(3) Quality Control Program – Maintain a quality control program to control erosion, prevent sedimentation and follow provisions/conditions of permits. The quality control program shall:

(a) Follow permit requirements related to the Contractor and subcontractors' construction activities.
(b) Ensure that all operators and subcontractors on site have the proper erosion and sediment control/stormwater certification.
(c) Notify the Engineer when the required certified erosion and sediment control/stormwater personnel are not available on the job site when needed.
(d) Conduct the inspections required by the NPDES permit.
(e) Take corrective actions in the proper timeframe as required by the NPDES permit for problem areas identified during the NPDES inspections.
(f) Incorporate erosion control into the work in a timely manner and stabilize disturbed areas with mulch/seed or vegetative cover on a section-by-section basis.
(g) Use flocculants approved by state regulatory authorities where appropriate and where required for turbidity and sedimentation reduction.
(h) Ensure proper installation and maintenance of temporary erosion and sediment control devices.
(i) Remove temporary erosion or sediment control devices when they are no longer necessary as agreed upon by the Engineer.
(j) The Contractor's quality control and inspection procedures shall be subject to review by the Engineer. Maintain NPDES inspection records and make records available at all times for verification by the Engineer.

(B) *Certified Foreman* – At least one Certified Foreman shall be onsite for each type of work listed herein during the respective construction activities to control erosion, prevent sedimentation and follow permit provisions:

(1) Foreman in charge of grading activities
(2) Foreman in charge of bridge or culvert construction over jurisdictional areas
(3) Foreman in charge of utility activities

The Contractor may request to use the same person as the Level II Supervisor and Level II Foreman. This person shall be onsite whenever construction activities as described above are taking place. This request shall be approved by the Engineer prior to work beginning.

The Contractor may request to name a single Level II Foreman to oversee multiple construction activities on small bridge or culvert replacement projects. This request shall be approved by the Engineer prior to work beginning.

(C) *Certified Installers* – Provide at least one onsite, Level I Certified Installer for each of the following erosion and sediment control/stormwater crew:

(1) Seeding and Mulching
(2) Temporary Seeding
(3) Temporary Mulching
(4) Sodding
(5) Silt fence or other perimeter erosion/sediment control device installations
(6) Erosion control blanket installation
(7) Hydraulic tackifier installation
(8) Turbidity curtain installation
(9) Rock ditch check/sediment dam installation
(10) Ditch liner/matting installation
(11) Inlet protection
(12) Riprap placement
(13) Stormwater BMP installations (such as but not limited to level spreaders, retention/detention devices)
(14) Pipe installations within jurisdictional areas

If a Level I *Certified Installer* is not onsite, the Contractor may substitute a Level II Foreman for a Level I Installer, provided the Level II Foreman is not tasked to another crew requiring Level II Foreman oversight.

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

Preconstruction Meeting

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

Ethical Responsibility

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

Revocation or Suspension of Certification

Upon recommendation of the Chief Engineer – Operations to the certification entity, certification for *Supervisor*, *Certified Foremen*, *Certified Installers* and *Certified Designer* may be revoked or suspended with the issuance of an *Immediate Corrective Action (ICA),*

Notice of Violation (NOV), or *Cease and Desist Order* for erosion and sediment control/stormwater related issues.

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

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

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

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

Chief Engineer – Operations
1537 Mail Service Center
Raleigh, NC 27699-1537

Failure to appeal within 10 calendar days will result in the proposed adverse action becoming effective on the date specified on the certified notice. Failure to appeal within the time specified will result in a waiver of all future appeal rights regarding the adverse action taken. The certificant will not be allowed to perform duties associated with the certification during the appeal process.

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

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

Measurement and Payment

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

PAYOUT SCHEDULE:
1-19-10 SP1G185

Submit an Anticipated Monthly Payout Schedule prior to beginning construction. The Anticipated Monthly Payout Schedule will be used by the Department to monitor funding levels for this project. Include a monthly percentage breakdown (in terms of the total contract amount) of the work anticipated to be completed. The schedule should begin with the date the Contractor plans to begin construction and end with the anticipated completion date. Submit updates of the Anticipated Monthly Payout Schedule on March 15, June 15, September 15, and December 15 of each calendar year until project acceptance. Submit the original Anticipated Monthly Payout Schedule and all subsequent updates to the Resident Engineer with a copy to the State Construction Engineer at 1 South Wilmington Street, 1543 Mail Service Center, Raleigh, NC 27699-1543.

ROADWAY PROVISIONS

CLEARING AND GRUBBING

Clearing and grubbing at the site shall have been performed in accordance with Article 200-3, 200-4 and 200-5 of the Standard Specifications. Perform clearing on this project to the limits established by Method "II" shown on Standard No. 200.02 of the *Roadway Standard Drawings*.

Payment for "Clearing and Grubbing" will be included at the lump sum bid price For "Grading". This price shall be full compensation for all materials, tools, equipment, labor, and for all incidentals necessary to complete the work.

LUMP SUM GRADING

(8-17-10) SP2 R16

Lump sum grading shall be performed in accordance with Section 226 Comprehensive Grading of the *2006 Standard Specifications* except as follows:

Delete all references to [Fill-in from choices below]_____.

Section 200, Clearing and Grubbing

Section 225, Unclassified Excavation

Section 230, Borrow Excavation

Section 250, Removal of Existing Asphalt Pavement

Section 250, Removal of Existing Concrete Pavement

Section 250, Breaking of Existing Asphalt Pavement

Section 250, Breaking of Existing Concrete Pavement

Section 500, Fine Grading

Section 560, Shoulder Borrow

INSTRUCTIONS

This provision should be used only when *Item 0063 Lump Sum Grading* is included in estimate. In addition, one or more of the following Items will also be included in estimate:

0001 - Clearing and Grubbing
0022 - Unclassified Excavation
0106 - Borrow Excavation
0156 - Removal of Existing Asphalt Pavement
0163 - Removal of Existing Concrete Pavement
0177 - Breaking of Existing Asphalt Pavement
0185 - Breaking of Existing Concrete Pavement
1011 - Fine Grading
1231 - Shoulder Borrow

Does NOT apply to *Item 0043 Lump Sum Grading*.

BURNING RESTRICTIONS:
(7-1-95) SP2 R05

Open burning is not permitted on any portion of the right-of-way limits established for this project. Do not burn the clearing, grubbing or demolition debris designated for disposal and generated from the project at locations within the project limits, off the project limits or at any waste or borrow sites in this county. Dispose of the clearing, grubbing and demolition debris by means other than burning, according to state or local rules and regulations.

EMBANKMENTS:
(5-16-06) (Rev 10-19-10) SP2R18

Revise the *Standard Specifications* as follows:

Page 2-22, Article 235-3 MATERIALS, amend as follows:

Add the following as the second sentence of the first paragraph:

> Do not use material meeting the requirements of AASHTO M145 for soil classification A-2-5 and A-5 with a plasticity index (PI) of less than 8 within 12" of the subgrade.

Add the following as the second sentence of the second paragraph:

> Aerate and dry material containing moisture content in excess of what is required to achieve embankment stability and specified density.

Page 2-22, Subarticle 235-4(B) Embankment Formation, add the following:

(16) Do not place rock or broken pavement in embankment areas where piles or drilled shaft foundations are to be constructed. This shall include but not be limited to piles and foundations for structures, metal signal poles, overhead sign structures, and high mount lighting.

SHOULDER AND FILL SLOPE MATERIAL:
(5-21-02) SP2 R45 A

Description

Perform the required shoulder and slope construction for this project in accordance with the applicable requirements of Section 226 of the *2006 Standard Specifications* except as follows:

Construct the top 6 inches of shoulder and fill slopes with soils capable of supporting vegetation.

Provide soil with a P.I. greater than 6 and less than 25 and with a pH ranging from 5.5 to 6.8. Remove stones and other foreign material 2 inches or larger in diameter. All soil is subject to test and acceptance or rejection by the Engineer.

Obtain material from within the project limits or approved borrow source.

Measurement and Payment

No direct payment will be made for this work, as the cost of this work will be considered to be a part of the work being paid for at the contract lump sum price for *Grading*.

BRIDGE APPROACH FILLS:

(10-19-10) SP4 R01

Description

Construct bridge approach fills in accordance with the contract. Bridge approach fills include bridge approach fills for sub regional tier bridges and reinforced bridge approach fills. Geotextiles include engineering fabrics and geomembranes.

Materials

Refer to Division 10 of the *Standard Specifications*:

Item	Section
Portland Cement Concrete, Class B	1000
Select Material	1016
Subsurface Drainage Materials	1044
Engineering Fabrics	1056

Use Class III or V Select Material for reinforced approach fills and only Class V Select Material (standard size no. 78M stone) for bridge approach fills for sub regional tier bridges. Provide polyvinyl chloride (PVC) plastic drainage pipes, fittings and outlet pipes for subsurface drainage materials for all bridge approach fills. For bridge approach fills for sub regional tier bridges, use Type 1 Engineering Fabric for filter fabric to encase no. 78M stone. For reinforced bridge approach fills, use Type 5 Engineering Fabric for woven fabrics and Type 2 Engineering Fabric and no. 78M stone for drains.

Load, transport, unload and store geomembranes such that they are kept clean and free of damage. Geomembranes with defects, flaws, deterioration or damage will be rejected. Do not unwrap geomembranes until just before installation and do not leave geomembranes exposed for more than 7 days before covering geomembranes with woven fabrics.

Use either polyvinyl chloride (PVC), high density polyethylene (HDPE) or linear low density polyethylene (LLDPE) geomembranes. For PVC geomembranes, provide grade PVC30 geomembranes meeting the requirements of ASTM D7176. For HDPE and LLDPE geomembranes, use geomembranes with a nominal thickness of 30 mils meeting the requirements of Geosynthetic Research Institute Standard Specifications GM13 or GM17, respectively.

Construction Methods

Excavate as necessary for bridge approach fills in accordance with the contract. Notify the Engineer when foundation excavation is complete. Do not place geomembranes or filter fabrics until obtaining approval of the excavation depth and foundation material.

Attach geomembranes or filter fabrics to back of end bent caps and wing walls with adhesives, tapes or other approved methods. Use wire staples as needed to hold filter fabrics

in place until covered. Overlap adjacent fabrics a minimum of 18" such that overlaps are parallel to the roadway centerline. Glue or weld geomembrane seams to prevent leakage. Contact the Engineer when existing or future structures such as foundations, pavements, pipes, inlets or utilities will interfere with geotextiles.

For reinforced bridge approach fills, place woven fabrics within 2" of locations shown on the plans and in slight tension free of kinks, folds, wrinkles or creases. Place first layer of woven fabric directly on geomembranes with no void or material in between. Install woven fabrics with the machine direction (MD) parallel to the roadway centerline. The MD is the direction of the length or long dimension of the roll. Do not splice or overlap woven fabrics in the MD such that splices or overlaps are perpendicular to the roadway centerline. Install woven

fabrics with the orientation, dimensions and number of layers shown on the plans. Wrap woven fabrics as shown on the plans or as directed by the Engineer.

For reinforced bridge approach fills, construct 1 ft by 1 ft drains consisting of 4" diameter perforated PVC pipes surrounded by no. 78M stone wrapped in type 2 fabric. For bridge approach fills for sub regional tier bridges, install 4" diameter perforated PVC drainage pipes as shown on the plans.

Firmly connect PVC pipes together as needed. Connect perforated pipes to outlet pipes near the back faces of wing walls. Provide drains with positive drainage towards outlets. Place pipe sleeves in or under wing walls for outlet pipes such that positive drainage is maintained. Use sleeves of sufficient strength to withstand wing wall loads.

Place select material in 8 to 10 inch thick lifts. Compact Class III Select Material in accordance with Subarticle 235-4(C) of the *Standard Specifications*. Do not displace or damage fabrics or drains when placing and compacting select material. End dumping directly on fabrics and drains is not permitted. Do not operate heavy equipment on woven fabrics or drains until they are covered with at least 8" of select material. Replace any damaged fabrics and drains to the satisfaction of the Engineer.

Use only hand operated compaction equipment for bridge approach fills for sub regional tier bridges and within 3 ft of end bent cap back or wing walls for reinforced bridge approach fills. At a distance greater than 3 ft for reinforced bridge approach fills, compact select material with at least 4 passes of an 8 – 10 ton vibratory roller. Smooth wheeled or rubber tired rollers are also acceptable for compacting select material. Do not use sheepsfoot, grid rollers or other types of compaction equipment with feet.

Use solvent cement for connecting outlet pipes and fittings such as wyes, tees and elbows. Provide connectors for outlet pipes and fittings that are watertight and suitable for gravity flow conditions. Cover open ends of outlet pipes with rodent screens as shown on the plans.

Connect drains to concrete pads or existing drainage structures at ends of outlet pipes as directed by the Engineer. Construct concrete pads and provide an Ordinary Surface Finish in accordance with Subarticle 825-6(B) of the *Standard Specifications*.

Measurement and Payment

Reinforced Bridge Approach Fill, Station _____ will be paid at the contract lump sum price. Such price and payment will be full compensation for all reinforced bridge approach fills at each bridge for excavating and furnishing, transporting and placing geotextiles, select material, drains, pipe sleeves and concrete pads, compacting select material, connecting pipes to existing drainage structures and providing any labor, tools, equipment and materials to complete the work.

Bridge Approach Fill – Sub Regional Tier, Station _____ will be paid at the contract lump sum price. Such price and payment will be full compensation for all bridge approach fills at each sub regional tier bridge for excavating and furnishing, transporting and placing filter

fabrics, no. 78M stone, drainage pipes, pipe sleeves and concrete pads, compacting no. 78M stone, connecting pipes to existing drainage structures and providing any labor, tools, equipment and materials to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Reinforced Bridge Approach Fill, Station _____	Lump Sum
Bridge Approach Fill – Sub Regional Tier, Station _____	Lump Sum

FINE GRADING SUBGRADE, SHOULDERS AND DITCHES:
(7-21-09) SP5R01

Revise the *Standard Specifications* as follows:

Page 5-1, Article 500-1 Description, replace the first sentence with the following:

Perform the work covered by this section including but not limited to preparing, grading, shaping, manipulating moisture content, and compacting either an unstabilized or stabilized roadbed to a condition suitable for placement of base course, pavement, and shoulders.

ASPHALT PAVEMENTS - SUPERPAVE:
(7-18-06) (Rev 11-16-10) SP6R01

Revise the *2006 Standard Specifications* as follows:

Page 6-2, Article 600-9 Measurement and Payment, delete the second paragraph.

Page 6-12, Subarticle 609-5(C)(2), Required Sampling and Testing Frequencies, first partial paragraph at the top of the page, delete last sentence and replace with the following:

If the Engineer allows the mix to remain in place, payment will be made in accordance with Article 105-3.

Page 6-12, Subarticle 609-5(C)(2), Quality Control Minimum Sampling and Testing Schedule, first paragraph, delete and replace with the following:

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

Second paragraph, delete the fourth sentence and replace with the following:

When daily production of each mix design exceeds 100 tons and a regularly scheduled full test series random sample location for that mix design does not occur during that day's

production, perform at least one partial test series consisting of Items A and B in the schedule below.

Page 6-12, Subarticle 609-5(C)(2)(c) Maximum Specific Gravity, add after (AASHTO T 209):

or ASTM D 2041

Page 6-13, last line and on page and Page 6-14, Subarticle 609-5(C)(2)(e) Tensile Strength Ratio (TSR), add a heading before the first paragraph as follows:

(i) Option 1

Insert the following immediately after the first paragraph:

(ii) Option 2

Mix sampled from truck at plant with one set of specimens prepared by the Contractor and then tested jointly by QA and QC at a mutually agreed upon lab site within the first 7 calendar days after beginning production of each new mix design.

Second paragraph, delete and replace with the following:

Test all TSR specimens required by either option noted above on either a recording test press or a test press that maintains the peak load reading after the specimen has broken.

Subarticle 609-5(C)(3) Control Charts, delete the second sentence of the first paragraph and replace with the following:

For mix incorporated into the project, record full test series data from all regularly scheduled random samples or directed samples that replace regularly scheduled random samples, on control charts the same day the test results are obtained.

Page 6-15, Subarticle 609-5(C)(3) Control Charts, first paragraph on this page, delete the last sentence and substitute the following:

Denote the moving average control limits with a dash green line and the individual test limits with a dash red line.

Page 6-15, Subarticle 609-5(C)(3)(a), (b) and (c), replace (a) (b) and (c) with the following:

(a) A change in the binder percentage, aggregate blend, or G_{mm} is made on the JMF, or,

(b) When the Contractor elects to stop or is required to stop production after one or two moving average values, respectively, fall outside the moving average limits as outlined in Subarticle 609-5(C)(6) or,

(c) If failure to stop production after two consecutive moving averages exceed the moving average limits occurs, but production does stop at a subsequent time, re-establish a new moving average beginning at the actual production stop point.

Page 6-15, Subarticle 609-5(C)(4) Control Limits, replace the first paragraph and the CONTROL LIMITS Table on page 6-16 with the following:

The following are established as control limits for mix production. Apply the individual limits to the individual test results. Control limits for the moving average limits are based on a moving average of the last 4 data points. Apply all control limits to the applicable target source.

CONTROL LIMITS

Mix Control Criteria	Target Source	Moving Average Limit	Individual Limit
2.36 mm Sieve	JMF	±4.0 %	±8.0 %
0.075 mm Sieve	JMF	±1.5 %	±2.5 %
Binder Content	JMF	±0.3 %	±0.7 %
VTM @ N_{des}	JMF	±1.0 %	±2.0 %
VMA @ N_{des}	Min. Spec. Limit	Min Spec. Limit	-1.0%
$P_{0.075}$/ P_{be} Ratio	1.0	±0.4	±0.8
%G_{mm} @ N_{ini}	Max. Spec. Limit	N/A	+2.0%
TSR	Min. Spec. Limit	N/A	- 15%

Page 6-16, Subarticle 609-5(C)(5) Warning Bands, delete this subarticle in its entirety.

Pages 6-16 through 6-19, Subarticle 609-5(C)(6), delete the word "warning" and replace with the words "moving average".

Page 6-16, Subarticle 609-5(C)(6) Corrective Actions, first paragraph, first sentence, delete and replace with the following:

Immediately notify the Engineer when moving averages exceed the moving average limits.

Page 6-17, Subarticle 609-5(C)(6) Corrective Actions, delete the third full paragraph and replace with the following:

Failure to stop production when required due to an individual mix test not meeting the specified requirements will subject all mix from the stop point tonnage to the point when the next individual test is back on or within the moving average limits, or to the tonnage point when production is actually stopped, whichever occurs first, to being considered unacceptable.

Sixth full paragraph, delete the first, second, and third sentence and replace with the following:

Immediately notify the Engineer when any moving average value exceeds the moving average limit. If two consecutive moving average values for any one of the mix control criteria fall outside the moving average limits, cease production of that mix, immediately notify the Engineer of the stoppage, and make adjustments. The Contractor may elect to stop production after only one moving average value falls outside the moving average limits.

Page 6-18, Subarticle 609-5(C)(6) Corrective Actions, second full paragraph, delete and replace with the following:

If the process adjustment improves the property in question such that the moving average after four additional tests is on or within the moving average limits, the Contractor may continue production with no reduction in payment.

Page 6-18, Subarticle 609-5(C)(6) Corrective Actions, delete the third and fourth full paragraphs, including the Table for Payment for Mix Produced in the Warning Bands and substitute the following:

If the adjustment does not improve the property in question such that the moving average after four additional individual tests is outside the moving average limits, the mix will be evaluated for acceptance in accordance with Article 105-3. Reduced payment for or removal of the mix in question will be applied starting from the plant sample tonnage at the stop point to the sample tonnage when the moving average is on or within the moving average limits. In addition, any mix that is obviously unacceptable will be rejected for use in the work.

Page 6-19, Subarticle 609-5(C)(6) Corrective Actions, first paragraph, delete and replace with the following:

Failure to stop production and make adjustments when required due to two consecutive moving average values falling outside the moving average limits will subject all mix produced from the stop point tonnage to the tonnage point when the moving average is back on or within the moving average limits or to the tonnage point when production is actually stopped, whichever occurs first, to being considered unacceptable. Remove this material and replaced with materials that comply with the Specifications at no additional costs to the Department, unless otherwise approved. Payment will be made for the actual quantities of materials required to replace the removed quantities, not to exceed the original amounts.

Page 6-20, Subarticle 609-5(D)(1) General, delete the third full paragraph, and replace with the following:

Perform the sampling and testing at the minimum test frequencies as specified above. Should the density testing frequency fail to meet the minimum frequency as specified above, all mix without the required density test representation will be considered unsatisfactory. If the Engineer allows the mix to remain in place, payment will be made in accordance with Article 105-3.

Page 6-22, Subarticle 609-5(D)(4) Nuclear Gauge Density Procedures, third paragraph, insert the following as the second sentence:

Determine the Daily Standard Count in the presence of the QA Roadway Technician or QA Nuclear Gauge Technician on days when a control strip is being placed.

Page 6-23, Subarticle 609-5(D)(5) Limited Production Procedure, delete the first paragraph including (a), (b), (c) and substitute the following:

Proceed on limited production when, for the same mix type and on the same contract, one of the following conditions occur (except as noted in the first paragraph below).

(a) Two consecutive failing lots, except on resurfacing*
(b) Three consecutive failing lots on resurfacing*
(c) Two consecutive failing nuclear control strips.

* Resurfacing is defined as the first new uniform layer placed on an existing pavement.

Page 6-25, Article 609-6 QUALITY ASSURANCE, DENSITY QUALITY ASSURANCE, insert the following items after item (E):

(F) By retesting Quality Control core samples from control strips (either core or nuclear) at a frequency of 100% of the frequency required of the Contractor;

(G) By observing the Contractor perform all standard counts of the Quality Control nuclear gauge prior to usage each nuclear density testing day; or

(H) By any combination of the above.

Page 6-28, Subarticle 610-3(A) Mix Design-General, delete the fourth and fifth paragraphs and replace with the following:

Reclaimed Asphalt Pavement (RAP) or Reclaimed Asphalt Shingles (RAS) may be incorporated into asphalt plant mixes in accordance with Article 1012-1 and the following applicable requirements.

Reclaimed asphalt pavement (RAP) may constitute up to 50% of the total material used in recycled mixtures, except for mix Type S 12.5D, Type S 9.5D, and mixtures containing reclaimed asphalt shingle material (RAS). Reclaimed asphalt shingle (RAS) material may constitute up to 6% by weight of total mixture for any mix. When both RAP and RAS are used, do not use a combined percentage of RAS and RAP greater than 20% by weight of total mixture, unless otherwise approved. When the percent of binder contributed from RAS or a combination of RAS and RAP exceeds 20% but not more than 30% of the total binder in the completed mix, the virgin binder PG grade shall be one grade below (both high and low temperature grade) the binder grade specified in Table 610-2 for the mix type, unless otherwise approved. When the percent of binder contributed from RAS or a combination of RAS and RAP exceeds 30% of the total binder in the completed mix, the Engineer will

establish and approve the virgin binder PG grade. Use approved methods to determine if any binder grade adjustments are necessary to achieve the performance grade for the specified mix type.

For Type S 12.5D and Type S 9.5D mixes, the maximum percentage of reclaimed asphalt material is limited to 20% and shall be produced using virgin asphalt binder grade PG 76-22. For all other recycled mix types, the virgin binder PG grade shall be as specified in Table 610-2A for the specified mix type.

When the percentage of RAP is greater than 20% but not more than 30% of the total mixture, use RAP meeting the requirements for processed or fractionated RAP in accordance with the requirements of Article 1012-1.

When the percentage of RAP is greater than 30% of the total mixture, use an approved stockpile of RAP in accordance with Subarticle 1012-1(C). Use approved test methods to

determine if any binder grade adjustments are necessary to achieve the performance grade for the specified mix type. The Engineer will establish and approve the virgin asphalt binder grade to be used.

Page 6-34, Subarticle 610-3(C) Job Mix Formula, delete Table 610-2 and associated notes and replace with the following:

TABLE 610-2
SUPERPAVE MIX DESIGN CRITERIA

Mix Type	Design ESALs Millions (a)	Binder PG Grade (b)	Compaction Levels No. Gyrations @		Max. Rut Depth (mm)	Volumetric Properties (c)			
			N_{ini}	N_{des}		VMA % Min.	VTM %	VFA Min. - Max.	$\%G_{mm}$ @ N_{ini}
S-4.75A(e)	< 0.3	64 -22	6	50	-----	20.0	7.0 - 15.0	-----	-----
SF-9.5A	< 0.3	64 -22	6	50	11.5	16.0	3.0 - 5.0	70 - 80	≤ 91.5
S-9.5B	0.3 - 3	64 -22	7	65	9.5	15.5	3.0 - 5.0	65 - 80	≤ 90.5
S-9.5C	3 - 30	70 -22	7	75	6.5	15.5	3.0 - 5.0	65 - 78	≤ 90.5
S-9.5D	> 30	76 -22	8	100	4.5	15.5	3.0 - 5.0	65 - 78	≤ 90.0
S-12.5C	3 - 30	70 -22	7	75	6.5	14.5	3.0 - 5.0	65 - 78	≤ 90.5
S-12.5D	> 30	76 -22	8	100	4.5	14.5	3.0 - 5.0	65 - 78	≤ 90.0
I-19.0B	< 3	64 -22	7	65	-----	13.5	3.0 - 5.0	65 - 78	≤ 90.5
I-19.0C	3 - 30	64 -22	7	75	-----	13.5	3.0 - 5.0	65 - 78	≤ 90.0
I-19.0D	> 30	70 -22	8	100	-----	13.5	3.0 - 5.0	65 - 78	≤ 90.0
B-25.0B	< 3	64 -22	7	65	-----	12.5	3.0 - 5.0	65 - 78	≤ 90.5
B-25.0C	> 3	64 -22	7	75	-----	12.5	3.0 - 5.0	65 - 78	≤ 90.0

	Design Parameter		Design Criteria
All Mix Types	1. Dust to Binder Ratio ($P_{0.075}$ / P_{be})		0.6 – 1.4
	2. Retained Tensile Strength (TSR) (AASHTO T283 Modified)		85% Min. **(d)**

Notes:
(a) Based on 20 year design traffic.
(b) When Recycled Mixes are used, select the binder grade to be added in accordance with Subarticle 610-3(A).
(c) Volumetric Properties based on specimens compacted to N_{des} as modified by the Department.
(d) AASHTO T 283 Modified (No Freeze-Thaw cycle required). TSR for Type S 4.75A, Type B 25.0B, and Type B 25.0C mixes is 80% minimum.
(e) Mix Design Criteria for Type S 4.75A may be modified subject to the approval of the Engineer.

Page 6-34, Insert the following immediately after Table 610-2:

TABLE 610-2A

SUPERPAVE MIX DESIGN CRITERIA

	Percentage of RAP in Mix		
	Category 1	**Category 2**	**Category 3**
Mix Type	% RAP ≤20%	20.1% ≤ %RAP ≤ 30.0%	%RAP > 30.0%
All A and B Level Mixes, I19.0C, B25.0C	PG 64 -22	PG 64 -22	TBD
S9.5C, S12.5C, I19.0D	PG 70 -22	PG 64-22	TBD
S 9.5D and S12.5D	PG 76-22	N/A	N/A

Note: (1) Category 1 RAP has been processed to a maximum size of 2 inches.
(2) Category 2 RAP has been processed to a maximum size of 1 inch by either crushing and or screening to reduce variability in the gradations.
(3) Category 3 RAP has been processed to a maximum size of 1 inch, fractionating the RAP into 2 or more sized stockpiles

Page 6-35, Table 610-3 delete and replace with the following:

TABLE 610-3
ASPHALT PLACEMENT- MINIMUM TEMPERATURE REQUIREMENTS

Asphalt Concrete Mix Type	**Minimum Air Temperature**	**Minimum Surface Temperature**
ACBC, Type B 25.0B, C, B 37.5C	35°F	35°F
ACIC, Type I 19.0B, C, D	35°F	35°F
ACSC, Type S 4.75A, SF 9.5A, S 9.5B	40°F	50°F*
ACSC, Type S 9.5C, S 12.5C	45°F	50°F
ACSC, Type S 9.5D, S 12.5D	50°F	50°F

* 35°F if surface is soil or aggregate base for secondary road construction.

Page 6-45, Article 610-8 SPREADING AND FINISHING delete the third paragraph on page 6-45 and replace with the following:

Use a Material Transfer Vehicle (MTV) when placing all asphalt concrete plant mix pavements which require the use of asphalt binder grade PG 76-22 and for all types of OGAFC, unless otherwise approved. Use a MTV for all surface mix regardless of binder grade placed on Interstate facilities. Where required above, utilize the MTV when placing all full width travel lanes, collector lanes, ramps, and loops.

Page 6-44, Article 610-8 SPREADING AND FINISHING, third full paragraph, replace the first sentence with the following:

Use the 30 foot minimum length mobile grade reference system or the non-contacting laser or sonar type ski *with at least four referencing stations mounted on the paver at a minimum length of 24 feet* to control the longitudinal profile when placing the initial lanes and all adjacent lanes of all layers, including resurfacing and asphalt in-lays, unless otherwise specified or approved.

Page 6-50, Article 610-13 DENSITY ACCEPTANCE, delete the second paragraph and replace with the following:

As an exception, when the first layer of mix is a surface course and is being placed directly on an unprimed aggregate or soil base, the layer will be included in the "Other" construction category.

Page 6-50, Article 610-13 DENSITY ACCEPTANCE, delete the formula and description in the middle of the page and replace with the following:,

$$PF = 100 - 10(D)^{1.465}$$

Where: PF = Pay Factor (computed to 0.1%)

D = the deficiency of the lot average density, not to exceed 2.0%

Page 6-53, Article 620-4 MEASUREMENT AND PAYMENT, sixth paragraph, delete the last sentence and seventh paragraph, delete the paragraph and replace with the following:

The adjusted contract unit price will then be applied to the theoretical quantity of asphalt binder authorized for use in the plant mix placed during the partial payment period involved, except that where recycled plant mix is used, the adjusted unit price will be applied only to the theoretical number of tons of additional asphalt binder materials required by the job mix formula.

Page 6-54, Article 620-4 MEASUREMENT AND PAYMENT, add the following pay item:

Pay Item	Pay Unit
Asphalt Binder for Plant Mix, Grade PG 70-28	Ton

Page 6-59, Article 650-5 CONSTRUCTION REQUIREMENTS delete the second paragraph from the bottom of the page beginning "Use a Material Transfer Vehicle (MTV)..." and replace with the following:

Use a Material Transfer Vehicle (MTV) when placing all asphalt concrete plant mix pavements which require the use of asphalt binder grade PG 76-22 and for all types of OGAFC, unless otherwise approved. Use a MTV for all surface mix regardless of binder

grade placed on Interstate facilities. Where required above, utilize the MTV when placing all full width travel lanes, collector lanes, ramps, and loops.

Page 6-69, TABLE 660-1 MATERIAL APPLICATION RATES AND TEMPERATURES, add the following:

Type of Coat	Grade of Asphalt	Asphalt Rate gal/yd^2	Application Temperature °F	Aggregate Size	Aggregate Rate lb./sq. yd. Total
Sand Seal	CRS-2 or CRS-2P	0.22-0.30	150-175	Blotting Sand	12-15

Page 6-75, Subarticle 660-9(B) Asphalt Seal Coat, add the following as sub-item (5)

(5) Sand Seal

Place the fully required amount of asphalt material in one application and immediately cover with the seal coat aggregate. Uniformly spread the fully required amount of aggregate in one application and correct all non-uniform areas prior to rolling.

Immediately after the aggregate has been uniformly spread, perform rolling.

When directed, broom excess aggregate material from the surface of the seal coat.

When the sand seal is to be constructed for temporary sealing purposes only and will not be used by traffic, other grades of asphalt material meeting the requirements of Articles 1020-6 and 1020-7 may be used in lieu of the grade of asphalt required by Table 660-1 when approved.

Page 6-76, Article 661-1 DESCRIPTION, add the following as the 2nd paragraph:

Provide and conduct the quality control and required testing for acceptance of the UBWC in accordance with *Quality Management System for Asphalt Pavements (OGAFC, PADL, and Ultra-Thin HMA Version)*, included in the contract.

Page 6-76, Article 661-2 MATERIALS, add the following after Asphalt Binder, Grade 70-28:

Item	Section
Asphalt Binder, Grade 76-22	1020
Reclaimed Asphalt Shingles	1012

Page 6-78, Subarticle 661-2(E), Asphalt Binder For Plant Mix, Grade PG 70-28, rename as ASPHALT BINDER FOR PLANT MIX and add the following as the first paragraph:

Use either PG 70-28 or PG 76-22 binder in the mix design. Where PG 76-22 is being used in the production of Ultra-thin, the grade of asphalt binder to be paid for will be PG 70-28, unless otherwise approved.

Page 6-79, Subarticle 661-2(G) Composition of Mix, add the following as the third sentence of the first paragraph.
The percent of asphalt binder contributed from the RAS shall not exceed 20% of the total binder in the completed mix.

Page 6-80, Article 661-2(G) Composition of Mix, replace Table 661-4 and associated notes with the following:

TABLE 661-4 – MIXTURE DESIGN CRITERIA Gradation Design Criteria (% Passing by Weight)				
Standard Sieves		**1/2 in. Type A**	**3/8 in. Type B**	**1/4 in. Type C**
ASTM	**mm**	**(% Passing by Weight)**		
¾ inch	19.0	100		
½ inch	12.5	85 - 100	100	
3/8 inch	9.5	60 - 80	85 - 100	100
#4	4.75	28 - 38	28 – 44	40 - 55
#8	2.36	19 - 32	17 – 34	22 - 32
#16	1.18	15 - 23	13 - 23	15 - 25
#30	0.600	10 - 18	8 - 18	10 - 18
#50	0.300	8 - 13	6 - 13	8 - 13
#100	0.150	6 - 10	4 - 10	6 - 10
#200	0.075	4.0 - 7.0	3.0 - 7.0	4.0 - 7.0

	Mix Design Criteria		
	1/2 in. Type A	**3/8 in. Type B**	**1/4 in. Type C**
Asphalt Content, %	4.6 - 5.6	4.6 - 5.8	5.0 – 5.8
Draindown Test, AASHTO T 305	0.1% max.		
Moisture Sensitivity, AASHTO T 283*	80% min.		
Application Rate, lb/ yd^2	90	70	50
Approximate Application Depth, in.	3/4	5/8	1/2
Asphalt PG Grade, AASHTO M 320	PG 70-28 or PG 76-22	PG 70-28 or PG 76-22	PG 70-28 or PG 76-22

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

Page 6-80, Subarticle 661-3(A) Equipment, add the following as the first paragraph:

Use asphalt mixing plants in accordance with Article 610-5 of the *Standard Specifications*.

Page 6-82, Subarticle 661-3(C), Application of Ultra-thin Bonded Wearing Course, delete the first paragraph and add the following as the first and second paragraphs.

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

Do not place Ultra-thin Bonded Wearing Course between October 31 and April 1, when the pavement surface temperature is less than 50°F or on a wet pavement. In addition, when PG 76-22 binder is used in the JMF, place the wearing course only when the road pavement surface temperature is 60°F or higher and the air temperature in the shade away from artificial heat is 60°F or higher.

Page 10-40, Subarticle 1012-1(A) General, add the following at the end of the last paragraph, last sentence:

or ultra-thin bonded wearing course.

Page 10-41, Table 1012-1, delete the entries for OGAFC and add new entries for OGAFC and a row for UBWC with entries:

Mix Type	Coarse Aggregate Angularity [b] ASTM D5821	Fine Aggregate Angularity % Minimum AASHTO T304 Method A	Sand Equivalent % Minimum AASHTO T176	Flat & Elongated 5:1 Ratio % Maximum ASTM D4791 Section 8.4
S 9.5 D	100/100	45	50	10
OGAFC	100/100	N/A	N/A	10
UBWC	100/85	40	45	10

Delete Note (c) under the Table 1012-1 and replace with the following:

(c) Does not apply to Mix Types SF 9.5A and S 9.5B.

Page 10-42, Subarticle 1012-1(B)(6) Toughness (Resistance to Abrasion), add as the last sentence:

The percentage loss for aggregate used in UBWC shall be no more than 35%.

Page 10-43, Subarticle 1012-1(F) Reclaimed Asphalt Shingle Material (RAS), insert the following immediately following the first paragraph:

(1) Mix Design RAS

Incorporate RAS from stockpiles that have been tested for uniformity of gradation and binder content prior to use in an asphalt mix design.

(2) Mix Production RAS

New Source RAS is defined as acceptable material which was not included in the stockpile when samples were taken for mix design purposes. Process new source RAS so that all materials will pass a 1/2" sieve prior to introduction into the plant mixer unit.

After a stockpile of processed RAS has been sampled and mix designs made from these samples, do not add new source RAS to the original stockpile without prior field testing to insure gradation and binder uniformity. Sample and test new source RAS before blending with the existing stockpile.

Store new source RAS in a separate stockpile until the material can be sampled and tested for comparison with the original recycled mix design data. New source RAS may also be placed against the existing stockpile in a linear manner provided it is sampled for mix design conformity prior to its use in the recycled mix.

RAS contamination including but not limited to excessive dirt, debris, clean stone, concrete will not be allowed.

Field approval of new source RAS will be based on the table below and volumetric mix properties on the mix with the new source RAS included. Provided these tolerances are met, volumetric properties of the new mix will then be performed. If all volumetric mix properties meet the mix design criteria for that mix type, the new source RAS may continue to be used.

If the gradation, binder content, or any of the volumetric mix properties are not within the allowable tolerances of the table below, do not use the new source RAS unless approved by the Engineer. The Contractor may elect to either not use the stockpile, to request an adjustment to the JMF, or to redesign the mix.

NEW SOURCE RAS GRADATION and BINDER TOLERANCES
(Apply Tolerances to Mix Design Data)
0-6% RAS

P_b %	**±1.6%**
Sieve Size (mm)	**Tolerance**
9.5	±1
4.75	±5
2.36	±4
1.18	±4
0.300	±4
0.150	±4
0.075	±2.0

Page 10-43 through 10-45, Subarticle 1012-1(G), delete this in its entirety and replace with the following:

(G) Reclaimed Asphalt Pavement (RAP)

(1) Mix Design RAP

Incorporate RAP from stockpiles or other sources that have been tested for uniformity of gradation and binder content prior to use in an asphalt mix design. Use reclaimed asphalt pavement that meets all requirements specified for *one of* the following *two* classifications.

(a) Millings

Existing reclaimed asphalt pavement (RAP) that is removed from its original location by a milling process as specified in Section 607. Millings should be such that it has a uniform gradation and binder content and all materials will pass a 2" sieve prior to introduction into the plant mixer unit.

(b) Processed RAP

RAP that is processed in some manner (possibly by crushing and/or use of a blending method) to produce a uniform gradation and binder content in the RAP prior to use in a recycled mix. Process RAP so that all materials have a uniform gradation and binder content and will pass a 1" sieve prior to introduction into the plant mixer unit.

(c) Fractionated RAP

Fractionated RAP is defined as having two or more RAP stockpiles, where the RAP is divided into coarse and fine fractions. Grade RAP so that all materials will pass a 1" sieve. The coarse RAP stockpile shall only contain material retained on a 3/8" screen, unless otherwise approved. The fine RAP stockpile shall only contain material passing the 3/8" screen, unless otherwise approved. The Engineer may allow the Contractor to use an alternate to the 3/8" screen to fractionate the RAP. The maximum percentages of fractionated RAP may be comprised of coarse, fine, or the combination of both. Utilize a separate cold feed bin for each stockpile of fractionated RAP used.

(d) Approved Stockpiled RAP

Approved Stockpiled RAP is defined as fractionated RAP which has been isolated and tested for asphalt content, gradation, and asphalt binder characteristics with the intent to be used in mix designs with greater than 30% RAP materials. Fractionate the RAP in accordance with Subarticle 1012-1(G)(1)(c). Utilize a separate cold feed bin for each approved stockpile of RAP used.

Perform extraction tests at a rate of 1 per 1000 tons of RAP, with a minimum of 5 tests per stockpile to determine the asphalt content and gradation. Separate stockpiles of RAP material by fine and coarse fractions. Erect and maintain a sign satisfactory to the Engineer

on each stockpile to identify the material. Assure that no deleterious material is allowed in any stockpile. The Engineer may reject by visual inspection any stockpiles that are not kept clean, separated, and free of foreign materials.

Submit requests for RAP stockpile approval to the Engineer with the following information at the time of the request:

(1) Approximate tons of materials in stockpile
(2) Name or Identification number for the stockpile
(3) Asphalt binder content and gradation test results
(4) Asphalt characteristics of the Stockpile.

For the Stockpiled RAP to be considered for approval, the gradation and asphalt content shall be uniform. Individual test results, when compared to the target, will be accepted if within the tolerances listed below:

APPROVED STOCKPILED RAP GRADATION and BINDER TOLERANCES
(Apply Tolerances to Mix Design Data)

P_b %	**±0.3%**
Sieve Size (mm)	**Percent Passing**
25.0	±5%
19.0	±5%
12.5	±5%
9.5	±5%
4.75	±5%
2.36	±4%
1.18	±4%
0.300	±4%
0.150	±4%
0.075	±1.5%

Note: If more than 20% of the individual sieves are out of the gradation tolerances, or if more than 20% of the asphalt binder content test results fall outside the appropriate tolerances, the RAP shall not be used in HMA unless the RAP representing the failing tests is removed from the stockpile.

Do not add additional material to any approved RAP stockpile, unless otherwise approved by the Engineer.

Maintain at the plant site a record system for all approved RAP stockpiles. Include at a minimum the following: Stockpile identification and a sketch of all stockpile areas at the plant site; all RAP test results (including asphalt content, gradation, and asphalt binder characteristics).

(2) Mix Production RAP

During mix production, use RAP that meets the criteria for one of the following categories:

(a) Mix Design RAP

RAP contained in the mix design stockpiles as described above may be used in all applicable JMFs. These stockpiles have been pretested: however, they are subject to required QC/QA testing in accordance with Subarticle 609-5(C)(2).

(b) New Source RAP

New Source RAP is defined as any acceptable material that was not included in the stockpile or other source when samples were taken for mix design purposes. Process new source RAP so that all materials have a uniform gradation and binder content and will pass a 2" sieve prior to introduction into the plant mixer unit.

After a stockpile of millings, processed RAP, or fractionated RAP has been sampled and mix designs made from these samples, do not add new source RAP to the original stockpile without prior field testing to insure gradation and binder uniformity. Sample and test new source RAP before blending with the existing stockpile.

Store new source RAP in a separate stockpile until the material can be sampled and tested for comparison with the original recycled mix design data. New source RAP may also be placed against the existing stockpile in a linear manner provided it is sampled for mix design conformity prior to its use in the recycled mix.

Unprocessed RAP is asphalt material that was not milled and/or has not been processed to obtain a uniform gradation and binder content and is not representative of the RAP used during the applicable mix design. Unprocessed RAP shall not be incorporated into any JMFs prior to processing. Different sources of unprocessed RAP may be stockpiled together provided it is generally free of contamination and will be processed prior to use in a recycled mix. RAP contamination in the form of excessive dirt, debris, clean stone, concrete, etc. will not be allowed. Incidental amounts of dirt, concrete, and clean stone may be acceptable. Unprocessed RAP may be processed and then classified as a new source RAP as described above.

Field approval of new source RAP will be based on Table 1012-2 below and volumetric mix properties on the mix with the new source RAP included. Provided the Table 1012-2 tolerances are met, volumetric properties of the new mix will then be performed. If all volumetric mix properties meet the mix design criteria for that mix type, the new source RAP may continue to be used.

If the gradation, binder content, or any of the volumetric mix properties are not within the allowable tolerances of Table 1012-2, do not use the new source RAP unless approved by the Engineer. The Contractor may elect to either not use the stockpile, to request an adjustment to the JMF, or to redesign the mix.

TABLE 1012-2
NEW SOURCE RAP GRADATION and BINDER TOLERANCES
(Apply Tolerances to Mix Design Data)

Mix Type	0-20% RAP			20^{+}-30 % RAP			30^{+} % RAP		
Sieve (mm)	Base	Inter.	Surf.	Base	Inter.	Surf.	Base	Inter.	Surf.
P_b %	± 0.7%			± 0.4%			± 0.3%		
25.0	±10	-	-	±7	-	-	±5	-	-
19.0	±10	±10	-	±7	±7	-	±5	±5	-
12.5	-	±10	±10	-	±7	±7	-	±5	±5
9.5	-	-	±10	-	-	±7	-	-	±5
4.75	±10	-	±10	±7	-	±7	±5	-	±5
2.36	±8	±8	±8	±5	±5	±5	±4	±4	±4
1.18	±8	±8	±8	±5	±5	±5	±4	±4	±4
0.300	±8	±8	±8	±5	±5	±5	±4	±4	±4
0.150	-	-	±8	-	-	±5	-	-	±4
0.075	±4	±4	±4	±2	±2	±2	±1.5	±1.5	±1.5

ASPHALT BINDER CONTENT OF ASPHALT PLANT MIXES:
(11-21-00) SP6 R15

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

Asphalt Concrete Base Course	Type B 25.0__	4.3%
Asphalt Concrete Intermediate Course	Type I 19.0__	4.7%
Asphalt Concrete Surface Course	Type S 4.75A	7.0%
Asphalt Concrete Surface Course	Type SF 9.5A	6.5%
Asphalt Concrete Surface Course	Type S 9.5__	6.0%
Asphalt Concrete Surface Course	Type S 12.5__	5.5%

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

PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:
(11-21-00) SP6 R25

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

The base price index for asphalt binder for plant mix is $459.33 per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on 8/01/10.

BORROW EXCAVATION AND SHPO DOCUMENTATION FOR BORROW/WASTE SITES:
(12-18-07) (4-15-08) SP8 R02

Revise the *2006 Standard Specifications* as follows:

Division 2 Earthwork

Page 2-16, Subarticle 230-1(D), add the words: *The Contractor specifically waives* as the first words of the sentence.

Page 2-17, Article 230-4(B) Contractor Furnished Sources, first paragraph, first sentence replace with the following:

Prior to the approval of any borrow sources developed for use on any project, obtain certification from the State Historic Preservation Officer of the State Department of

Cultural Resources certifying that the removal of the borrow material from the borrow sources(s) will have no effect on any known district, site building, structure, or object, architectural and/or archaeological that is included or eligible for inclusion in the National Register of Historic Places.

Division 8 Incidentals

Page 8-9, Article 802-2 General Requirements, add the following as the 1st paragraph:

Prior to the removal of any waste from any project, obtain certification from the State Historic Preservation Officer of the State Department of Cultural Resources certifying that the deposition of the waste material to the proposed waste area will have no effect on any known district, site building, structure, or object, architectural and/or archaeological that is included or eligible for inclusion in the National Register of Historic Places. Furnish a copy of this certification to the Engineer prior to performing any work in the proposed waste site.

Page 8-10, Article 802-2, General Requirements, 4th paragraph, add the following as the 2nd sentence:

The Department's borrow and waste site reclamation procedures for contracted projects is available on the NCDOT website and shall be used for all borrow and waste sites on this project.

GUARDRAIL ANCHOR UNITS, TYPE 350:
(4-20-04) SP8 R65

Description

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

Materials

The Contractor may at his option, furnish any one of the guardrail anchor units.

Guardrail anchor unit (ET-2000) as manufactured by:

Trinity Industries, Inc.
2525 N. Stemmons Freeway
Dallas, Texas 75207
Telephone: 800-644-7976

The guardrail anchor unit (SKT 350) as manufactured by:

Road Systems, Inc.
3616 Old Howard County Airport
Big Spring, Texas 79720
Telephone: 915-263-2435

Prior to installation the Contractor shall submit to the Engineer:

(A) FHWA acceptance letter for each guardrail anchor unit certifying it meets the requirements of NCHRP Report 350, Test Level 3, in accordance with Section 106-2 of the Standard Specifications.

(B) Certified working drawings and assembling instructions from the manufacturer for each guardrail anchor unit in accordance with Section 105-2 of the Specifications.

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

Construction Methods

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

Measurement and Payment

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

Payment will be made under:

Pay Item	**Pay Unit**
Guardrail Anchor Units, Type 350	Each

GALVANIZED HIGH STRENGTH BOLTS, NUTS AND WASHERS:
(2-17-09) SP10 R02

Revise the *Standard Specifications* as follows:

Page 10-126, Subarticle 1072-7(F)(3) Change the AASHTO reference to B 695 Class 55

Page 10-247, Table 1092-2, Steel Sign Materials, Change High Strength Bolts, Nuts & Washers ASTM Specifications for Galvanizing to B695 Class 55.

Page 10-259, Subarticle 1094-1(A) Breakaway or Simple Steel Beam Sign Supports, replace the third paragraph with the following:

> Fabricate high strength bolts, nuts, and washers required for breakaway supports from steel in accordance with ASTM A325 and galvanize in accordance with AASHTO B 695 Class 55.

Page 10-261, Article 1096-2 Steel Overhead Sign Structures, replace the last sentence with the following:

> The galvanizing shall meet the requirement of AASHTO B 695 Class 55 for fasteners and of ASTM A123 for other structural steel.

GALVANIZING:
(8-17-10) SP10 R03

Revise the *Standard Specifications* as follows:

Page 10-150, Subarticle 1076-1, Galvanizing, add a second paragraph as the follows:

Allow the Engineer to obtain samples of molten zinc directly from the galvanizing vat upon request.

AGGREGATE PRODUCTION:
(11-20-01) SP10 R05

Provide aggregate from a producer who uses the current Aggregate Quality Control/Quality Assurance Program that is in effect at the time of shipment.

No price adjustment is allowed to contractors or producers who use the program. Participation in the program does not relieve the producer of the responsibility of complying with all requirements of the *Standard Specifications*. Copies of this procedure are available upon request from the Materials and Test Unit.

CONCRETE BRICK AND BLOCK PRODUCTION:
(11-20-01) SP10 R10

Provide concrete brick and block from a producer who uses the current Solid Concrete Masonry Brick/Unit Quality Control/Quality Assurance Program that is in effect on the date that material is received on the project.

No price adjustment is allowed to contractors or producers who use the program. Participation in the program does not relieve the producer of the responsibility of complying with all requirements of the *Standard Specifications*. Copies of this procedure are available upon request from the Materials and Test Unit.

PORTLAND CEMENT CONCRETE (Alkali-Silica Reaction):
2-20-07 SP10 R16

Revise the *2006 Standard Specifications* as follows:

Article 1024-1(A), replace the 2nd paragraph with the following:

Certain combinations of cement and aggregate exhibit an adverse alkali-silica reaction. The alkalinity of any cement, expressed as sodium-oxide equivalent, shall not exceed 1.0 percent. For mix designs that contain non-reactive aggregates and cement with an alkali content less than 0.6%, straight cement or a combination of cement and fly ash, cement and ground

granulated blast furnace slag or cement and microsilica may be used. The pozzolan quantity shall not exceed the amount shown in Table 1024-1. For mixes that contain cement with an alkali content between 0.6% and 1.0%, and for mixes that contain a reactive aggregate documented by the Department, regardless of the alkali content of the cement, use a pozzolan in the amount shown in Table 1024-1.

Obtain the list of reactive aggregates documented by the Department at:http://www.ncdot.org/doh/operations/materials/pdf/quarryasrprob.pdf

Table 1024-1	
Pozzolans for Use in Portland Cement Concrete	
Pozzolan	*Rate*
Class F Fly Ash	20% by weight of required cement content, with 1.2 lbs Class F fly ash per lb of cement replaced
Ground Granulated Blast Furnace Slag	35%-50% by weight of required cement content with 1 lb slag per lb of cement replaced
Microsilica	4%-8% by weight of required cement content, with 1 lb microsilica per lb of cement replaced

WATER FOR CONCRETE:
(10-19-10) SP10 R17

Revise the *Standard Specifications for Roads and Structures* as follows:

Page 10-63, Article 1024-4, replace article with the following:

1024-4 WATER

Ensure that water used to condition, wash, or as an integral part of materials is clear and free from injurious amounts of oil, acid, alkali, organic matter, or other deleterious substance. It shall not be salty or brackish. Water used in the production of concrete or grout shall be from wells or public water systems which are suitable for drinking and must meet the criteria listed in Table 1024-1.

Test all water from wells and public water supplies from all out of state locations and in the following counties: Beaufort, Bertie, Brunswick, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Hyde, New Hanover, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrell, and Washington unless the Engineer waives the testing requirements. Water from a municipal water supply in all other NC counties may be accepted by the Engineer without testing.

TABLE 1024-1
ACCEPTANCE CRITERIA FOR WATER
USED IN THE PRODUCTION OF CONCRETE

Requirement	Limit	Test Method
Compressive Strength, minimum percent of control at 3 and 7 days	90 percent	NCDOT Modified / AASHTO T106
Time of set, deviation from control	From 1:00 hr. earlier to 1:30 hr. later	NCDOT Modified / AASHTO T131
pH	4.5 to 8.5	NCDOT Modified / AASHTO T26
Chloride Ion Content, Max.	250 ppm	ASTM D512
Total Solids Content (Residue), Max.	1000 ppm	NCDOT Modified / Standard Methods for Examination of Water and Wastewater
Resistivity, Min.	0.500 kohm-cm	NCDOT Modified / ASTM D1125
Sulfate as SO_4,, Max.	1500 ppm	NCDOT Modified / ASTM D516
Presence of Sugar	None	NCDOT Procedure
Dissolved Organic Matter	None	NCDOT Modified / AASHTO T26

Page 10-65, Article 1026-4, replace article with the following:

1026-4 WATER

All water used for curing concrete shall meet the requirements of Article 1024-4 and Table 1024-1. Water from wells, streams, ponds, or public water systems may be used.

ENGINEERING FABRICS:
(7-18-06) (Rev. 10-19-10) SP10 R40

Revise the *Standard Specifications* as follows:

Page 10-99, Delete Section 1056 ENGINEERING FABRICS and replace it with the following:

SECTION 1056
ENGINEERING FABRICS

1056-1 General

Use engineering fabrics that meet the requirements of Article 4.1 of AASHTO M288 and have been evaluated by National Transportation Product Evaluation Program (NTPEP).

When required, sew fabrics together in accordance with Article X1.1.4 of AASHTO M288. Provide sewn seams with seam strengths meeting the required strengths for the engineering fabric type and class specified.

Load, transport, unload and store fabrics such that they are kept clean and free of damage. Label, ship and store fabrics in accordance with Section 7 of AASHTO M288. Fabrics with defects, flaws, deterioration or damage will be rejected. Do not unwrap fabrics until just before installation. With the exception of fabrics for temporary silt fences and mechanically stabilized earth (MSE) wall faces, do not leave fabrics exposed for more than 7 days before covering fabrics with material.

When required, use pins a minimum of 3/16" in diameter and 18" long with a point at one end and a head at the other end that will retain a steel washer with a minimum outside diameter of 1.5". When wire staples are required, provide staples in accordance with Subarticle 1060-8(D) of the *Standard Specifications*.

1056-2 Fabric Properties

Provide Type 1 Certified Mill Test Report, Type 2 Typical Certified Mill Test Report or Type 4 Certified Test Report in accordance with Article 106-3 of the *Standard Specifications*. Furnish certifications with minimum average roll values (MARV) as defined by ASTM D4439 for all fabric properties with the exception of elongation. For testing fabrics, a lot is defined as a single day's production.

Provide engineering fabric types and classes in accordance with the contract. Machine direction (MD) and cross-machine direction (CD) are as defined by ASTM D4439. Use woven or nonwoven fabrics with properties meeting the requirements of Table 1056-1.

TABLE 1056-1
FABRIC PROPERTY REQUIREMENTS

Property	ASTM Test Method	Requirements (MARV[1])				
		Type 1	Type 2	Type 3[2]	Type 4	Type 5[3]
Typical Application		*Shoulder Drains*	*Under Riprap*	*Temporary Silt Fence*	*Soil Stabilization*	*Temporary MSE Walls*
Elongation (MD & CD)	D4632	≥ 50 %	≥ 50 %	≤ 25 %	< 50 %	< 50 %
Grab Strength (MD & CD)	D4632	90 lbs	205 lbs	100 lbs	180 lbs	---
Tear Strength (MD & CD)	D4533	40 lbs	80 lbs	---	70 lbs	---
Puncture Strength	D6241	220 lbs	440 lbs	---	370 lbs	---
Wide Width Tensile Strength @ Ultimate (MD & CD)	D4595	---	---	---	---	2400 lbs/ft (unless required otherwise in the contract)
Permittivity	D4491	0.20 sec^{-1}	0.20 sec^{-1}	0.05 sec^{-1}	0.05 sec^{-1}	0.20 sec^{-1}
Apparent Opening Size[4]	D4751	#60	#60	#30	#40	#30
Ultraviolet Stability (retained strength)[5]	D4355	50 %	50 %	70 %	50 %	50%

[1]MARV does not apply to elongation
[2]Minimum roll width of 36" required
[3]Minimum roll width of 13 ft required
[4]US Sieve No. per AASHTO M92
[5]After 500 hours of exposure

EROSION AND STORMWATER CONTROL FOR SHOULDER CONSTRUCTION AND RECONSTRUCTION:

(11-16-10) SP16 R02

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

Erosion control measures shall be installed per the erosion control detail in any area where the vegetated buffer between the disturbed area and surface waters (streams, wetlands, or open waters) or drainage inlet is less than 10 feet. The Engineer may reduce the vegetated

buffer threshold for this requirement to a value between 5 and 10 feet. Erosion control measures shall be spot checked every 14 days until permanent vegetative establishment.

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

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

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

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

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

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

SPECIAL SEDIMENT CONTROL FENCE:

Description

This work consists of furnishing materials, and the construction, maintenance, and removal of S*pecial Sediment Control Fence*. Place special sediment control fence as shown on the plans or as directed.

Materials

(A) Posts

Steel posts shall be at least 5 ft. in length, approximately 1 3/8" wide measured parallel to the fence, and have a minimum weight of 1.25 lb/ft of length. The post shall be equipped with an anchor plate having a minimum area of 14.0 square inches, and shall have a means of retaining wire in the desired position without displacement.

(B) ¼" Hardware Cloth

Hardware cloth shall have ¼" openings constructed from #24 gauge wire. Install hardware cloth in accordance with Standard Drawing No. 1606.01.

(C) Sediment Control Stone

Sediment Control Stone shall meet the requirements of Section 1005 of the *Standard Specifications*. Install stone in accordance with Standard Drawing No. 1606.01.

Construction Methods

The Contractor shall maintain the special sediment control fence until the project is accepted or until the fence is removed, and shall remove and dispose of silt accumulations at the fence when so directed in accordance with the requirements of Section 1630 of the *Standard Specifications*.

Measurement and Payment

¼" Hardware Cloth will be measured and paid for in accordance with Article 1632-5 of the *Standard Specifications*.

Sediment Control Stone will be measured and paid for in accordance with Article 1610-4 of the *Standard Specifications*.

SEEDING AND MULCHING

Seed Mixes for Bridge Maintenance P.O. Contracts ONLY

Seed Mix East

Divisions:	Counties:
1	Currituck, Dare, Hyde, Bertie, Camden, Chowan, Gates, Hertford, Martin, Northampton, Pasquotank, Perquimans, Tyrell, Washington
2	Beaufort, Carteret, Craven, Pamlico, Greene, Jones, Lenoir, Pitt
3	Brunswick, New Hanover, Onslow, Pender, Duplin, Sampson
4	Edgecombe, Halifax, Johnston, Nash, Wayne, Wilson
5	Durham, Franklin, Granville, Person, Vance, Wake, Warren
6	Bladen, Columbus, Cumberland, Harnett, **Robeson**
7	Alamance, Guilford, Orange
8	Chatham, Hoke, Lee, Montgomery, Moore, Randolph, Richmond, Scotland
10	Anson

Seed Mix West

Divisions:	Counties:
7	Caswell, Rockingham
9	Davidson, Davie, Forsyth, Rowan, Stokes
10	Cabarrus, Mecklenburg, Stanly, Union
11	Alleghany, Ashe, Avery, Caldwell, Surry, Watauga, Wilkes, Yadkin
12	Alexander, Catawba, Cleveland, Gaston, Iredell, Lincoln

Seed Mix WestEd

13	Burke, McDowell, Rutherford, Buncombe, Madison, Mitchell, Yancey
14	Polk, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon Swain, Transylvania

Seed Mix East

SEEDING AND MULCHING:

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

All Roadway Areas

March 1 - August 31		**September 1 - February 28**	
50#	Tall Fescue	50#	Tall Fescue
10#	Centipede	10#	Centipede
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Waste and Borrow Locations

March 1 – August 31		**September 1 - February 28**	
75#	Tall Fescue	75#	Tall Fescue
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

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

Approved Tall Fescue Cultivars

2nd 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	

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

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. Sweet Sudan Grass, 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 on all roadway areas except slopes 2:1 and steeper shall be 10-20-20 grade and shall be applied at the rate of 500 pounds per acre. 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 10-20-20 analysis and as directed.

Fertilizer used for topdressing on slopes 2:1 and steeper and waste and borrow areas 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*, with the exception that no centipede seed will be used in the seed mix for supplemental seeding. The rate of application for supplemental seeding 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.

Seed Mix West

SEEDING AND MULCHING:

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		**May 1 - September 1**	
20#	Kentucky Bluegrass	20#	Kentucky Bluegrass
75#	Hard Fescue	75#	Hard Fescue
25#	Rye Grain	10#	German or Browntop Millet
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Areas Beyond the Mowing Pattern, Waste and Borrow Areas:

August 1 - June 1		**May 1 - September 1**	
100#	Tall Fescue	100#	Tall Fescue
15#	Kentucky Bluegrass	15#	Kentucky Bluegrass
30#	Hard Fescue	30#	Hard Fescue
25#	Rye Grain	10#	German or Browntop Millet
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Approved Tall Fescue Cultivars

2nd 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 II
Apollo	Bedazzled	Impact	Showcase
Arcadia	Bordeaux	Midnight	Sonoma
Arrow	Champagne	Midnight II	
Award	Chicago II	Rugby	

Approved Hard Fescue Cultivars:

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

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

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

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.

Seed Mix WestEd

SEEDING AND MULCHING:

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		**May 1 - September 1**	
20#	Kentucky Bluegrass	20#	Kentucky Bluegrass
75#	Hard Fescue	75#	Hard Fescue
25#	Rye Grain	10#	German or Browntop Millet
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Areas Beyond the Mowing Pattern, Waste and Borrow Areas:

August 1 - June 1		**May 1 - September 1**	
100#	Tall Fescue	100#	Tall Fescue
15#	Kentucky Bluegrass	15#	Kentucky Bluegrass
30#	Hard Fescue	30#	Hard Fescue
25#	Rye Grain	10#	German or Browntop Millet
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Approved Tall Fescue Cultivars

2nd 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 II
Apollo	Bedazzled	Impact	Showcase
Arcadia	Bordeaux	Midnight	Sonoma
Arrow	Champagne	Midnight II	
Award	Chicago II	Rugby	

Approved Hard Fescue Cultivars:

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

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 "Grading". This price shall be full compensation for all materials, tools, equipment, labor, and for all incidentals necessary to complete the work.

PERMANENT SEEDING AND MULCHING:
(7-1-95) SP16 R01

The Department desires that permanent seeding and mulching be established on this project as soon as practical after slopes or portions of slopes have been graded. As an incentive to obtain an early stand of vegetation on this project, the Contractor's attention is called to the following:

For all permanent seeding and mulching that is satisfactorily completed in accordance with the requirements of Section 1660, Seeding and Mulching, and within the following percentages of elapsed contract times, an additional payment will be made to the Contractor as an incentive additive. The incentive additive will be determined by multiplying the number of acres of seeding and mulching satisfactorily completed times the contract unit bid price per acre for Seeding and Mulching times the appropriate percentage additive.

Percentage of Elapsed Contract Time	Percentage Additive
0% - 30%	30%
30.01% - 50%	15%

Percentage of elapsed contract time is defined as the number of calendar days from the date of availability of the contract to the date the permanent seeding and mulching is acceptably completed divided by the total original contract time.

STRUCTURE PROVISIONS

FALSEWORK AND FORMWORK (8-4-09)

1.0 Description

Use this Special Provision as a guide to develop temporary works submittals required by the Standard Specifications or other provisions; no additional submittals are required herein. Such temporary works include, but are not limited to, falsework and formwork. Falsework is any temporary construction used to support the permanent structure until it becomes self-supporting. Formwork is the temporary structure or mold used to retain plastic or fluid concrete in its designated shape until it hardens. Access scaffolding is a temporary structure that functions as a work platform that supports construction personnel, materials, and tools, but is not intended to support the structure. Scaffolding systems that are used to temporarily support permanent structures (as opposed to functioning as work platforms) are considered to be falsework under the definitions given. Shoring is a component of falsework such as horizontal, vertical, or inclined support members. Where the term "temporary works" is used, it includes all of the temporary facilities used in bridge construction that do not become part of the permanent structure.

Design and construct safe and adequate temporary works that will support all loads imposed and provide the necessary rigidity to achieve the lines and grades shown on the plans in the final structure.

2.0 Materials

Select materials suitable for temporary works; however, select materials that also ensure the safety and quality required by the design assumptions. The Engineer has authority to reject material on the basis of its condition, inappropriate use, safety, or nonconformance with the plans. Clearly identify allowable loads or stresses for all materials or manufactured devices on the plans. Revise the plan and notify the Engineer if any change to materials or material strengths is required.

3.0 Design Requirements

A. Working Drawings

Provide working drawings for items as specified in the contract, or as required by the Engineer, with design calculations and supporting data in sufficient detail to permit a structural and safety review of the proposed design of the temporary work.

When concrete placement is involved, include data such as the drawings of proposed sequence, rate of placement, direction of placement, and location of all construction joints. Submit the number of copies as called for by the contract.

When required, have the drawings and calculations prepared under the guidance of, and sealed by, a North Carolina Registered Professional Engineer who is knowledgeable in temporary works design.

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

1. Wind Loads

Table 2.2 of Article 2.2.5.1 is modified to include wind velocities up to 110 mph (177 km/hr). In addition, Table 2.2A is included to provide the maximum wind speeds by county in North Carolina.

Table 2.2 - Wind Pressure Values

Height Zone feet (m) above ground	Pressure, lb/ft^2 (kPa) for Indicated Wind Velocity, mph (km/hr)				
	70 (112.7)	80 (128.7)	90 (144.8)	100 (160.9)	110 (177.0)
0 to 30 (0 to 9.1)	15 (0.72)	20 (0.96)	25 (1.20)	30 (1.44)	35 (1.68)
30 to 50 (9.1 to 15.2)	20 (0.96)	25 (1.20)	30 (1.44)	35 (1.68)	40 (1.92)
50 to 100 (15.2 to 30.5)	25 (1.20)	30 (1.44)	35 (1.68)	40 (1.92)	45 (2.15)
over 100 (30.5)	30 (1.44)	35 (1.68)	40 (1.92)	45 (2.15)	50 (2.39)

2. Time of Removal

The following requirements replace those of Article 3.4.8.2.
Do not remove forms until the concrete has attained strengths required in Article 420-16 of the Standard Specifications and these Special Provisions.
Do not remove forms until the concrete has sufficient strength to prevent damage to the surface.

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

COUNTY	25 YR (mph) (km/hr)	COUNTY	25 YR (mph) (km/hr)	COUNTY	25 YR (mph) (km/hr)
Alamance	70 (112.7)	Franklin	70 (112.7)	Pamlico	100 (160.9)
Alexander	70 (112.7)	Gaston	70 (112.7)	Pasquotank	100 (160.9)
Alleghany	70 (112.7)	Gates	90 (144.8)	Pender	100 (160.9)
Anson	70 (112.7)	Graham	80 (128.7)	Perquimans	100 (160.9)
Ashe	70 (112.7)	Granville	70 (112.7)	Person	70 (112.7)
Avery	70 (112.7)	Greene	80 (128.7)	Pitt	90 (144.8)
Beaufort	100 (160.9)	Guilford	70 (112.7)	Polk	80 (128.7)
Bertie	90 (144.8)	Halifax	80 (128.7)	Randolph	70 (112.7)
Bladen	90 (144.8)	Harnett	70 (112.7)	Richmond	70 (112.7)
Brunswick	100 (160.9)	Haywood	80 (128.7)	Robeson	80 (128.7)
Buncombe	80 (128.7)	Henderson	80 (128.7)	Rockingham	70 (112.7)
Burke	70 (112.7)	Hertford	90 (144.8)	Rowan	70 (112.7)
Cabarrus	70 (112.7)	Hoke	70 (112.7)	Rutherford	70 (112.7)
Caldwell	70 (112.7)	Hyde	110 (177.0)	Sampson	90 (144.8)
Camden	100 (160.9)	Iredell	70 (112.7)	Scotland	70 (112.7)
Carteret	110 (177.0)	Jackson	80 (128.7)	Stanley	70 (112.7)
Caswell	70 (112.7)	Johnston	80 (128.7)	Stokes	70 (112.7)
Catawba	70 (112.7)	Jones	100 (160.9)	Surry	70 (112.7)
Cherokee	80 (128.7)	Lee	70 (112.7)	Swain	80 (128.7)
Chatham	70 (112.7)	Lenoir	90 (144.8)	Transylvania	80 (128.7)
Chowan	90 (144.8)	Lincoln	70 (112.7)	Tyrell	100 (160.9)
Clay	80 (128.7)	Macon	80 (128.7)	Union	70 (112.7)
Cleveland	70 (112.7)	Madison	80 (128.7)	Vance	70 (112.7)
Columbus	90 (144.8)	Martin	90 (144.8)	Wake	70 (112.7)
Craven	100 (160.9)	McDowell	70 (112.7)	Warren	70 (112.7)
Cumberland	80 (128.7)	Mecklenburg	70 (112.7)	Washington	100 (160.9)
Currituck	100 (160.9)	Mitchell	70 (112.7)	Watauga	70 (112.7)
Dare	110 (177.0)	Montgomery	70(112.7)	Wayne	80 (128.7)
Davidson	70 (112.7)	Moore	70 (112.7)	Wilkes	70 (112.7)
Davie	70 (112.7)	Nash	80 (128.7)	Wilson	80 (128.7)
Duplin	90 (144.8)	New Hanover	100 (160.9)	Yadkin	70 (112.7)
Durham	70 (112.7)	Northampton	80 (128.7)	Yancey	70 (112.7)
Edgecombe	80 (128.7)	Onslow	100 (160.9)		
Forsyth	70 (112.7)	Orange	70 (112.7)		

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

B. Review and Approval

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

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

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

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

On the drawings, show all information necessary to allow the design of any component to be checked independently as determined by the Engineer.

If requested by the Engineer, submit with the working drawings manufacturer's catalog data listing the weight of all construction equipment that will be supported on the temporary work. Show anticipated total settlements and/or deflections of falsework and forms on the working drawings. Include falsework footing settlements, joint take-up, and deflection of beams or girders. Falsework hangers that support concentrated loads and are installed at the edge of thin top flange concrete girders (such as bulb tee girders) shall be spaced so as not to exceed 75% of the manufacturer's stated safe working load. Use of dual leg hangers (such as Meadow Burke HF-42 and HF-43) are not allowed. Design the falsework and forms supporting deck slabs and overhangs on girder bridges so that there will be no differential settlement between the girders and the deck forms during placement of deck concrete.

4.0 Construction Requirements

All requirements of Section 420 of the Standard Specifications apply.

Construct temporary works in conformance with the approved working drawings. Ensure that the quality of materials and workmanship employed is consistent with that assumed in the design of the temporary works. Do not weld falsework members to any

portion of the permanent structure unless approved. Show any welding to the permanent structure on the approved construction drawings.

Provide tell-tales attached to the forms and extending to the ground, or other means, for accurate measurement of falsework settlement. Make sure that the anticipated compressive settlement and/or deflection of falsework does not exceed 1 inch (25 mm). For cast-in-place concrete structures, make sure that the calculated deflection of falsework flexural members does not exceed 1/240 of their span regardless of whether or not the deflection is compensated by camber strips.

A. Maintenance and Inspection

Inspect and maintain the temporary work in an acceptable condition throughout the period of its use. Certify that the manufactured devices have been maintained in a condition to allow them to safely carry their rated loads. Clearly mark each piece so that its capacity can be readily determined at the job site.

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

B. Foundations

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

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

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

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

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

5.0 Removal

Unless otherwise permitted, remove and keep all temporary works upon completion of the work. Do not disturb or otherwise damage the finished work.
Remove temporary works in conformance with the contract documents. Remove them in such a manner as to permit the structure to uniformly and gradually take the stresses due to its own weight.

6.0 Method of Measurement

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

7.0 Basis of Payment

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

CONSTRUCTION OF SUPERSTRUCTURE

Furnish and erect precast prestressed concrete box beams, elastomeric bearings, cast in place concrete barrier rails on the bridge and applicable grouting.

Complete all work in accordance with the contract plans and the Standard Specifications except payment for these items will be as described below.

No measurement will be made for these items. The price and payment below will be full compensation for all work covered by this provision including but not limited to furnishing all materials, labor, tools, equipment and all incidentals necessary to complete the work.

Payment will be made under:

Construction of Superstructure.....Lump Sum

CONSTRUCTION OF SUBSTRUCTURE

Description:

The work covered by this special provision consists of furnishing all labor, equipment, materials, and incidentals necessary to complete the construction of the substructure as is defined in Article 101-3 of the July 2006 Standard Specifications for Roads and Structures.

Materials:

All material shall conform to the Specifications or any applicable contract special provision.

Construction Methods:

All work shall be performed in accordance with the contract plans and the Standard Specifications or any applicable contract special provision.

Basis of Payment:

All work covered by this section will be paid for at the contract lump sum price for "Construction of Substructure"

12" Prestressed Concrete Piles and HP 12 x 53 Galvanized Steel Piles, will be paid for in accordance with other provisions in this Contract.

CRANE SAFETY
(8-15-05)

Comply with the manufacturer specifications and limitations applicable to the operation of any and all cranes and derricks. Prime contractors, sub-contractors, and fully operated rental companies shall comply with the current Occupational Safety and Health Administration regulations (OSHA).

Submit all items listed below to the Engineer prior to beginning crane operations involving critical lifts. A critical lift is defined as any lift that exceeds 75 percent of the manufacturer's crane chart capacity for the radius at which the load will be lifted or requires the use of more than one crane. Changes in personnel or equipment must be reported to the Engineer and all applicable items listed below must be updated and submitted prior to continuing with crane operations.

Crane Safety Submittal List

A. **Competent Person:** Provide the name and qualifications of the "Competent Person" responsible for crane safety and lifting operations. The named competent person will have the responsibility and authority to stop any work activity due to safety concerns.

B. **Riggers:** Provide the qualifications and experience of the persons responsible for rigging operations. Qualifications and experience should include, but not be limited to, weight calculations, center of gravity determinations, selection and inspection of sling and rigging equipment, and safe rigging practices.

C. **Crane Inspections:** Inspection records for all cranes shall be current and readily accessible for review upon request.

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

STEEL PILES

Refer to Section 450 of the *Standard Specifications.* (8-4-09)

GALVANIZING STEEL PILES

Description

This work consists of surface preparation and galvanizing of steel piles in accordance with Section 1076 of the Standard Specifications. For steel piles, prepare the surface and provide materials in accordance with the applicable parts of the Standard Specifications.

Basis of Payment

The work covered by this provision will be included in the contract bid price per linear foot for "HP 12x53 Steel Piles". This compensation includes the galvanizing of pile bracing when required. The above prices and payments will be full compensation for all work covered by this provision including but not limited to furnishing all materials, labor, tools, equipment and all incidentals necessary to complete the work.

GROUT FOR STRUCTURE 7-12-07

1.0 DESCRIPTION

This special provision addresses grout for use in structures, including continuous flight auger (CFA) piles, micropiles, soil nail and anchored retaining walls and backfilling crosshole sonic logging (CSL) tubes or grout pockets, shear keys, dowel holes and recesses for cored slabs and box beams. This provision does not apply to grout placed in post-tensioning ducts for bridge beams, girders, or decks. Provide grout composed of portland cement, water and at the Contractor's option, fine aggregate and/or pozzolan. If necessary, use set controlling admixtures. Proportion, mix and place grout in accordance with the plans, the applicable section of the *Standard Specifications* or special provision for the application and this provision.

2.0 MATERIALS

Refer to Division 10 of the *Standard Specifications*:

Item	Article
Portland Cement	1024-1
Water	1024-4
Fine Aggregate	1014-1
Fly Ash	1024-5

Ground Granulated Blast Furnace Slag	1024-6
Admixtures	1024-3

At the Contractor's option, use an approved packaged grout in lieu of the materials above with the exception of the water. Contact the Materials and Tests (M&T) Unit for a list of approved packaged grouts. Consult the manufacturer to determine if the packaged grout selected is suitable for the application and meets the compressive strength and shrinkage requirements.

3.0 REQUIREMENTS

Unless required elsewhere in the Contract, provide non-metallic grout with minimum compressive strengths as follows:

Property	Requirement
Compressive Strength @ 3 days	2500 psi (17.2 MPa)
Compressive Strength @ 28 days	4500 psi (31.0 MPa)

For applications other than micropiles, soil nails and ground anchors, use non-shrink grout with shrinkage of less than 0.15%.

When using approved packaged grout, a grout mix design submittal is not required. Submit grout mix designs in terms of saturated surface dry weights on M&T Form 312U in accordance with the applicable section of the *Standard Specifications* or special provision for the structure. Use an approved testing laboratory to determine the grout mix proportions. Adjust proportions to compensate for surface moisture contained in the aggregates at the time of mixing. Changes in the saturated surface dry mix proportions will not be permitted unless a revised grout mix design submittal is accepted.

For each grout mix design, provide laboratory test results for compressive strength, density, flow and if applicable, aggregate gradation and shrinkage. Submit compressive strength for at least 3 cube and 2 cylinder specimens at the age of 3, 7, 14 and 28 days for a total of at least 20 specimens tested. Perform laboratory tests in accordance with the following:

Property	Test Method
Compressive Strength	AASHTO T106 and T22
Density	AASHTO T133
Flow for Sand Cement Grout	ASTM C939 (as modified below)
Flow for Neat Cement Grout (no fine aggregate)	Marsh Funnel and Cup API RP 13B-1, Section 2.2
Aggregate Gradation for Sand Cement Grout	AASHTO T27
Shrinkage for Non-shrink Grout	ASTM C1090

When testing grout for flow in accordance with ASTM C939, modify the flow cone outlet diameter from ½ to ¾ inch (13 to 19 mm).

When grout mix designs are submitted, the Engineer will review the mix designs and notify the Contractor as to their acceptability. Do not use grout mix designs until written acceptance has been received. Acceptance of grout mix designs or use of approved packaged grouts does not relieve the Contractor of responsibility to furnish a product that meets the Contract requirements.

Upon written request from the Contractor, a grout mix design accepted and used satisfactorily on a Department project may be accepted for use on other projects.

4.0 SAMPLING AND PLACEMENT

The Engineer will determine the locations to sample grout and the number and type of samples collected for field and laboratory testing. Use API RP 13B-1 for field testing grout flow and density of neat cement grout. The compressive strength of the grout will be considered the average compressive strength test results of 3 cube or 2 cylinder specimens at 28 days.

Do not place grout if the grout temperature is less than 50°F (10°C) or more than 90°F (32°C) or if the air temperature measured at the location of the grouting operation in the shade away from artificial heat is below 40°F (4°C).

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

Control grout delivery so the interval between placing batches in the same component does not exceed 20 minutes. Place grout before the time between adding the mixing water and placing the grout exceeds that in the table below.

ELAPSED TIME FOR PLACING GROUT (with continuous agitation)		
Air or Grout Temperature Whichever is Higher	**Maximum Elapsed Time**	
	No Set Retarding Admixture Used	**Set Retarding Admixture Used**
90°F (32°C) or above	30 min.	1 hr. 15 min.
80°F (27°C) through 89°F (31°C)	45 min.	1 hr. 30 min.
79°F (26°C) or below	60 min.	1 hr. 45 min.

5.0 MISCELLANEOUS

Comply with Articles 1000-9 through 1000-12 of the *Standard Specifications* to the extent applicable for grout in lieu of concrete.

HIGH STRENGTH BOLTS (5-25-10)

The 2006 Standard Specifications shall be revised as follows:

In Section **440-8(A) - General**, revise the third paragraph and insert a new paragraph four, respectively, as follows:

> Make sure that plain bolts and washers have a thin coat of lubricant at the time of installation.
>
> Use nuts that are pre-waxed by the producer/supplier prior to shipping to the project.

In Section **440-8(D) – Inspection** replace the first sub-paragraph under the third paragraph with the following:

> At least once each working day, place 3 calibration sample bolts of the same grade, size, representative length, and conditions as those under inspection in a tension indicating calibration device. Furnish a tension indicating calibration device certified by an approved independent testing lab within 12 calendar months prior to testing the bolts under inspection. The calibration device should be in good working order and provide accuracy within plus or minus 10 percent for the range of loads between 25,000 and 40,000 pounds. Place a washer under the part turned in tightening for each bolt if washers are so used in the structure. If no washer is used make sure that the material abutting the part turned is the same as that used in the structure.

PRESTRESSED CONCRETE MEMBERS (10-12-10)

The 2006 Standard Specifications shall be revised as follows:

Section 1078-1 - General, add the following after the second paragraph:

The intent of this section is to require the producer to provide prestressed concrete members that meet the Specifications and exhibit characteristics that are not objectionable to the Department.

(A) Producer Qualification

Producers of precast, prestressed concrete members are required to establish proof of their competency and responsibility in accordance with the Precast/Prestressed Concrete Institute's (PCI) Plant Certification Program in order to perform work for the project. Certification of the manufacturing plant under the PCI program and submission of proof of certification to the State Materials Engineer is required prior to beginning fabrication. Maintain certification at all times while work is being performed for the Department. Submit proof of certification following each PCI audit to the State Materials Engineer for continued

qualification. These same requirements apply to producers subcontracting work from the producer directly employed by the Contractor.

Employ producers PCI certified in Product Group B, Bridge Products, and in one of the appropriate categories as listed below:

- B2 Prestressed Miscellaneous Bridge Products: Includes solid piles, sheet piles and bent caps.
- B3 Prestressed Straight-Strand Bridge Members: Includes all box beams, cored slabs, straight-strand girders and bulb-tees, bridge deck panels, hollow piles, prestressed culverts and straight strand segmental components.
- B4 Prestressed Deflected-Strand Bridge Members: Includes deflected strand girders and bulb-tees, haunched girders, deflected strand segmental superstructure components and other post-tensioned elements.

Categories for elements not listed above will be as required by the project special provision or plans.

(B) Working Drawing Submittals

Prior to casting girders, submit complete working drawings to the Engineer for approval. The drawings shall detail the exact location and description of all casting holes, attachments and inserts cast in the member for both temporary and permanent applications. The casting holes, attachments and inserts are in association with, but not limited to: fall protection, overhang falsework, metal stay-in-place forms, solar platforms, temporary girder bracing, transit, erection, lifting and handling. If the plan notes indicate that the structure contains the necessary corrosion protection required for a Corrosive Site, epoxy coat, galvanize or metalize all metallic components except stainless steel and malleable iron components. Electroplating will not be allowed.

Section 1078-7 – Placing Strands, Ties, and Reinforcing Steel, replace the first paragraph with the following:

Position strands, ties, supports, reinforcing bars of the sizes shown on the plans and bearing plates in accordance with the detailed dimensions shown on the plans and effectively secure against displacement from their correct positions. The use of previously tensioned strands is not permitted. For prestressing strands, do not allow deflections or displacements of any kind between the end anchorages unless shown on the plans. Place the steel reinforcing in final position after tensioning of the strands. Bend all tie wires to the inside of the member so that the ends are farther from the edge than the material tied. Support bottom strands spacings not to exceed 20 feet by supports meeting the requirements of Article 1070-4 or by other approved means. Plastic supports may be used when approved.

Section 1078-7 – Placing Strands, Ties, and Reinforcing Steel, replace the third paragraph with the following:

Strand splices are only permitted at the end of a reel and when using a single strand jack. Ensure that the strand lengths to be spliced together have the same lay of wire to avoid unraveling and position the splice so that it does not fall within a member. Do not torch cut the ends of the spliced strand lengths. Cut by shears, abrasive grinders, or other means approved by the Engineer. No more than one strand splice per bed is allowed on an individual strand and the use of previously tensioned strands for splicing is not permitted.

Section 1078-8 – Tensioning Procedure, add the following to the beginning of the Section:

A producer quality control representative shall be present during strand tensioning.

Section 1078-9 – Placing Concrete, replace the entire Section with the following:

Place concrete in accordance with Article 1077-8 and the additional requirements of this article.

Upon completion of stressing strand, place concrete within a reasonable time to prevent contamination of the strands and reinforcing steel.

Place concrete for girders 54" or less in height, and concrete for all cored slabs and box beams, in 2 or more equal horizontal layers. Place concrete for girders over 54" in height in 3 horizontal layers. When placing concrete in 3 layers locate the top of the first layer approximately at the top of the bottom flange and locate the top of the second layer approximately at the top of the web. To prevent separation of surfaces between layers, do not allow the time between successive placements onto previously placed concrete to exceed 20 minutes, unless the previously placed concrete has not yet stiffened, as evidenced by the continuous effective use of vibration. Should shrinkage or settlement cracks occur, the Engineer reserves the right to require additional layers and/or vibration.

The requirement of the above paragraph may be waived with the permission of the Engineer if self consolidating concrete is used.

Internal or a combination of internal and external vibration is required as is necessary to produce uniformly dense concrete without honeycomb.

Place concrete in cold weather in accordance with the requirements of Article 420-9.

Place concrete in daylight unless an adequate lighting system meeting the approval of the Engineer is provided.

Do not exceed a temperature of 95°F in the freshly mixed concrete when placed in the forms.

Place the concrete in the bed in one continuous operation, finishing each member before proceeding to the next one. If the pour stops before the concrete in all the members in the bed is placed, start curing immediately. Do not place concrete in any remaining members in that bed setup once curing at elevated temperatures has begun.

When cored slabs and box beams are cast, employ an internal hold-down system to prevent the voids from moving. At least six weeks prior to casting cored slabs or box beams, submit to the Engineer for review and comment, detailed drawings of the proposed void material and hold-down system. In addition to structural details, indicate the location and spacing of the holds-downs. Submit the proposed method of concrete placement and of consolidating the concrete under the void.

Section 1078-11 – Transfer of Load, replace the first paragraph with the following:

A producer quality control representative or equivalent qualified personnel shall be present during removal of forms and during transfer of load.

Transfer load from the anchorages to the members when the concrete reaches the required compressive strength shown on the plans. Loosen and remove all formwork in one continuous operation as quickly as possible as soon as release strength is obtained. As soon as the forms are removed, and after the NCDOT Inspector has had a reasonable opportunity to inspect the member, transfer the load from the anchorages to the members as quickly as possible in one continuous operation using the approved detensioning sequence.

Section 1078-12 – Vertical Cracks in Prestressed Concrete Girders Prior to Detensioning, replace the entire Section with the following:

This Section addresses prestressed concrete members that have vertical casting cracks prior to strand detensioning. Certain types of these cracks have been determined by the Department to render the girders unacceptable.

Unacceptable cracked members are those with two or more vertical cracks spaced at a distance less than the member depth which extend into the bottom flange. Such members are not considered serviceable and will be rejected. Members with two or more vertical cracks spaced at a distance less than the member depth but do not extend into the bottom flange are subject to an engineering assessment. Such members may not be considered serviceable and may be rejected.

Members with one or more vertical cracks that extend into the bottom flange and are spaced at a distance greater than the member depth are subject to an engineering assessment to determine their acceptability. If this engineering assessment is required, submit, at no additional cost to the Department, a proposal for repairing the member and a structural evaluation of the member prepared by a North Carolina Licensed Professional Engineer. In the structural evaluation, consider the stresses under full service loads had the member not cracked and the effects of localized loss of prestress at the crack as determined by methods acceptable to the Department.

All members, except those defined as unacceptable, which exhibit vertical cracks prior to detensioning, shall receive a 7 day water cure as directed by the Engineer. The water cure shall begin within 4 hours after detensioning the prestressing strands and shall be a minimum of 3'-0" beyond the region exhibiting vertical cracks.

The Department has the final determination regarding acceptability of any members in question.

Section 1078-13 – Prestressed Concrete Girder Web Splitting, replace the entire Section with the following:

After detensioning of certain girders with draped strands, cracks occasionally occur in the webs at the ends of the girders. If such cracks occur, employ a method to remedy this condition on all subsequent girders of the same type and strand pattern. If debonding of strands is used, satisfy the following criteria:

(A) Do not debond the two straight strands in the top of the girder. Debond one half of the straight strands, as nearly as possible, in the bottom flange. As nearly as possible, debond one quarter of the straight strands in the bottom of girder 4 feet from each end of the girder and debond one quarter of the straight strands 2 feet from each end of the girder.

(B) Use a debonding pattern that is symmetrical about the vertical axis of the girder.

(C) Debond strands so that the center of gravity of the strands in the bottom of the girder remain within 1" of their original location at the end of the girder.

(D) Debond strands by encasing the strand in a conduit meeting the approval of the Engineer. Conduit may be rigid one-piece or rigid two-piece split sheathing. Do not use flexible conduit or sheathing.

No separate payment is made for debonding strands as payment is included in the contract unit price bid for prestressed concrete girders.

Section 1078-14 – Handling, Transporting and Storing, replace the second paragraph with the following:

Store all prestressed members on solid, unyielding, storage blocks in a manner to prevent torsion or objectionable bending. In handling prestressed concrete girders 54" or less in height, including cored slabs and box beams, maintain them in an upright position at all times and pick them up within 5 feet of the points of bearing and transport and store supported only within 3 feet of points of bearing. In handling prestressed concrete girders greater than 54" in height, maintain them in an upright position at all times and submit for approval the proposed method of lifting, transporting, and storing the girders. When requested, provide calculations to confirm girders are not overstressed by such operations.

Section 1078-15 – Final Finish, replace the entire Section with the following:

Finish prestressed concrete members that are intended for composite action with subsequently placed concrete or asphalt with a roughened surface for bonding. Make sure that no laitance remains on the surfaces to be bonded.

Rough float the tops of girders. Broom finish the top surface of the cored slab and box beam sections receiving an asphalt overlay. Rake the top surface of cored slab and box beam sections receiving a concrete overlay to a depth of 3/8". No surface finish is required for sides and bottom of the slab and beam sections except the exposed side of the exterior unit as noted below. Provide a resulting surface finish essentially the same color and surface finish as the surrounding concrete.

Provide a 3/4" chamfer along the bottom edges on ends and sides of all box beam and cored slab sections, top outside edges of exterior sections and acute corners of sections. Round the top edges on ends of all sections with a 1/4" finishing tool. Provide square corners along top edges on all sections along shear keys. Do not chamfer vertical edges at ends of sections.

Fill all voids in the diagonal face of the bottom flange of prestressed concrete girders and the outside face of exterior cored slabs and box beams with a sand-cement or other approved grout. Fill all voids in piles greater than 1/2" in diameter or depth as above. Provide a resulting surface finish essentially the same color and surface finish as the surrounding concrete. Repair voids greater than 1/4" in diameter or depth in other faces of these and other members except piles in a like manner. Where an excessive number of smaller voids exist in any member, the Engineer requires a similar repair.

Repair honeycomb, excessively large fins, and other projections as directed. Submit, at no additional cost to the Department, a proposal for repairing members with honeycomb, cracks, or spalls. Do not repair members containing honeycomb, cracks, or spalls until a repair procedure is approved and the member is inspected by the Engineer. Any appreciable impairment of structural adequacy that cannot be repaired to the satisfaction of the Engineer is cause for rejection.

Clean and fill holes caused by strand hold downs upon removal from the casting bed. Use patches of materials approved by the Engineer that develop strength at least equal to the minimum 28 day strength requirement for the concrete prior to approval of the member. Ensure that members are clean and surfaces have a uniform appearance.

Give the top surface of prestressed concrete panels a raked finish or other approved finish to provide an adequate bond with the cast-in-place concrete. As soon as the condition of the concrete permits, rake the top surface of the concrete making depressions of approximately 1/4". Take care when raking not to catch and pull the coarse aggregate.

Clean reinforcing bars exposed on the tops of girders and exterior cored slabs or box beams of mortar build up and excessive rust.

Apply epoxy protective coating to the ends of prestressed members as noted on the plans.

Section 1078-16 (A) – Alignment and Dimensional Tolerances, revise Table 1078-3 "Tolerances for Prestressed Cored Slabs" as follows:

Width - Differential of adjacent spans in the same structure	1/2"

Section 1078-16 (B) – Alignment and Dimensional Tolerances, revise Table 1078-4 "Tolerances for Prestressed Girders" as follows:

Position of holes for diaphragm bolts (K)	±1/4"

Section 1078-16 (F) – Alignment and Dimensional Tolerances, revise Table 1078-8 "Tolerances for Box Beams" to be consistent with cored slab tolerances as follows:

Width - Any one span	Plan width + 1/8" per joint
Width – Differential of adjacent spans in the same structure	1/2"

Section 1078-16 – Identification of Members, revise Section number to the following:

Section 1078-17

Section 1078-17 – Quality Control, revise Section number to the following:

Section 1078-18

ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS (6-11-07)

1.0 GENERAL

Installation and Testing of Adhesively anchored anchor bolts and dowels shall be in accordance with Section 420-13, 420-21 and 1081-1 of the Standard Specifications except as modified in this provision.

2.0 INSTALLATION

Installation of the adhesive anchors shall be in accordance with manufacturer's recommendations and shall occur when the concrete is above 40 degrees Fahrenheit and has reached its 28 day strength.

The anchors shall be installed before the adhesive's initial set ('gel time').

3.0 FIELD TESTING

Replace the third paragraph of Section 420-13 (C) with the following:

"In the presence of the Engineer, field test the anchor bolt or dowel in accordance with the test level shown on the plans and the following:.

Level One Field testing: Test a minimum of 1 anchor but not less than 10% of all anchors to 50% of the yield load shown on the plans. If less than 60 anchors are to be installed, install and test the required number of anchors prior to installing the remaining anchors. If more than 60 anchors are to be installed, test the first 6 anchors prior to installing the remaining anchors, then test 10% of the number in excess of 60 anchors.

Level Two Field testing: Test a minimum of 2 anchors but not less than 10% of the all anchors to 80% of the yield load shown on the plans. If less than 60

anchors are to be installed, install and test the required number of anchors prior to installing the remaining anchors. If more than 60 anchors are to be installed, test the first 6 anchors prior to installing the remaining anchors, then test 10% of the number in excess of 60 anchors.

Testing should begin only after the Manufacturer's recommended cure time has been reached. For testing, apply and hold the test load for three minutes. If the jack experiences any drop in gage reading, the test must be restarted. For the anchor to be deemed satisfactory, the test load must be held for three minutes with no movement or drop in gage reading."

4.0 REMOVAL AND REPLACEMENT OF FAILED TEST SPECIMENS:

Remove all anchors and dowels that fail the field test without damage to the surrounding concrete. Redrill holes to remove adhesive bonding material residue and clean the hole in accordance with specifications. For reinstalling replacement anchors or dowels, follow the same procedures as new installations. Do not reuse failed anchors or dowels unless approved by the Engineer.

5.0 USAGE

The use of adhesive anchors for overhead installments is not permitted without written permission from the Engineer.

6.0 BASIS OF PAYMENT

No separate measurement or payment will be made for furnishing, installing, and testing anchor bolts/dowels. Payment at the contract unit prices for the various pay items will be full compensation for all materials, equipment, tools, labor, and incidentals necessary to complete the work.

CURING CONCRETE **(6-12-09)**

The 2006 Standard Specifications shall be revised as follows:

Replace the first paragraph of Section **420-15(A) – Curing Concrete – General** with the following:

Unless otherwise specified in the contract, use any of the following methods except for membrane curing compounds on bridge deck and approach slab, or on concrete which is to receive epoxy protective coating in accordance with 420-18. Advise the Engineer in advance of the proposed method. Have all material, equipment, and labor necessary to promptly apply the curing on the site before placing any concrete. Cure all patches in accordance with this article. Improperly cured concrete is considered defective.

Replace the third paragraph of Section **420-15(C) – Curing Concrete – Membrane Curing Compound Method** with the following:

Seal the surface with a single uniform coating of the specified type of curing compound applied at the rate of coverage recommended by the manufacturer or as directed, but not less than 1 gallon per 150 square feet of surface area.

PILE DRIVING ANALYZER **(11-17-06)**

THE ENGINEER WILL DETERMINE THE NEED FOR "PDA" TESTING.

1.0 GENERAL

This special provision governs driving piles with a pile driving analyzer (PDA) in accordance with the plans and as directed by the Engineer. The PDA test method is described in ASTM D4945, "Standard Test Method for High-Strain Dynamic Testing of Piles". Install piles in accordance with Section 450 of the Standard Specifications and this provision.

Submit the proposed pile driving methods and equipment (Pile Driving Equipment Data Form) in accordance with the Submittal of Working Drawings Special Provision and the Standard Specifications. The Engineer will respond with preliminary approval or rejection of the proposed pile driving methods and equipment within 10 calendar days. Preliminary approval is required before driving piles with a PDA. Notify the Engineer of the pile driving schedule a minimum of 14 calendar days in advance.

Either a PDA Consultant or the NCDOT Geotechnical Engineering Unit, as directed by the Engineer, shall perform PDA testing and analysis. If required, retain a PDA Consultant and submit experience documentation with the proposed pile driving methods and equipment.

The Engineer will determine the number of piles and which piles to be tested with the PDA based upon the subsurface conditions and the pile installation sequence and progress.

The Engineer will complete the review of the proposed pile driving methods and equipment and provide the required driving resistance within 10 calendar days after the Engineer receives the PDA report or the Geotechnical Engineering Unit completes the PDA testing. A PDA report for PDA testing on multiple piles may be required as directed by the Engineer before the 10 day time period begins.

2.0 PREQUALIFICATION AND EXPERIENCE REQUIREMENTS

Use a PDA Consultant prequalified by the Contractual Services Unit of the Department for Pile Driving Analyzer work (work code 3060).

Submit documentation that the PDA Consultant has successfully completed at least 5 PDA testing projects within the last 3 years of a scope and complexity similar to that anticipated for this project. Documentation should include the General Contractor and Owner's name and current contact information with descriptions of each past project. Also, submit documentation of experience with PDA manufactured by Pile Dynamics, Inc and the CAse Pile Wave Analysis Program (CAPWAP).

Provide a list of PDA Operators and the Project Engineer that will be assigned to this project. Submit documentation for each PDA Operator verifying employment with the

PDA Consultant and a minimum of 1 year experience in collecting PDA data with past projects of scope and complexity similar to that anticipated for this project. Submit documentation for the Project Engineer verifying employment with the PDA Consultant, registration as professional engineer in North Carolina and a minimum of 5 years experience in PDA testing and analysis with past projects of scope and complexity similar to that anticipated for this project. Documentation should include resumes, references, certifications, project lists, experience descriptions and details, etc.

3.0 PREPARATION FOR PDA TESTING

Provide piles for PDA testing that are 5 ft (1.5 m) longer, or as directed by the Engineer, than the estimated pile lengths shown on the plans. Supply 110 V, 60 Hz, 30 Amp of AC electrical power to operate the PDA equipment. Direct current welders or non-constant power sources are unacceptable.

Provide a suitable shelter to protect the PDA equipment and operator from conditions of sun, water, wind and temperature. The shelter should have a minimum floor size of 6 ft x 6 ft (2 m x 2 m) and a minimum roof height of 8 ft (2.5 m). If necessary, heat or cool the shelter to maintain a temperature between 50 and 85 degrees F (10 and 30 degrees C). Place the shelter within 75 ft (23 m) of the pile such that the PDA cables reach the computer and the operator can clearly observe the pile. The Engineer may waive the shelter requirement if weather conditions allow.

Drill up to a total of 16 bolt holes in either 2 or 4 sides of the pile, as directed by the PDA Consultant or the Engineer, at an approximate distance equal to 3 times the pile diameter below the head of the pile. If the PDA Consultant or the Engineer choose to drill the bolt holes, provide the necessary equipment, tools and assistance to do so. A hammer drill is required for concrete piles and up to 2 hours may be required to drill the holes.

Lift, align and rotate the pile to be tested with the PDA as directed by the PDA Consultant or the Engineer. Place the pile in the leads and template so that the PDA instruments and their accompanying wires will not be damaged.

The PDA Consultant or the Engineer will furnish the PDA measuring instruments and materials for installing the instruments. Attach the PDA instruments as directed by the PDA Consultant or the Engineer after the pile is placed in the leads and the template.

4.0 PDA TESTING

Use only the preliminarily approved pile driving methods and equipment to drive piles with the PDA instruments attached. Drive the pile as directed by the PDA Operator or the Engineer in order to measure the wavespeed of the pile.

Drive the pile to the required bearing capacity and specified tip elevation, if applicable, as shown on the plans or as directed by the PDA Consultant or the Engineer. During pile driving, the PDA will be used to evaluate, including but not limited to, the

following: hammer performance, bearing capacity, distribution of soil resistance, pile driving stresses, energy transfer, pile integrity and various soil parameters such as quake and damping.

The PDA Operator or the Engineer may require the Contractor to modify the pile installation procedure during driving as follows:

- Reduce the hammer energy
- Drive deeper or shallower because of variations in the subsurface conditions
- Readjust the transducers
- Realign the pile

The Contractor is responsible in terms of both actual expense and time delays for any damage to the PDA instruments and supporting equipment due to the Contractor's fault or negligence. Replace any damaged equipment at no additional cost to the Department.

5.0 REDRIVING PILES

When directed by the Engineer, reattach the PDA instruments and restrike or redrive the pile in accordance with Section 4.0 above and Subarticle 450-7(E) of the Standard Specifications. Obtain the required stroke and penetration (at least 6 in or 150 mm) or as directed by the PDA Operator or the Engineer. The PDA Operator or the Engineer will record dynamic measurements during restriking and redriving. The Engineer may require restriking and redriving more than once on the same pile. The Engineer will determine when PDA testing has been satisfactorily completed.

6.0 CAPWAP ANALYSIS AND PDA REPORT

The PDA Consultant shall perform analysis of the PDA raw data with the CAPWAP (version 2006 or later). At a minimum, analysis is required for a hammer blow near the end of initial drive and for each restrike and redrive. Additional CAPWAP analysis may be required as determined by the PDA Consultant or the Engineer.

Submit three hard copies and an electronic copy (pdf or jpeg format on CD or DVD) of a PDA report sealed by the Project Engineer within 7 calendar days after field testing is complete. The PDA report shall include but not be limited to the following:

A. Title Sheet
   - NCDOT TIP number and WBS element number
   - Project description
   - County
   - Bridge station number
   - Pile location

- Personnel
- Report date

B. Introduction

C. Site and Subsurface Conditions (including water table elevation)

D. Pile Details

- Pile type and length
- Required bearing capacity and factor of safety
- Concrete compressive strength and/or steel pile yield strength
- Pile splice type and locations
- Pile batter
- Installation methods including use of jetting, preaugering, spudding, vibratory hammer, template, barge, etc.

E. Driving Details

- Hammer make, model and type
- Hammer and pile cushion type and thickness
- Pile helmet weight
- Hammer efficiency and operation data including fuel settings, bounce chamber pressure, blows per minute, equipment volume and pressure
- Ground or mud line elevation and template reference elevation at the time of driving
- Final pile tip elevation
- Driving resistance (ram stroke, blows per foot (0.3 meter) and set for last 10 hammer blows)
- Restrike and redrive information

F. PDA field work details

G. CAPWAP analysis results

- Table showing percent skin and tip, skin and toe damping, skin and toe quake and match quality

H. Summary/Conclusions

I. Attachments

- Boring log(s)
- Pile Driving Equipment Data Form (from Contractor)

- Field pile driving inspection data (from Engineer)
- Accelerometer and strain gauge locations
- Accelerometer and strain gauge serial numbers and calibration information
- PDA hardware model and CAPWAP software version information
- Electronic copy of all PDA raw data and executable CAPWAP input and output files (version 2006 format)

7.0 MEASUREMENT AND PAYMENT

The complete and accepted PDA testing will be paid for at the unit bid price for "PDA Testing" per each. Include in the unit bid price for "PDA Testing" all costs for providing the PDA, PDA instruments and materials for installing the instruments and recording the dynamic measurements the first time the pile is tested with the PDA. Costs for providing these items for the same pile after the pile is initially tested with the PDA will be considered incidental to the unit bid price for "Pile Redrives". Also include in the unit bid price for "PDA Testing" all costs for performing the CAPWAP analysis on data collected during initial drive, restrikes and redrives and preparing and submitting the PDA report. No payment for "PDA Testing" will be made if the PDA report submitted is incomplete as described in Section 6.0. No payment for "PDA Testing" will be made if the Department performs PDA testing. If the Department does not perform PDA testing, the number of "PDA Testing" per pile will be equal to one.

The complete and accepted PDA assistance will be paid for at the unit bid price for "PDA Assistance" per each. Include in the unit bid price for "PDA Assistance" all costs for PDA preparation and support including all materials, labor, tools, equipment, mobilization and incidentals necessary to complete the work described in this provision excluding the costs for the PDA testing described above. Costs for PDA preparation and support for restrikes and redrives will not be paid for separately. The number of "PDA Assistance" per pile will be equal to one for each pile tested with the PDA.

The cost of the pile and the installation including driving, restriking and redriving will be paid for separately in accordance with the Standard Specifications and will not be part of these PDA pay items.

STANDARD SPECIAL PROVISION

ERRATA

(7-21-09) Z-4

Revise the *Standard Specifications for Roads and Structures July 2006* on all projects as follows:

Division 1

Page 1-1, replace AREA - American Railway Engineering Association with ***American Railway Engineering and Maintenance of Way Association.***

Page 1-7, remove –**L**- in middle of page after INVITATION TO BID and before LABORATORY.

Page 1-25, 102-16(R), move 2nd paragraph to left margin. It is not a part of this subarticle, but part of the entire article.

Division 2

Page 2-9, Subarticle 225-1(C), 1st paragraph, 2nd line, last word, add a "d" to make the word grade become ***graded.***
Page 2-15, Subarticle 226-3, 5th paragraph, first line, replace the word *in* with the word ***is.***
Page 2-23, Subarticle 235-4(B)(9), at the end of the sentence, replace finished greater with finished ***grade.***
Page 2-28, Article 260-3, First paragraph, second line, remove the word *foot.*

Division 3

Page 3-13, Article 340-4, Second paragraph, change Flowable Backfill to Flowable ***Fill***

Division 4

Page 4-29, Article 420-13(A) Description, change reference from Section 1082 to ***Article 1081-6.***

Page 4-40 Subarticle 420-17(F) first line, change Subarticle 420-17(B) to ***(B) herein.***

Page 4-70, Article 442-13(B) Second sentence, change SSPC Guide 6I to SSPC Guide ***6.***

Pages 4-72, 4-74, 4-76, at the top of the page, substitute the heading Section 452 with Section ***450.***

Page 4-79, at the top of the page, substitute the heading Section 450 with Section ***452***

Page 4-80, change 452-7 to 452-***6*** at the top of the page.

Page 4-80, change Pay Item ___Steel Pile Retaining Walls, to ***Sheet*** Pile Retaining Walls.

Page 4-88, 462-4, Title, Replace last word Measurement with the word ***PAYMENT***

Division 5

Page 5-8, Article 501-15 Measurement and Payment, delete the 4th paragraph that begins The quantity of lime, measured as provided …

Page 5-14, Article 520-11 Measurement and Payment, first paragraph, second line, delete *will be.*

Division 6

Page 6-3, Article 600-9, 2nd Paragraph on this page, replace 818-5 with 818-***4***.

Pages 6-30 and 31, Subarticle 610-3(A)(13) Move 2 paragraphs from the margin to the right under the number (13).

Page 6-43, Article 610-8, 4th paragraph, remove the first ***the***

Page 6-44, 2nd full paragraph, 1st sentence, delete the first ***and*** and add ***transverse*** just before cross-slope control.

Page 6-51, at the top of the page, add ***610-14*** on the same line, and just before the heading MAINTENANCE.

Page 6-53, Article 620-4 sixth paragraph, second line; the word that should be ***which***.

Page 6-66, title, Replace EXISTNG with **EXISTING**

Page 6-66, Article 657-1, Description, first sentence, replace PS/AR (hot-poured rubber asphalt with ***hot applied joint sealer***.

Page 6-66, Article 657-2, replace PS/AR (Hot-Poured Rubber Asphalt with the following:

Item	Section
Hot Applied Joint Sealer	***1028-2***

Page 6-67, at the top of the page, substitute the heading Section 654 with Section ***657.***

Page 6-67, Article 657-3 Construction Methods, 2nd paragraph, replace PS/AR sealant with ***hot applied joint sealer***.

Page 6-71, 660-9(B)(1), Replace the first sentence of the first paragraph with the following:

Using the quantities shown in *Table 660-1*, apply asphalt material to the existing surface followed by an application of No. 78 M or lightweight aggregate.

Page 6-89; Add a period at the end of the last sentence at the bottom of the page.

Page 6-90, Article 663-5, first paragraph, first sentence, change 50oF to ***50°F;*** third paragraph, fourth sentence change 325oF to ***325°F.***

Division 7

Page 7-12, at the top of the page, substitute the heading Section 710 with Section ***700***.

Page 7-15, Article 710-9, 4th paragraph, last line, change 710-11(B) to 710-1***0***(B).

Division 8

Page 8-13, Article 808-3, 4th Paragraph, third line, replace Eexcavation with ***Excavation***

Page 8-35, Article 848-2, Item: Replace Cncrete with ***Concrete***

Division 9

Page 9-2, add ***901-3*** just before CONSTRUCTION METHODS

Division 10

Page 10-12, near bottom of page add ***(C)*** before Proportioning and Mixing of Modified Compositions, which should be bold type.

Page 10-28, at the top of the page, substitute Section 100***6*** for 1005.

Page 10-54, Subarticle 1018-2A), First line, substitute ***(B)*** for II, third line, substitute ***(B)(2)*** for II-b.

Pages 10-56, 10-58, 10-60 at the top of the page, substitute Section 1018 with Section ***1020.***

Page 10-84, Table 1042-1, Class 2, Maximum, change from 23r to ***23***.

Page 10-84, Article 1042-2 Testing, last sentence, replace the word alterations with the word ***cycles***.

Page 10-100, Table 1056-1, replace on the line for Trapezoidal Tear Strength:

Type 1	Type 2	Type 3		Type 4
		Class A	Class B	Soil Stabilization
45 lb	***75*** lb	--	--	***75*** lb

Page 10-116, Subarticle 1070-10, first paragraph, second sentence, add ***or*** just before cold-forged sleeve.

Pages 10-136 through 10-147, at the top of the page, substitute Section 1074 with Section ***1072***.

Page 10-157, Article 1077-11, first paragraph, change the reference from Subarticle 420-18(B) to Subarticle 420-***17***(B).

Page 10-200, Subarticle 1080-14(B), change reference to ASTM D335***9***

Page 10-211, at the top of the page, substitute Section 1081 with Section ***1082.***

Page 10-229, add ***1088-6 BLANK*** on the line above 1088-7 TUBULAR MARKERS.

Page 10-244, add **1089-10 *BLANK*** and **1089-11 *BLANK*** on the lines just above 1089-12 FLAGGER.

Page 10-272, delete Article 1098-6 in its entirety. Renumber Articles 1098-7 through 1098-17 as Articles 1098-6 through 1098-16 consecutively.

Division 12

Page 12-21 Add ***1266-2*** just before the heading MATERIALS.

Division 14

Page 14-33, Article 1413-6, first paragraph, first sentence, first line, replace made with ***paid for.***

Division 15

- Page 15-2 add ***1500-4*** just before the heading WEEKEND, NIGHT AND HOLIDAY WORK.
- Page 15-4, Subarticle 1505-3(A)(2), replace the 2nd line with the following: ***Provide shielding or shoring as required under Section 150 or as required elsewhere in the contract.***
- Page 15-5, add ***1505-6*** on the same line and just before the heading MEASUREMENT AND PAYMENT. (Remove the period after PAYMENT.)
- Page 15-6, Article 1505-6(3), delete *in Section 1175* and replace it with *elsewhere in the contract.*
- Page 15-8, add **1510-4** on the same line and just before the heading MEASUREMENT AND PAYMENT.
- Page 15-10, substitute **BLANK** for CONSTRUCTION REQUIREMENTS on the same line and just before 1515-4.
- Page 15-10, substitute **CONSTRUCTION REQUIREMENTS** for General Requirements
- Page 15-10, Article 1515-4, add ***(D)*** just before the bolded Fire Hydrants.
- Page 15-13, Article 1520-3, 8th paragraph, add ***pipe*** after diameter.
- Page 15-22, add ***1540-3*** on the same line and just before the heading CONSTRUCTION REQUIREMENTS.
- Page 15-28, Replace 1550-6 METHOD OF MEASUREMENT with ***MEASUREMENT AND PAYMENT.***

Division 16

- Page 16-12, Subarticle 1632-1(C) ¼ Inch hardware cloth, change the minimum width from 24 inches to 48 inches.

Division 17

- Page 17-19, Subarticle 1725-2 Material, Second paragraph, change Article 1098-7 to 1098-***8***
- Page 17-20, Subarticle 1726-2 Material, Second paragraph, change Article 1098-8 to 1098-**9**

END

STANDARD SPECIAL PROVISION

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

(3-18-03) Z-04a

Within quarantined area

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

Originating in a quarantined county

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

Contact

Contact the N.C. Department of Agriculture/United States Department of Agriculture at 1-800-206-9333, 919-733-6932, or *http://www.ncagr.com/plantind/* to determine those specific project sites located in the quarantined area or for any regulated article used on this project originating in a quarantined county.

Regulated Articles Include

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

MINIMUM WAGES

(7-21-09) Z-5

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

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

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

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

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

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

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

AWARD OF CONTRACT

(6-28-77) Z-6

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

ATTACHMENT 'A'

LISTING OF MBE & WBE SUBCONTRACTORS

LISTING OF MBE & WBE SUBCONTRACTORS

Sheet _____ of _____

FIRM NAME AND ADDRESS	MBE or WBE	ITEM NO.	ITEM DESCRIPTION	* AGREED UPON UNIT PRICE	** DOLLAR VOLUME OF ITEM

Contract No. _____ **County** _____ **Firm** _____

This form must be completed in order for the Bid to be considered responsive and be publicly read.

Bidders with no MBE and/or WBE participation must so indicate this on the form by entering the word or number *zero*.

LISTING OF MBE & WBE SUBCONTRACTORS

Sheet _____ of _____

FIRM NAME AND ADDRESS	MBE or WBE	ITEM NO.	ITEM DESCRIPTION	* AGREED UPON UNIT PRICE	** DOLLAR VOLUME OF ITEM

Contract No. _____ **County** _____ **Firm** _____

This form must be completed in order for the Bid to be considered responsive and be publicly read.

Bidders with no MBE and/or WBE participation must so indicate this on the form by entering the word or number *zero*.

LISTING OF MBE & WBE SUBCONTRACTORS

Sheet _____ of _____

FIRM NAME AND ADDRESS	MBE or WBE	ITEM NO.	ITEM DESCRIPTION	* AGREED UPON UNIT PRICE	** DOLLAR VOLUME OF ITEM

Contract No. _____ **County** _____ **Firm** _____

This form must be completed in order for the Bid to be considered responsive and be publicly read.

Bidders with no MBE and/or WBE participation must so indicate this on the form by entering the word or number *zero*.

LISTING OF MBE & WBE SUBCONTRACTORS

Sheet _____ of _____

FIRM NAME AND ADDRESS	MBE or WBE	ITEM NO.	ITEM DESCRIPTION	* AGREED UPON UNIT PRICE	** DOLLAR VOLUME OF ITEM

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

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

** Dollar Volume of MBE Subcontractor $ _____

MBE Percentage of Total Contract Bid Price _____ %

** Dollar Volume of WBE Subcontractor $ _____

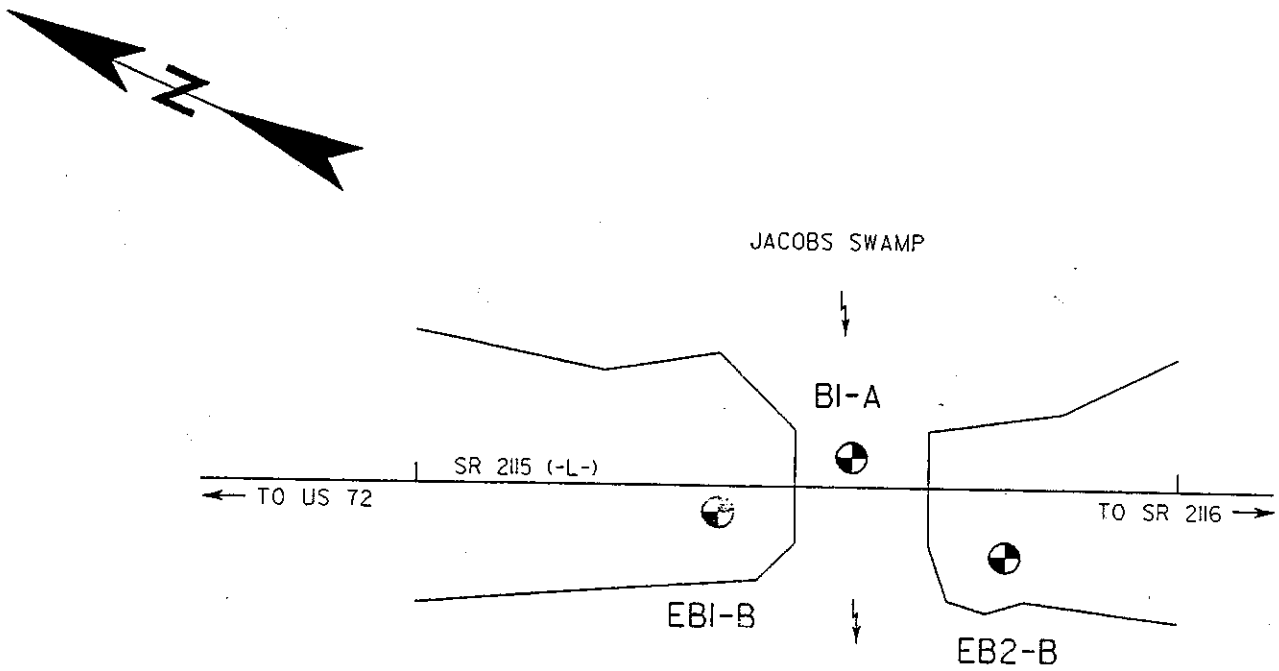
WBE Percentage of Total Contract Bid Price _____ %

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

GEOTECHNICAL ATTACHMENT 'B'

The following Geotechnical Bore Holes Sections are for information only and are not a part of this contract. These information are for investigation only and no accuracy is implied or guaranteed. No claim will be allowed as a result of the use of this information.

SR 2115 (-L-) OVER JACOBS SWAMP



9+00 10+00 11+00

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 6.503472	ID. B-3898	COUNTY ROBESON	GEOLOGIST K. B. MILLER
SITE DESCRIPTION BRIDGE NO. 41 ON SR 2115 OVER JACOBS SWAMP			GROUND WATER
BORING NO. EBI-B	BORING LOCATION 9+80	OFFSET 7.0' RT.	ALIGNMENT -L-
COLLAR ELEVATION 112.0'	NORTHING	EASTING	0 HR. N.M.
TOTAL DEPTH 70.4'	DRILL MACHINE MOBILE B-47	DRILL METHOD ROTARY W/MUD	HAMMER TYPE MANUAL
START DATE 6/26/03	COMPLETION DATE 6/26/03	SURFACE WATER DEPTH N/A	24 HR. ARTESIAN

ELEV.	DEPTH (FT.)	BLOW COUNT 0.5'	0.5'	0.5'	PEN. (FT.)	BLOWS PER FOOT (0 25 50 75 100)	SAMPLE NUMBER	MOI.	LOG	SOIL AND ROCK DESCRIPTION
112.0	0.0	3	5	4	1	9				ASPHALT
110.0	3.9	3	3	2	1	5	SS-16			TAN FINE TO COARSE SAND, SAT. (FILL)
105.0	8.9	2	5	9	1	14				GRAY FINE TO COARSE SAND, SAT. (ALLUVIUM)
100.0	13.9	6	3	2	1	5				
95.0	18.9	2	1	2	1	3	SS-17			GRAY SILTY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)
90.0	23.9	5	5	2	1	7	SS-18			GRAY CLAYEY FINE TO COARSE SAND, SAT.
	28.9	10	15	19	1	34				
80.0	33.9	7	10	13	1	23				
75.0	38.9	10	14	11	1	25	SS-19			GRAY MICACEOUS FINE TO COARSE SAND, SAT. (BLACK CREEK FORMATION)
70.0	43.9	5	6	11	1	17				
65.0	48.9	7	13	14	1	27				
60.0	53.9	6	8	11	1	19	SS-20			DARK GRAY SANDY SILTY CLAY WITH LIGNITE, WET
55.0	58.9	7	8	9	1	17				
50.0	63.9	4	7	10	1	17				
45.0	68.9	7	7	14	1	21				

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 6.503472	ID. B-3898	COUNTY ROBESON	GEOLOGIST K. B. MILLER
SITE DESCRIPTION BRIDGE NO. 41 ON SR 2115 OVER JACOBS SWAMP			GROUND WATER
BORING NO. EBI-B	BORING LOCATION 9+80	OFFSET 7.0' RT.	ALIGNMENT -L-
COLLAR ELEVATION 112.0'	NORTHING	EASTING	0 HR. N.M.
TOTAL DEPTH 70.4'	DRILL MACHINE MOBILE B-47	DRILL METHOD ROTARY W/MUD	HAMMER TYPE MANUAL
START DATE 6/26/03	COMPLETION DATE 6/26/03	SURFACE WATER DEPTH N/A	24 HR. ARTESIAN

ELEV.	DEPTH (FT.)	BLOW COUNT 0.5	0.5	0.5	PEN. (FT.)	BLOWS PER FOOT 0 25 50 75 100	SAMPLE NUMBER	▼/MOI.	LOG	SOIL AND ROCK DESCRIPTION
						BORING TERMINATED AT ELEV. 41.6 FEET IN VERY STIFF SANDY SILTY CLAY				

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 6.503472	ID. B-3898	COUNTY ROBESON	GEOLOGIST K. B. MILLER
SITE DESCRIPTION BRIDGE NO. 41 ON SR 2115 OVER JACOBS SWAMP			GROUND WATER
BORING NO. B1-A	BORING LOCATION 10+15	OFFSET 8.0' LT.	ALIGNMENT -L-
COLLAR ELEVATION 105.5'	NORTHING	EASTING	0 HR. N.M.
			24 HR. N.M.
TOTAL DEPTH 83.8'	DRILL MACHINE MOBILE B-47	DRILL METHOD ROTARY W/MUD	HAMMER TYPE MANUAL
START DATE 6/25/03	COMPLETION DATE 6/25/03	SURFACE WATER DEPTH 4.8'	

ELEV.	DEPTH (FT.)	BLOW COUNT 0.5'	0.5'	0.5'	PEN. (FT.)	BLOWS PER FOOT (0 25 50 75 100)	SAMPLE NUMBER	MOI.	LOG	SOIL AND ROCK DESCRIPTION
105.5	0.0	1	1	2	1	3				
	2.3	4	6	7	1	13	SS-7			TAN FINE TO COARSE SAND, SAT. (ALLUVIUM)
100.0	7.3	7	12	7	1	19	SS-8			
95.0	12.3	2	2	1	1	3	SS-9			GRAY SILTY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)
90.0	17.3	5	4	3	1	7				
85.0	22.3	7	11	15	1	26	SS-10	25%		GRAY SILTY FINE SANDY CLAY, WET
	27.3	8	11	15	1	26				
75.0	32.3	11	10	14	1	24	SS-11			GRAY MICACEOUS FINE TO COARSE SAND, SAT. (BLACK CREEK FORMATION)
70.0	37.3	3	6	9	1	15				
65.0	42.3	7	11	10	1	21				
60.0	47.3	5	6	8	1	14	SS-12			GRAY SILTY CLAY WITH LIGNITE, WET
55.0	52.3	5	8	9	1	17				
50.0	57.3	4	6	9	1	15	SS-13	43%		
45.0	62.3	9	12	26	1	38				
40.0	67.3	8	15	20	1	35	SS-14			

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 6.503472	ID. B-3898	COUNTY ROBESON	GEOLOGIST K. B. MILLER
SITE DESCRIPTION BRIDGE NO. 41 ON SR 2115 OVER JACOBS SWAMP			GROUND WATER
BORING NO. BI-A	BORING LOCATION 10+15	OFFSET 8.0' LT.	ALIGNMENT -L-
COLLAR ELEVATION 105.5'	NORTHING	EASTING	0 HR. N.M.
TOTAL DEPTH 83.8'	DRILL MACHINE MOBILE B-47	DRILL METHOD ROTARY W/MUD	HAMMER TYPE MANUAL
START DATE 6/25/03	COMPLETION DATE 6/25/03	SURFACE WATER DEPTH 4.8'	24 HR. N.M.

ELEV.	DEPTH (FT.)	BLOW COUNT 0.5'	0.5'	0.5'	PEN. (FT.)	BLOWS PER FOOT 0 25 50 75 100	SAMPLE NUMBER	MOI.	LOG	SOIL AND ROCK DESCRIPTION
30.0										
	77.3	7	16	18	1	X 34				GRAY MICACEOUS FINE TO COARSE SAND, SAT.
25.0										
	82.3	16	20	21	1	X 41	SS-15			
20.0						BORING TERMINATED AT ELEV. 21.7 FEET IN DENSE FINE TO COARSE SAND				
15.0										
10.0										
5.0										
0.0										
-5.0										
-10.0										
-15.0										
-20.0										
-25.0										
-30.0										
-35.0										
-40.0										

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 6.503472	ID. B-3898	COUNTY ROBESON	GEOLOGIST K. B. MILLER
SITE DESCRIPTION BRIDGE NO. 41 ON SR 2115 OVER JACOBS SWAMP			GROUND WATER
BORING NO. EB2-B	BORING LOCATION 10+55	OFFSET 18.0' RT.	ALIGNMENT -L-
COLLAR ELEVATION 111.7'	NORTHING 0.00	EASTING	0 HR. N.M.
TOTAL DEPTH 70.4'	DRILL MACHINE MOBILE B-47	DRILL METHOD ROTARY W/MUD	HAMMER TYPE MANUAL
START DATE 6/23/03	COMPLETION DATE 6/24/03	SURFACE WATER DEPTH N/A	24 HR. ARTESIAN

ELEV.	DEPTH (FT.)	BLOW COUNT 0.5'	0.5'	0.5'	PEN. (FT.)	BLOWS PER FOOT (0 25 50 75 100)	SAMPLE NUMBER	MOI.	LOG	SOIL AND ROCK DESCRIPTION
111.7	0.0	1	4	4	1	8				
110.0							SS-1			TAN FINE TO COARSE SAND, SAT. (FILL)
	3.9	2	2	1	1	3				
105.0										
	8.9	13	15	14	1	29	SS-2			GRAY FINE TO COARSE SAND, SAT. (ALLUVIUM)
100.0										
	13.9	6	3	2	1	5				
95.0										
	18.9	2	2	2	1	4	SS-3			GRAY SILTY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)
90.0										
	23.9	4	4	9	1	13				
0										
	28.9	8	12	19	1	31	SS-4			GRAY SILTY FINE SANDY CLAY, WET
80.0										
	33.9	6	11	14	1	25				
75.0										
	38.9	6	10	11	1	21	SS-5			GRAY MICACEOUS FINE TO COARSE SAND, SAT. (BLACK CREEK FORMATION)
70.0										
	43.9	5	6	9	1	15				
65.0										
	48.9	8	9	10	1	19				
60.0										
	53.9	7	10	11	1	21	SS-6			GRAY SANDY SILTY CLAY WITH LIGNITE, WET
55.0										
	58.9	4	8	9	1	17				
50.0										
	63.9	5	8	9	1	17				
45.0										
	68.9	6	8	12	1	20				

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 6.503472	ID. B-3898	COUNTY ROBESON	GEOLOGIST K. B. MILLER
SITE DESCRIPTION BRIDGE NO. 41 ON SR 2115 OVER JACOBS SWAMP			GROUND WATER
BORING NO. EB2-B	BORING LOCATION 10+55	OFFSET 18.0' RT.	ALIGNMENT -L-
COLLAR ELEVATION 111.7'	NORTHING 0.00	EASTING	0 HR. N.M.
TOTAL DEPTH 70.4'	DRILL MACHINE MOBILE B-47	DRILL METHOD ROTARY W/MUD	HAMMER TYPE MANUAL
START DATE 6/23/03	COMPLETION DATE 6/24/03	SURFACE WATER DEPTH N/A	24 HR. ARTESIAN

ELEV.	DEPTH (FT.)	BLOW COUNT 0.5'	0.5'	0.5'	PEN. (FT.)	BLOWS PER FOOT 0 25 50 75 100	SAMPLE NUMBER	▼ MOI.	LOG	SOIL AND ROCK DESCRIPTION
						BORING TERMINATED AT ELEV. 41.3 FEET IN VERY STIFF SANDY SILTY CLAY				

ATTACHMENT 'C'

Environmental Permit

Wafa, Zaki H

From: Wafa, Zaki H
Sent: Thursday, December 09, 2010 8:36 AM
To: Wafa, Zaki H
Subject: FW: B-3898 Bridge 41 Robeson County

TO OBTAIN THE NATIONWIDE PERMIT #3, PLEASE VISIT THE FOLLOWING WEBSITE:

http://www.saw.usace.army.mil/wetlands/NWP2007/nationwide-permits-2007.html

-----Original Message-----
From: Rerko, James J
Sent: Tuesday, December 07, 2010 4:49 PM
To: Wafa, Zaki H
Subject: FW: B-3898 Bridge 41 Robeson County

Zaki

Here's the COE authorization email for Bridge #41 in Robeson County.

Jim Rerko
Division 6 Environmental Officer

-----Original Message-----
From: Garrell, Nicky L
Sent: Friday, October 24, 2008 10:55 AM
To: Rerko, James J
Subject: RE: B-3898 Bridge 41 Robeson County

Jim, thanks for all your help

-----Original Message-----
From: Rerko, James J
Sent: Thursday, October 23, 2008 8:23 AM
To: Upole, Larry L; Garrell, Nicky L
Cc: Murphy, Ken; Gibson, Terry R
Subject: FW: B-3898 Bridge 41 Robeson County

Sonny / Nicky

Richard Spencer has authorized Bridge 41 along SR 2115 in Robeson County. The permit package will be placed within your mail bin today.

Jim

-----Original Message-----
From: Spencer, Richard K SAW [mailto:Richard.K.Spencer@saw02.usace.army.mil]
Sent: Wednesday, October 22, 2008 4:39 PM
To: Rerko, James J
Subject: RE: B-3898 Bridge 41 Robeson County

Jim,

This is to confirm that the proposed project as discussed below and in the field on 21 October 2008 qualifies for authorization by NWP #3 without notification to the Corps.

Richard
Richard K. Spencer
U.S. Army Corps of Engineers
Wilmington Regulatory Field Office

P.O. Box 1890 (Mail)
Wilmington, NC 28402-1890
69 Darlington Avenue (Location)
Wilmington, NC 28403
910-251-4172

-----Original Message-----
From: Rerko, James J [mailto:jjrerko@ncdot.gov]
Sent: Wednesday, October 22, 2008 8:33 AM
To: Spencer, Richard K SAW
Subject: B-3898 Bridge 41 Robeson County

Rich

NCDOT proposes to replace bridge 41 along SR 2115 in Robeson County. The existing bridge is a two-span 41.5 feet in length and has a width of 24 feet.
The proposed structure will be a two-span 82.2 feet with a width of 30 feet.

Jurisdictional wetland have been identified in all four quadrants of the bridge. Minimal impacts are proposed, i.e. <0.10 acre of permanent impacts.
The impacts will improve safety concerns along SR 2115. Additionally, there will be an off-site detour associated with this project.

Special Condition: The wetland boundary located within the construction corridor approved by this authorization shall be clearly marked by Orange Fabric Fence prior to any land disturbing activities. Impact to areas within the fencing are prohibited unless otherwise authorized by this certification.

As per our discussion in the field on 10/21/08, this project is consistent with the U.S. Army Corps of Engineers Nationwide Permit #3. Please reply to this email confirming that the project qualifies as a NWP#3 with notification.

Jim Rerko
Division 6 Environmental Officer

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

Water Quality Certification N°. 3687

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT NUMBERS: 3 (MAINTENANCE), 4 (FISH AND WILDLIFE HARVESTING, ENHANCEMENT, AND ATTRACTION DEVICES AND ACTIVITIES), 5 (SCIENTIFIC MEASUREMENT DEVICES—25 CUBIC YARDS FOR WEIRS AND FLUMES), 6 (SURVEY ACTIVITIES—25 CUBIC YARDS FOR TEMPORARY PADS), 7 (OUTFALL STRUCTURES AND ASSOCIATED INTAKE STRUCTURES), 19 (MINOR DREDGING), 20 (OIL SPILL CLEANUP), 22 (REMOVAL OF VESSELS), 25 (STRUCTURAL DISCHARGE), 30(MOIST SOIL MANAGEMENT FOR WILDLIFE), 32 (COMPLETED ENFORCEMENT ACTIONS), 36 (BOAT RAMPS [IN NONWETLAND SITES]), AND REGIONAL PERMIT 197800056 (PIERS, DOCKS AND BOATHOUSES), AND REGIONAL PERMIT 197800125 (BOAT RAMPS) AND RIPARIAN AREA PROTECTION RULES (BUFFER RULES)

Water Quality Certification Number 3687 is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H, Section .0500 and 15 NCAC 2B .0200 for the discharge of fill material to waters and wetland areas which are waters of the United States as described in 33 CFR 330 Appendix A (B) (3, 4, 5, 6, 7, 19, 20, 22, 25, 30, 32, and 36) of the Corps of Engineers regulations and Regional Permits 197800056 and 19780125 and for the Riparian Area Protection Rules (Buffer Rules) in 15A NCAC 2B .0200.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Activities meeting any one (1) of the following thresholds or circumstances require *written approval* for a 401 Water Quality Certification from the Division of Water Quality (the "Division"):

a. Impacts equal or greater than 40 linear feet of additional permanent stream impact at an existing stream crossing location, or
b. Temporary or permanent impacts equal to or exceeding: one-third (1/3) acre of wetlands East of Interstate-95, or one-tenth (1/10) of acre of wetlands West of Interstate-95; or
c. Any impact associated with a Notice of Violation or an enforcement action initiated by the Division and/or the Division of Land Resources; or
d. Projects with any impacts to streams, wetlands, and/or waters that have received a Notice of Violation from the Division and/or Division of Land Resources; or
e. Any impacts to streams and/or buffers in the Neuse, Tar-Pamlico, Randleman and Catawba River Basins (or any other basins with Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless* the activities are listed as "EXEMPT" from these Rules.

In accordance with North Carolina General Statute Section 143-215.3D(e), written approval for a 401 Water Quality General Certification must include the appropriate fee. If a project also requires a CAMA Permit, then one payment to both agencies shall be submitted and will be the higher of the two fees.

Activities included in this General Certification and below the thresholds listed above *do not* require written approval from the Division of Water Quality as long as they comply with the Conditions of Certification listed below. If any of these Conditions cannot be met, written approval from the Division is required.

Water Quality Certification N°. 3687

Conditions of Certification:

1. No Impacts Beyond Those Authorized for this General Certification

   No waste, spoil, solids, or fill of any kind shall occur in wetlands, waters, or riparian areas beyond the thresholds established for use of this General Certification, or beyond the footprint of the impacts authorized in the written approval, including incidental impacts. All construction activities, including the design, installation, operation, and maintenance of sediment and erosion control Best Management Practices, shall be performed so that no violations of state water quality standards, statutes, or rules occur.

2. Standard Erosion and Sediment Control Practices

   Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices:

   a. Design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
   b. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
   c. Reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.
   d. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times. ,except for publicly funded linear transportation projects when materials can be accessed offsite in a timely manner.
   e. If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), Trout (Tr), SA, WS-I, WS-II, High Quality (HQW), or Outstanding Resource (ORW) waters, then the sediment and erosion control requirements contained within *Design Standards in Sensitive Watersheds* (15A NCAC 04B .0124) supercede all other sediment and erosion control requirements.

3. No Sediment and Erosion Control Measures in Wetlands or Waters

   Sediment and erosion control measures should not be placed in wetlands or waters outside of the permitted impact areas without prior approval from the Division. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, then the design and placement of temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or stream beds or banks, adjacent to or upstream and down stream of the above structures. All sediment and erosion control devices shall be removed and the natural grade restored within two (2) months of the date that the Division of Land Resources or locally delegated program has released the project.

4. Construction Stormwater Permit NCG010000

   Upon the approval of an Erosion and Sedimentation Control Plan issued by the Division of Land Resources (DLR) or a DLR delegated local erosion and sedimentation control program, an NPDES General stormwater permit (NCG010000) administered by the Division is automatically issued to the project. This General Permit allows stormwater to be discharged during land disturbing construction activities as stipulated by conditions in the permit. If the

activity is covered by this permit [applicable to construction projects that disturb one (1) or more acres], full compliance with permit conditions including the sedimentation control plan, self-monitoring, record keeping and reporting requirements are required. A copy of this permit and monitoring report forms may be found at http://h2o.enr.state.nc.us/su/Forms_Documents.htm.

NCDOT shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their individual NPDES (NCS000250) stormwater permit.

5. Work in the Dry

All work in or adjacent to stream waters shall be conducted in a dry work area. Approved best management practices from the most current version of the NC Sediment and Erosion Control Manual, or the NC DOT Construction and Maintenance Activities Manual, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water. Exceptions to this condition require submittal to, and approval by, the Division.

6. Construction Moratoriums and Coordination

If activities must occur during periods of high biological activity (i.e. sea turtle or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities. This condition can be waived through written concurrence on a case by case basis upon reasonable justification.

All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) to protect trout, anadromous fish, larval/post-larval fishes and crustaceans, or other aquatic species of concern shall be obeyed. This condition can be waived through written concurrence on a case by case basis upon reasonable justification.

Work within the twenty-five (25) designated trout counties or identified state or federal endangered or threatened species habitat shall be coordinated with the appropriate WRC, USFWS, NMFS personnel.

7. Riparian Area Protection Rules (Buffer Rules)

Activities located in the protected 50-foot wide riparian areas (whether jurisdictional wetlands or not) within the Neuse, Tar-Pamlico, Randleman, Catawba (or any other basin with buffer rules), shall be limited to "uses" identified within and constructed in accordance with 15A NCAC 2B .0233, .0259, .0250, and .0243, and shall be located, designed, constructed, and maintained to have minimal disturbance to protect water quality to the maximum extent practicable through the use of best management practices. All riparian area protection rule requirements, including diffuse flow requirements, must be met.

8. Water Supply Watershed Buffers

The 100-foot wide (high-density development) or the 30-foot wide vegetative buffer (all other development) must be maintained adjacent to all perennial waters except for allowances as provided in the Water Supply Watershed Protection Rules [15A NCAC 2B .0212 through .0215].

9. Placement of Culverts and Other Structures in Waters and Wetlands

The application must include construction plans with cross-sectional details in order to indicate that the current stability of the stream will be maintained or enhanced (i.e., not result in head cuts).

Culverts required for this project shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. Existing stream dimensions (including the cross section dimensions, pattern, and longitudinal profile) must be maintained above and below locations of each culvert. Placement of culverts and other structures in waters, streams, and wetlands must be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life, unless otherwise justified and approved by the Division.

Installation of culverts in wetlands must ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. Additionally, when roadways, causeways or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges must be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

Any rip rap required for normal pipe burial and stabilization shall be buried such that the original stream elevation is restored and maintained.

The establishment of native, woody vegetation and other soft stream bank stabilization techniques must be used where practicable instead of rip-rap or other bank hardening methods.

10. If concrete is used during the construction, then a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete should not be discharged to surface waters due to the potential for elevated pH and possible aquatic life/fish kills.

11. Applications for riprap groins proposed in accordance with 15A NCAC 07H .1401 (NC Division of Coastal Management General Permit for construction of Wooden and Riprap Groins in Estuarine and Public Trust Waters) must meet all the specific conditions for design and construction specified in 15A NCAC 07H .1405.

12. Temporary Fills and/or Access Roads

All temporary fill and culverts shall be removed and the impacted area returned to the original grade, including each stream's original cross sectional dimensions, plan form pattern, and longitudinal bed and bed profile after construction is complete or within two (2) months of the establishment of the crossing, which ever is sooner, and the various sites shall be stabilized with natural woody vegetation (except for the maintenance areas of permanent utility crossings) and restored to prevent erosion. If the crossings are not completely removed and restored as described above within the specified time above, then written approval from the Division must be obtained to modify this condition.

13. For activities requiring written approval, additional site-specific conditions may be added to the approval letter in order to ensure compliance with all applicable water quality and effluent standards.

14. Certificate of Completion

When written authorization is required for use of this certification, upon completion of all permitted impacts included within the approval and any subsequent modifications, the applicant shall be required to return the certificate of completion attached to the approval. One copy of the certificate shall be sent to the DWQ Central Office in Raleigh at 1650 Mail Service Center, Raleigh, NC, 27699-1650.

15. If an environmental document is required under NEPA or SEPA, then this General Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse.

16. This General Certification shall expire three (3) years from the date of issuance of the written approval or on the same day as the expiration date of these corresponding Nationwide and Regional General Permits. In accordance with General Statute 136-44.7B, certifications issued to the NCDOT shall expire only upon expiration of the federal 404 Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this Certification. If the construction process for approved activities will overlap the expiration and renewal date of the corresponding 404 Permit and the Corps allows for continued use of the 404 Permit, then the General Certification shall also remain in effect without requiring re-application and re-approval to use this Certification for the specific impacts already approved.

17. The applicant/permittee and their authorized agents shall conduct all activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act), and any other appropriate requirements of State and Federal Law. If the Division determines that such standards or laws are not being met, including failure to sustain a designated or achieved use, or that State or Federal law is being violated, or that further conditions are necessary to assure compliance, then the Division may reevaluate and modify this General Water Quality Certification.

Non-compliance with or violation of the conditions herein set forth by a specific fill project shall result in revocation of this General Certification for the project and may result in criminal and/or civil penalties.

The Director of the North Carolina Division of Water Quality may require submission of a formal application for Individual Certification for any project in this category of activity if it is determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or degrade the waters so that existing uses of the wetland or downstream waters are precluded.

Public hearings may be held for specific applications or group of applications prior to a Certification decision if deemed in the public's best interest by the Director of the North Carolina Division of Water Quality.

Water Quality Certification N°. 3687

Effective date: November 1, 2007

DIVISION OF WATER QUALITY

By

Coleen H. Sullins

Director

History Note: Water Quality Certification Number 3687 replaces Water Quality Certification Number 3376 issued on March 18, 2002, Water Quality Certification Number 3494 issued December 31, 2004, and Water Quality Certification Number 3624 issued March 2007. This General Certification is rescinded when the Corps of Engineers re-authorizes any of these Nationwide or Regional Permits or when deemed appropriate by the Director of the Division of Water Quality.

ATTACHMENT 'D'

"Utility: Water Main Relocation"

Project: B-3898
County: Robeson

PROJECT SPECIAL PROVISIONS
Water Main Relocation Construction
March 22, 2010

NORTH CAROLINA PROFESSIONAL SEAL 25031 ENGINEER HOWARD T. WOODALL, III

3/22/10

Howard T. Woodall III

GENERAL CONSTRUCTION REQUIREMENTS:

Specifications:

The proposed utility construction shall meet the applicable requirements of the NC Department of Transportation "Standard Specifications for Roads and Structures" dated January 2006 and the provisions outlined below.

Meet the installation standards of the AWWA or ASTM for water line construction.

Owner and Owner's Requirements:

The existing water main belongs to the Robeson County. The contact person for the County is the Director of Public Works, Mr. B. H. Harris and can be reached by telephone at (910) 671-3485. The contractor shall provide access for the owner's representatives to all phases of construction. The owner shall also be notified 48 hours prior to commencement of any work and 48 hours prior to service interruption. Interruption of water service on main lines shall be limited to a maximum of 4 hours unless approved by the Director of Public Works.

Any cracked, damaged, or defective pipe, fittings, or other attachments discovered as a result of the pressure test, shall be removed and replaced with sound material. The tests shall be repeated until test results are satisfactory.

Utility Locations Shown on the Plans:

The locations, sizes, and type material of the existing utilities shown on the plans are from the best available information. The contractor will be responsible for determining the exact location, size, and type of material of the existing facilities necessary for the construction of the proposed utilities and to avoid damage to existing facilities.

Dewatering will not be measured and paid for as a separate cost item. All costs involved in dewatering shall be included in the applicable bid item for the various forms of work, i.e. pipe, structures, etc.

Sterilization will not be measured and paid for as a separate cost item. All costs including chlorinating equipment, materials, excavation, barricades, backfilling, and any taps and corporations and re-sterilization shall be included in the applicable cost item for piping and other forms of work.

RK K

Water Line:

Installation and testing of all water lines shown on the utility construction plans shall be accomplished in accordance with Section 1510 of the Standard Specifications (July 2006).

Horizontal directional drilling installation shall be in accordance with Section 1550 of the Standard Specifications (July 2006). Drilling fluids shall be contained and properly disposed.

The installed location of the new line shall be provided to the designer in sufficient detail for the designer to prepare as-built plans.

Contractor shall perform all surface work outside of jurisdictional wetlands so as not to create environmental impacts.

Water line installation will be contained within the existing roadway right-of-way.

Compensation:

No direct payment will be made for utility construction work required by the proceeding provisions, which are general requirements applying to utility construction. All of the requirements stated will be considered incidental work and paid for at the contract unit prices of the various items included in the contract.

B-3898
Robeson County
Bridge #41 on SR 2115 (Old Whiteville Road)

Prepared By: RK&K (H.Woodall)
Date: Oct. 14, 2010

Waterline Relocation Quantities:

Type	ItemNumber	Section	Description	Quantity	Units
U	5325800000-E	1510	8" WATER LINE (RJ DIP PC350)	35	LF
U	5326000000-E	1510	10" WATER LINE (HDPE DR-9)	293	LF
U	5802000000-E	1530	ABANDON 10" UTILITY PIPE	320	LF
U	5871600000-E	1550	TRENCHLESS INSTALLATION OF 10" IN SOIL	293	LF

ENGINEER'S REPORT FOR WATER MAIN RELOCATION
FOR
ROBESON COUNTY WATER SYSTEM
Robeson County

March 22, 2010

This report covers the relocation of approximately 318 feet of existing 8" ductile iron pipe water main located within the SR 2115 (Old Whiteville Road) right-of-way and in conflict with the NCDOT B-3898 bridge replacement project over Jacobs Swamp in Robeson County. These facilities are a part of the distribution system which serves Robeson County. These facilities are owned by:

Robeson, County of Public Works
176 Legend Road
Lumberton, NC 28358

PWS I.D. # **NC0378055**
WSMP # **00-00083**

The water main identified is being relocated to facilitate the replacement of NCDOT Bridge No. 41 over Jacobs Swamp. There will be no increase in service area or new demands on the capacity of the water service. This relocation has been reviewed and approved by the Owner.

The following is a summary of the materials being replaced along the project:

318 LF	8" DIP Water main

The following is a summary of the materials to be used on the project:

35 LF	8" DIP Water Main and Fittings
293 LF	10" HDPE Pipe and Fittings

Howard T. Woodall III, P.E.
Rummel, Klepper & Kahl, LLP
900 Ridgefield Drive, Suite 350
Raleigh, NC 27609

NORTH CAROLINA PROFESSIONAL SEAL 25381 ENGINEER HOWARD T. WOODALL, III

3/22/10
Howard T. Woodall III

NCDENR

North Carolina Department of Environment and Natural Resources
Division of Environmental Health

Beverly Eaves Perdue
Governor

Terry L. Pierce
Director

Dee Freeman
Secretary

RECEIVED
APR 21 2010
RK&K
RALEIGH, NC

April 15, 2010

Mr. B. H. Harris
Director of Public Works
Robeson County Water System
176 Legend Road
Lumberton, North Carolina 28358

Re: Water Main Relocation
SR 2115 (Old Whiteville Road) NCDOT Project B-3898
Robeson County Water System
Water System No.: NC0378055, Robeson County
Serial No.: 10-00268

Dear Mr. Harris:

Enclosed please find one copy of the "Application for Approval..." together with one copy of the referenced plans and specifications bearing the Division of Environmental Health stamp of approval for the referenced project. These plans and specifications are approved under Serial Number 10-00268, dated April 13, 2010.

Plans and specifications prepared by Howard T. Woodall, III, P.E., call for the installation of approximately 35 feet of 8-inch ductile iron water main and 293 feet of high density polyethylene pipe with valves and other appurtenances to relocate and replace the existing waterline located within the SR 2115 (Old Whiteville Road) right-of-way and in conflict with the NCDOT B-3898 bridge replacement project over Jacobs Swamp in Robeson County.

Please note that an "Authorization to Construct" requires both this approval of Engineering Plans and Specifications and submittal of a complete Water System Management Plan. No construction shall be undertaken, and no contract for construction, alteration, or installations shall be entered into until the Department issues an Authorization to Construct letter in accordance with 15A NCAC 18C .0305(a).

These plans and specifications in the foregoing application are approved insofar as the protection of public health is concerned as provided in the rules, standards and criteria adopted under the authority of Chapter 130A-317 of the General Statutes. This approval does not constitute a warranty of the design, construction or future operation of the water system.

One copy of each enclosed document is being forwarded to our Fayetteville Regional Office. The third copy is being retained in our permanent files.

If Technical Services Branch of this Section can be of further service, please call (919) 733-2460.

Sincerely,

Tony C. Chen, P.E.
Lead Engineer, Plan Review
Technical Services Branch

TCC/SMC/ch

Enclosures: Approval Documents

cc: Debra B. Benoy, P.E., Fayetteville Regional Engineer
Robeson County Health Department
Howard T. Woodall, III, P.E.

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Environmental Health

Beverly Eaves Perdue
Governor

Terry L. Pierce
Director

Dee Freeman
Secretary

April 14, 2010

B H HARRIS
176 LEGEND ROAD,
LUMBERTON, NC 28358

Re: **Authorization to Construct**
SR 2115 (OLD WHITEVILLE ROAD) NCDOT PROJECT B-3898
ROBESON COUNTY WATER SYSTEM
ROBESON County, NC0378055

Authorization to Construct (This is not a Final Approval)

Dear Applicant:

This letter is to confirm that a complete Engineer's Report and a Water System Management Plan have been received, and that engineering plans and specifications have been approved by the Department for **SR 2115 (OLD WHITEVILLE ROAD) NCDOT PROJECT B-3898, Serial No. 10-00268.**

The Authorization to Construct is valid for 24 months from the **Issue Date** (refer to next page). Authorization to Construct may be extended if the Rules Governing Public Water Supplies and site conditions have not changed (see Rule .0305). The Authorization to Construct and the engineering plans and specifications approval letter shall be posted at the primary entrance of the job site before and during construction.

Upon completion of the construction or modification, and prior **to placing the new construction or modification into service**, the applicant must submit an Engineer's Certification and Applicant Certification directly to **SIRAJ CHOHAN, P.E.** of this office.

- **Engineer Certification:** in accordance with Rule .0303 (a), the applicant shall submit a certification statement signed and sealed by a registered professional engineer stating that construction was completed in accordance with approved engineering plans and specifications, including any provisions stipulated in the Department's engineering plan and specification approval letter.
- **Applicant Certification:** in accordance with Rule .0303 (c), the applicant shall submit a signed certification statement indicating that the requirements for an Operation and Maintenance Plan and Emergency Management Plan have been satisfied in accordance with Rule .0307 (d) and (e) and that the system has a certified operator in accordance with Rule .1300. The "Applicant Certification" form is available at http://www.deh.enr.state.nc.us/pws/ (click on Plan Review Forms, under Plan Review heading).

If this Authorization to Construct is for a new public water system, the owner must submit a completed **application for an Operating Permit** and the appropriate fee. For a copy of the application for an Operating Permit please call (919) 715-3214.

Once the certifications and permit application and fee, (if applicable), are received and determined adequate, the Department will issue a Final Approval letter to the applicant. In accordance with Rule .0309 (a), **no portion of this project shall be placed into service until the Department has issued Final Approval.**

If the Public Water Supply Section can be of further assistance, please call (919) 733-2321.

Sincerely,

Tony C. Chen, P.E.
Technical Services Branch

TCC:SMC
cc: DEBRA B. BENOY, P.E., Regional Engineer
R K & K

State of North Carolina
Department of Environment and Natural Resources
Division of Environmental Health

NCDENR

Division of Environmental Health

Public Water System Authorization to Construct

Public Water System Name and Water System No. (*if available*):	ROBESON COUNTY WATER SYSTEM NC0378055
Project Name:	SR 2115 (OLD WHITEVILLE ROAD) NCDOT PROJECT B-3898
Serial No.:	10-00268
Issue Date:	4/13/2010
Expiration Date:	24 Months after Issue Date

In accordance with NCAC 18C .0305, this Authorization to Construct must be posted for
At the primary entrance to the job site during construction.

Wafa, Zaki H

From: Wafa, Zaki H
Sent: Wednesday, December 08, 2010 4:57 PM
To: Wafa, Zaki H
Subject: FW: John stewart

-----Original Message-----
From: Garrell, Nicky L
Sent: Wednesday, December 08, 2010 7:39 AM
To: Wafa, Zaki H
Subject: John stewart

Contact person with RK&K, LLP is Mr. John Stewart [jstewart@rkk.com] at 919.878.9560

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

BID FORM

CONTRACT COST PROPOSAL

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

BRIDGE REPLACEMENT WITH PRECAST PRESTRESSED CONCRETE CORED SLABS

LINE #	ITEM NUMBER	SEC #	DESCRIPTION	QUANTITY	UNIT COST	AMOUNT
1.	0000100000-N	800	MOBILIZATION	L.S.	_____	_____
2.	0029000000-N	SP	REINFORCED BRIDGE APPROACH FILL, STA. 10+17.50	L.S.	_____	_____
3.	0063000000-N	SP	GRADING	L.S.	_____	_____
4.	1489000000-E	610	ASPHALT CONCRETE BASE COURSE, TYPE B25.0B	600 TONS	_____	_____
5.	1525000000-E	610	ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A	300 TONS	_____	_____
6.	1560000000-E	620	ASPHALT BINDER FOR PLANT MIX, TYPE PG64-22	50 TONS	_____	_____
7.	3030000000-E	862	STEEL BM GUARDRAIL	425 LIN. FT.	_____	_____
8.	3270000000-N	SP	GR ANCHOR UNITS, TYPE 350	4 EACH	_____	_____
9.	3317000000-N	862	GR ANCHOR UNITS, TYPE B-77	4 EACH	_____	_____
10.	3628000000-E	876	RIP RAP, CLASS I	650 TONS	_____	_____
11.	5912000000-N	SP	GENERIC UTILITY ITEM	L.S.	_____	_____
12.	6000000000-E	1605	TEMPORARY SILT FENCE	1,700 LIN. FT.	_____	_____
13.	6133000000-N	SP	GENERIC EROSION CONTROL	L.S.	_____	_____

LINE #	ITEM NUMBER	SEC #	DESCRIPTION	QUANTITY	UNIT COST	AMOUNT
14.	8035000000-N	402	REMOVAL EXISTING STRUCTURE AT STATION 10+17.50	L.S.	_____	_____
15.	8210000000-N	422	BRIDGE APPROACH SLABS, STATION 10+17.50	L.S.	_____	_____
16.	8329000000-E	SP	12" PRESTRESSED CONCRETE PILES	350 LIN. FT.	_____	_____
17.	8365000000-E	450	HP 12x53 GALVANIZED STEEL PILES	540 LIN. FT.	_____	_____
18.	8765000000-N	SP	CONST OF SUBSTRUCTURE	L.S.	_____	_____
19.	8766000000-N	SP	CONST OF SUPERSTRUCTURE	L.S.	_____	_____

TOTAL PROJECT BID _____

EXECUTION OF PROPOSAL

DATE:_____

In compliance with the foregoing request for proposals and subject to all terms and conditions thereof, the undersigned offers and agrees, if this proposal is accepted, to furnish the services for the prices quoted.

TOTAL PROJECT BID: $_____

CONTRACTOR:_____

ADDRESS:_____

CITY:_____ STATE:_____ ZIP CODE:_____ PHONE:_____

BY:_____ TITLE:_____
(SIGNATURE)

_____
(TYPED OR PRINTED NAME)

CONTRACTOR'S LICENSE NUMBER:_____

"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."

ACCEPTANCE OF PROPOSAL

AGENCY: N. C. DEPARTMENT OF TRANSPORTATION CITY AND STATE: RALEIGH, NORTH CAROLINA

BY:_____ , STATE BRIDGE MANAGEMENT ENGINEER
(SIGNATURE)

12/19/89

AWARD LIMITS ON MULTIPLE PROJECTS

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

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

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

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

_____
**Signature of Authorized Person

**Only those persons authorized to sign bids under the provisions of Article 102-8, Item 7, shall be authorized to sign this form.

Rev 7-20-08

EXECUTION OF CONTRACT
NON-COLLUSION AFFIDAVIT AND DEBARMENT CERTIFICATION

CORPORATION

The Contractor being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this Contract, and that the Contractor intends to do the work with his own bonafide employees or subcontractors and did not bid for the benefit of another contractor.

By submitting this Execution of Contract, Non-Collusion affidavit and Debarment Certification, the Contractor is certifying his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exception that are applicable.

SIGNATURE OF CONTRACTOR

_____
Full name of Corporation

_____
Address as Prequalified

Attest_____ By _____
Secretary/ Assistant Secretary — President/ Vice President/ Assistant Vice President
Select appropriate title — *Select appropriate title*

_____ _____
Print or type Signer's Name — Print or type Signer's Name

CORPORATE SEAL

AFFIDAVIT MUST BE NOTARIZED

NOTARY SEAL

Subscribed and sworn to before me this the

_____ day of _____, 20_____.

_____
Signature of Notary Public

of _____County.

State of _____.

My Commission Expires: _____

Rev 7-20-08

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

LIMITED LIABILITY COMPANY

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

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

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

SIGNATURE OF CONTRACTOR

_____
Full name of Firm

_____
Address as Prequalified

_____ Signature of Manager _____
Signature of Witness Individually

_____ _____
Print or type Signer's Name Print or type Signer's Name

AFFIDAVIT MUST BE NOTARIZED

NOTARY SEAL

Subscribed and sworn to before me this the

_____ day of _____, 20_____.

_____
Signature of Notary Public
of _____County.

State of _____.

My Commission Expires: _____

DEBARMENT CERTIFICATION OF CONTRACTOR

Conditions for certification:

1. The Contractor shall provide immediate written notice to the Department if at any time the Contractor learns that his certification was erroneous when he submitted his debarment certification or explanation that is on file with the Department, or has become erroneous because of changed circumstances.

2. The terms *covered transaction*, *debarred*, *suspended*, *ineligible*, *lower tier covered transaction*, *participant*, *person*, *primary covered transaction*, *principal*, *proposal*, and *voluntarily excluded*, as used in this provision, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. A copy of the Federal Rules requiring this certification and detailing the definitions and coverages may be obtained from the Contract Officer of the Department.

3. The Contractor 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 Contractor 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 Contractor 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 Contractor 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 3 herein, the Department may terminate any contract if the Contractor 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.

Rev 7-20-08

DEBARMENT CERTIFICATION

The Contractor certifies to the best of its knowledge and belief, that it and its 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

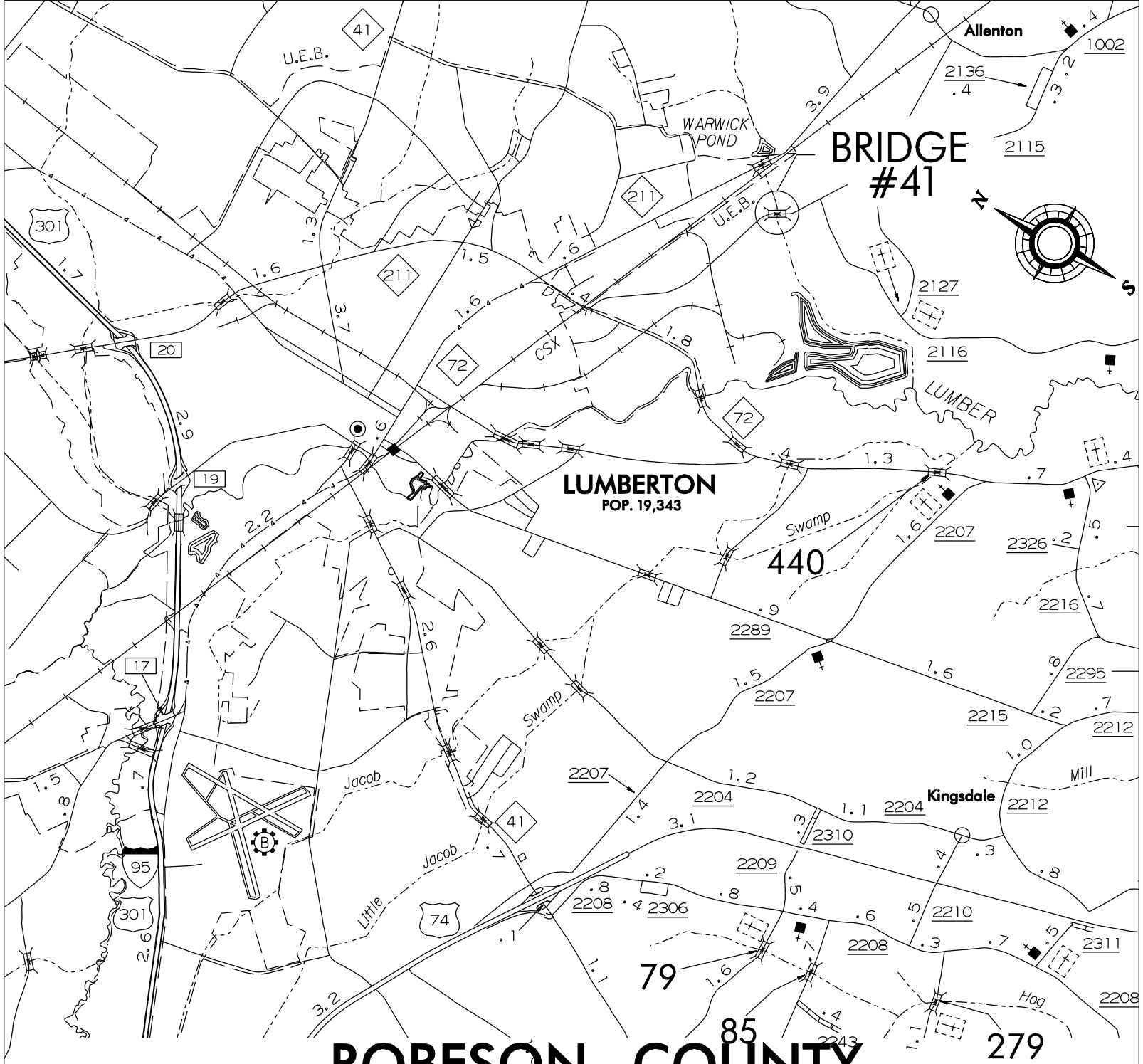
d. Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

e. If status changes, will submit a revised Debarment Certification immediately.

If the Contractor 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 Contractor's bid being considered non-responsive

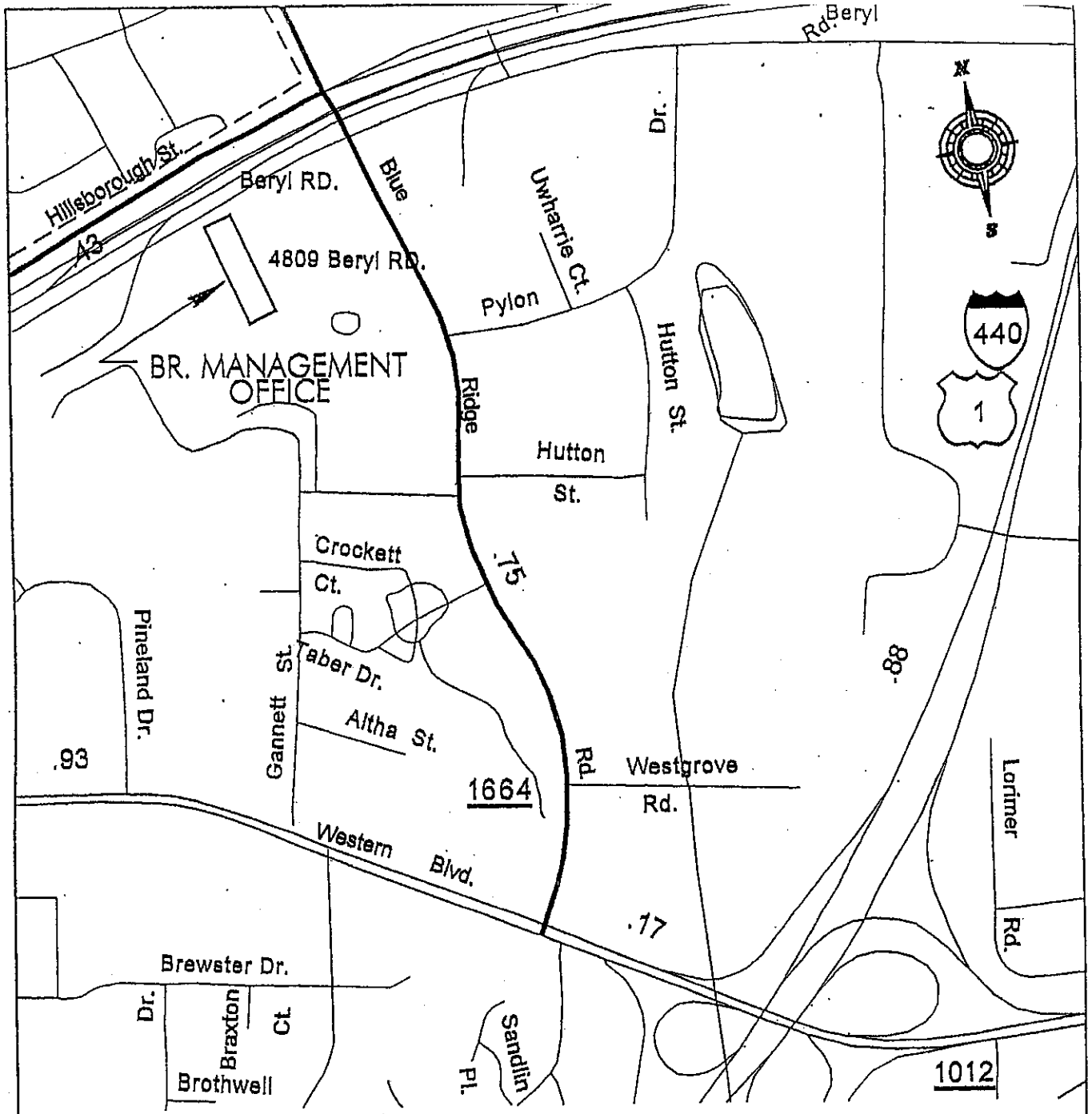
☐ Check here if an explanation is attached to this Certification.



ROBESON COUNTY

BRIDGE LOCATION MAP
NORTH CAROLINA

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION



RALEIGH–WAKE COUNTY

PRE BID LOCATION MAP
NORTH CAROLINA
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION