

DATE: April 28, 2011

CONTRACT ID.: DO00121
WBS ELEMENT: 33575.3.1
TIP No. : B-4232

CONTRACTING AGENCY
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, NORTH CAROLINA

Request For Proposals For:

Bridge Replacement With
Prestressed Cored Slabs
Pitt County
Bridge Number 9

Proposals subject to the conditions made a part hereof will be received until 2:00 P.M., Tuesday, May 31, 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: Mr. Dan Holderman, P.E.

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

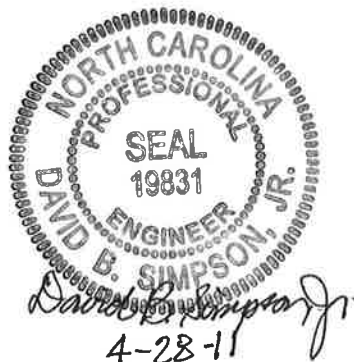


TABLE OF CONTENTS

| <u>COVER SHEET</u> | <u>PAGE NO.</u> |
|--|-----------------|
| PREQUALIFYING TO BID_____ | 1 |
| AVAILABILITY OF FUNDS_____ | 2 |
| PREPARATION AND SUBMISSION OF BIDS_____ | 2 |
| PROJECT SPECIAL PROVISIONS_____ | 6 |
| GENERAL PROVISIONS / DISADVANTAGE BUSINESS ENTERPRISE_____ | 11 |
| ROADWAY PROVISIONS_____ | 34 |
| EROSION CONTROL PROVISIONS_____ | 69 |
| STRUCTURE PROVISIONS_____ | 85 |
| STANDARD SPECIAL PROVISIONS –ERRATA-_____ | 115 |
| PLANT AND PEST QUARANTINES_____ | 119 |
| MINIMUM WAGES AND AWARD OF CONTRACT _____ | 120 |
| ATTACHMENT ‘A’_____ | 121 |
| GEOTECHNICAL ATTACHMENT ‘B’ (8) _____ | 122 |
| ENVIRONMENTAL PERMIT ATTACHMENT ‘C’ _____ | 123 |
| SPECIAL PROVISIONS – UTILITY CONSTRUCTION ATTACHMENT ‘D’ _____ | 124 |
| FHWA SPECIAL PROVISIONS ATTACHMENT ‘E’_____ | 125 |
| BID FORM _____ | 150 |
| EXECUTION OF PROPOSAL _____ | 153 |
| AWARD LIMITS ON MULTIPLE PROJECTS_____ | 154 |
| EXECUTION OF CONTRACT_____ | 155-162 |
| 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 Bidders shall be pre-qualified with the Department of Transportation prior to submitting a bid. Contractors who are not pre-qualified may obtain information and forms for pre-qualifying from:

Contractual Services Unit
State Contractual Services Engineer:

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.

Attendance at the 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 Pre-Bid Conference, at 1:00 p.m., Monday, May 16, 2011 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, NC, Wake County. (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 B-4232 for Bridge No. 9 in Pitt 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 B-4232 for Bridge No. 9 in Pitt 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., Tuesday, May 31, 2011 will not be accepted.

PROJECT SPECIAL PROVISIONS

GENERAL REQUIREMENTS

A. SCOPE OF WORK

This work shall consist of furnishing and installing a prestressed cored slab bridge; removal of the existing structure; clearing and grubbing; grubbing; excavation and embankment; installation of guardrail; roadway base course and pavement; construction of substructure and superstructure; grading within limits of the project; placement of rip rap; temporary erosion control; seeding and mulching; drainage; 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 Department 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 bridge consists of three spans for a total length = 52' - 1"; 3" asphalt wearing surface; on reinforced concrete deck on timber joists; end bents and interior bents on timber cap and timber piles with a clear roadway width of 24' - 0"; is located on NC 903 across Swift Creek, 0.2 miles northeast of junction SR 2106. This bridge shall be replaced by a cored slab bridge with two spans (one @ 25' and one @ 55') on a 105 degree skew angle and 42' clear roadway width. (SEE BRIDGE LOCATION MAP)

C. CONTRACT TIME AND LIQUIDATED DAMAGES

The date of availability for this contract is **September 1, 2011** or no later than **March 1, 2012**, except that work in jurisdictional waters and wetlands shall not begin until a meeting between NCDOT, Regulatory Agencies, and the Contractor is held as stipulated in the permits contained elsewhere in this proposal. This delay in availability has been considered in determining the contract time for this project.

The completion date for this contract is the date that is **Ninety (90) consecutive calendar days after the Contractor closes the road and detours traffic or June 29, 2012, whichever is earlier.**

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

The liquidated damages for this contract are **Two Thousand Dollars (\$2,000.00)** per calendar day. At the preconstruction conference the Contractor shall declare his expected date for beginning work. Should the Contractor desire to revise this date

after the preconstruction conference, he shall notify the Engineer in writing at least thirty (30) days prior to the revised date.

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. WETLAND BUFFER FENCING

The outside buffer, wetland or water boundary located within the construction corridor shall be clearly marked by highly visible fencing prior to any land activities. Construction shall not exceed these areas.

H. 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.

I. 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.

J. 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.

K. 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.

L. 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.

M. 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.

N. BASIS OF PAYMENT

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

O. 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 Resident 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.

P. 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.

Q. 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.

R. REMOVAL OF EXISTING STRUCTURE

The Contractor shall be responsible for complete removal of any remaining portion of the existing structures. The Contractor's attention is directed to Article 402-2 of the Standard Specifications.

S. UTILITY CONFLICTS

The Department will be responsible for the adjustment of any utility at the bridge site prior to the date of availability.

T. ASPHALT CONCRETE, TYPE B 25.0B & TYPE S 9.5B

The quantity of Asphalt Concrete, Type B 25.0B and Type S 9.5B, measured as provided in Sections 610, including furnishing all materials placement, shall be paid for at the contract unit price per ton for "Asphalt Concrete Base Course and Surface Course; Types B 25.0B and S 9.5B".

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.

U. CLASS II RIP RAP & CLASS B RIP RAP

Placement of all rip rap shall be in accordance with the Specifications. Compensation for filter fabric used in conjunction with rip rap will be included in the Contract unit price for Class II Rip Rap and Class B Rip Rap.

V. 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

DISADVANTAGED BUSINESS ENTERPRISE (POC AND MUNICIPALITIES):

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

SP1G62

Policy

It is the policy of the North Carolina Department of Transportation that Disadvantaged Business Enterprises (DBEs) as defined in *49 CFR Part 26* shall have the equal opportunity to compete fairly for and to participate in the performance of contracts financed in whole or in part by Federal Funds.

Obligation

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

Definitions

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

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

Department - North Carolina Department of Transportation

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

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

Goal - The DBE participation specified herein

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

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

Regular Dealer - A firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold to the public in the usual course of business. A regular dealer engages in, as its principal business and in its own name, the purchase and sale or lease of the products in question. A regular dealer in such bulk items as steel, cement,

gravel, stone, and petroleum products need not keep such products in stock, if it owns or operates distribution equipment. Brokers and packagers are not regarded as manufacturers or regular dealers within the meaning of this section.

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

North Carolina Unified Certification Program - A program that provides comprehensive information to applicants for certification, such that an applicant is required to apply only once for a DBE certification that will be honored by all recipients of USDOT funds in the state and not limited to the Department of Transportation only. The Certification Program is in accordance with *49 CFR Part 26*.

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

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

Contract Goal

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

Disadvantaged Business Enterprises **(5) %**

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

Contract Requirement

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

Certified Transportation Firms Directory

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

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

Listing of DBE Subcontractors in Contract

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

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

Written Documentation – Letter of Intent

The bidder shall submit written documentation of the bidder/offeror's commitment to use a DBE subcontractor whose participation it submits to meet a contract goal and written confirmation from each DBE, listed in the proposal, indicating their participation in the contract. This documentation shall be submitted on the Department's form titled "Letter of Intent to Perform as a Subcontractor". This letter of intent form is available at: <http://www.ncdot.org/doh/preconstruct/ps/contracts/letterofintent.pdf>. It shall be received in the office of the (Officer/Engineer) no later than (Time of Day) of the (No. of Days) calendar day following opening of bids.

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

Counting DBE Participation Toward Meeting DBE Goal of Zero or More

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

- (B) When a DBE performs as a participant in a joint venture, the Contractor may count toward its DBE goal a portion of the total value of participation with the DBE in the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the DBE performs with its forces.
- (C) (1) The Contractor may count toward its DBE requirement only expenditures to DBEs that perform a commercially useful function in the work of a contract. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE shall also be responsible with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, the Department (Insert Municipality Name and delete Department, if applicable) will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors.
- (2) A DBE may enter into subcontracts. Work that a DBE subcontracts to another DBE firm may be counted toward the contract requirement. Work that a DBE subcontracts to a non-DBE firm does not count toward the contract requirement. If a DBE contractor or subcontractor subcontracts a significantly greater portion of the work of the contract than would be expected on the basis of standard industry practices, the DBE shall be presumed not to be performing a commercially useful function. The DBE may present evidence to rebut this presumption to the Department (Insert Municipality Name and delete Department, if applicable) for commercially useful functions. The Department's (Insert Municipality Name and delete Department, if applicable) decision on the rebuttal of this presumption is subject to review by the Federal Highway Administration but is not administratively appealable to USDOT.
- (3) The following factors will be used to determine if a DBE trucking firm is performing a commercially useful function.
- (a) The DBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there shall not be a contrived arrangement for the purpose of meeting DBE goals.
 - (b) The DBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
 - (c) The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
 - (d) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks

from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.

- (e) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE lessees not to exceed the value of transportation services provided by DBE-owned trucks on the contract. Additional participation by non-DBE lessees receives credit only for the fee or commission it receives as a result of the lease arrangement. The value of services performed under lease agreements between the DBE and Contractor will not count towards the contract requirement.
 - (f) For purposes of this paragraph, a lease shall indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks shall display the name and identification number of the DBE.
- (D) A contractor may count toward its DBE requirement 60 percent of its expenditures for materials and supplies required to complete the contract and obtained from DBE regular dealer and 100 percent of such expenditures to a DBE manufacturer.
- (E) A contractor may count toward its DBE requirement the following expenditures to DBE firms that are not manufacturers or regular dealers:
 - (1) The fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, provided the fees or commissions are determined to be reasonable and not excessive as compared with fees and commissions customarily allowed for similar services.
 - (2) The fees or commissions charged for assistance in the procurement of the materials and supplies, or for transportation charges for the delivery of materials or supplies required on a job site (but not the cost of the materials and supplies themselves), provided the fees are not from a manufacturer or regular dealer and provided the fees are determined to be reasonable and not excessive as compared with fees customarily allowed for similar services.

Good Faith Effort for Projects with Goals More Than Zero

If the DBE participation submitted in the bid by the apparent lowest responsive bidder does not meet or exceed the DBE contract goal, the apparent lowest responsive bidder shall submit to the Department (Officer/Engineer) documentation of its good faith efforts made to reach the contract goal. One complete set and 9 copies of this information shall be received in the office of the (Officer/Engineer) no later than (Time of Day) of the (No. of Days) calendar day following opening of bids. Where the information submitted includes repetitious solicitation letters it will be acceptable to submit a representative letter along with a distribution list of the firms that were solicited. Documentation of DBE quotations shall be a part of the good faith effort submittal as necessary to demonstrate compliance with the factors listed below which the Department (Insert Municipality Name and delete Department, if applicable) 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 (Insert Municipality Name and delete Department, if applicable) to inform DBEs of subcontracting opportunities.
- (B) Whether the bidder provided solicitations through all reasonable and available means (e.g. advertising in newspapers owned and targeted to the Disadvantaged) at least 10 calendar days prior to bid opening. Whether the bidder provided written notice to all DBEs listed in the NCDOT Directory of Transportation Firms, within the Divisions and surrounding Divisions where the project is located, that specialize in the areas of work (as noted in the DBE Directory) that the bidder will be subletting.
- (C) Whether the bidder followed up initial solicitations of interests by contacting DBEs to determine with certainty whether they were interested. If a reasonable amount of DBEs within the targeted Divisions do not provide an intent to quote or no DBEs specialize in the subcontracted areas, the bidder shall notify DBEs outside of the targeted Divisions that specialize in the subcontracted areas, and contact the Director of Business and Opportunity Workforce Development (Insert Municipality Name and delete Department title, if applicable) to give notification of the bidder's inability to get DBE quotes.
- (D) Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the bidder might otherwise perform these work items with its own forces.
- (E) Whether the bidder provided interested DBEs with adequate and timely information about the plans, specifications and requirements of the contract.
- (F) Whether the bidder negotiated in good faith with interested DBEs without rejecting them as unqualified without sound reasons based on a thorough investigation of their

capabilities. Any rejection should be noted in writing with a description as to why an agreement could not be reached.

- (G) Whether quotations were received from interested DBE firms but rejected as unacceptable without sound reasons why the quotations were considered unacceptable. The fact that the DBE firms quotation for the work is not the lowest quotation received will not in itself be considered as a sound reason for rejecting the quotation as unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered as sound reason for rejecting a DBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy contract goals.
- (H) Whether the bidder specifically negotiated with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be sublet includes potential for DBE participation.
- (I) Whether the bidder made any efforts and/or offered assistance to interested DBEs in obtaining the necessary equipment, supplies, materials, insurance, and/or bonding to satisfy the work requirements in the bid proposal.
- (J) Any other evidence that the bidder submits which show that the bidder has made reasonable good faith efforts to meet the contract goal.

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

If the Department (Insert Municipality Name and delete Department, if applicable) does not award the contract to the apparent lowest responsive bidder, the Department (Insert Municipality Name and delete Department, if applicable) reserves the right to award the contract to the next lowest responsive bidder that can satisfy the Department (Insert Municipality Name and delete Department, if applicable) that the contract goal can be met or that adequate good faith efforts have been made to meet the goal.

DBE Replacement

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

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

(A) Performance Related Replacement

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

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

- (1) Copies of written notification to DBEs that their interest is solicited in subcontracting the work defaulted by the previous DBE subcontractor or in subcontracting other items of work in the contract.
- (2) Efforts to negotiate with DBEs for specific subbids including, at a minimum:
 - (a) The names, addresses, and telephone numbers of DBEs who were contacted.
 - (b) A description of the information provided to DBEs regarding the plans and specifications for portions of the work to be performed.
- (3) For each DBE contacted but rejected as unqualified, the reasons for the Contractor's conclusion.
- (4) Efforts made to assist the DBEs contacted, if needed, in obtaining bonding or insurance required by the Contractor.

(B) Decertification Replacement

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

Changes in the Work

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

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

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

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

Reports

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

Within 30 (Enter No. of Days) calendar days of entering into an agreement with a DBE for materials, supplies or services, not otherwise documented by a Request for Subcontract as specified above, the Contractor shall furnish the Engineer a copy of the agreement. The documentation should also indicate the percentage (60% or 100%) of expenditures claimed for DBE credit.

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

Reporting Disadvantaged Business Enterprise Participation

(A) The Contractor shall provide the Engineer with an accounting of payments made to Disadvantaged Business Enterprise firms, including material suppliers, contractors at all levels (prime, subcontractor, or second tier subcontractor). This accounting shall be furnished to the Engineer for any given month by the end of the following month. Failure to submit this information accordingly may result in the following action:

- (1) Withholding of money due in the next partial pay estimate; or

- (2) Removal of an approved contractor from the prequalified bidders' list or the removal of other entities from the approved subcontractors list. (Municipality may add to, change or delete this section.)
- (B) The Contractor shall report the accounting of payments on the Department's DBE Subcontractor Payment Information Form DBE-IS, which is available at: <http://www.ncdot.org/doh/forms/files/DBE-IS.xls>. This shall be reported to the (Officer/Engineer).
- (C) Contractors reporting transportation services provided by non-DBE lessees shall evaluate the value of services provided during the month of the reporting period only.

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

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

Because Federal Funding is being used to fund this project, failure on the part of the Contractor to submit the required information in the time frame specified may result in the disqualification of that contractor and any affiliate companies from further bidding until the required information is submitted.

Because Federal Funding is being used to fund this project, failure on the part of any subcontractor to submit the required information in the time frame specified may result in the disqualification of that contractor and any affiliate companies from working on any Federal or State project until the required information is submitted.

Failure to Meet Contract Requirements

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

REVISION TO FHWA-1273 CONCERNING PERSONAL INFORMATION ON PAYROLL SUBMISSIONS:

(1-20-09)

SP1G59

Revise the *Standard Special Provision FHWA-1273 Required Contract Provisions Federal-Aid Construction Contracts* as follows:

Section V, Paragraph 2b is replaced with the following:

The payroll records shall contain the name, and the last four digits of the social security number of each such employee, his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid.

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.

MAINTENANCE OF THE PROJECT:

(11-20-07)

SP1G125

Revise the *2006 Standard Specifications* as follows:

Page 1-40, Article 104-10 Maintenance of the Project is amended as follows:

Add the following after the first sentence of the first paragraph.

All guardrail/guiderail within the project limits shall be included in this maintenance.

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

The Contractor shall perform weekly inspections of guardrail and guiderail and shall report damages to the Engineer on the same day of the weekly inspection. Where damaged guardrail or guiderail is repaired or replaced as a result of maintaining the project in accordance with this Article, such repair or replacement shall be performed within 7 consecutive calendar days of such inspection report.

Page 1-41, Article 104-10 Maintenance of the Project is amended to replace the last sentence of the second paragraph with the following:

The Contractor will not be directly compensated for any maintenance operations necessary, except for maintenance of guardrail/guiderail, as this work will be considered incidental to the work covered by the various contract items. The provisions of Article 104-7, Extra Work, and Article 104-8, Compensation and Record Keeping will apply to authorized maintenance of guardrail/guiderail. Performance of weekly inspections of guardrail/guiderail, and the damage reports required as described above, will be considered to be an incidental part of the work being paid for by the various contract items.

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 3-16-10)

SP1 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 AND 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.

PROCEDURE FOR MONITORING BORROW PIT DISCHARGE:

2-20-07

SP 1G 181

Water discharge from borrow pit sites shall not cause surface waters to exceed 50 NTUs (nephelometric turbidity unit) in streams not designated as trout waters and 10 NTUs in streams, lakes or reservoirs designated as trout waters. For lakes and reservoirs not designated as trout waters, the turbidity shall not exceed 25 NTUs. If the turbidity exceeds these levels due to natural background conditions, the existing turbidity level shall not be increased.

If during any operating day, the downstream water quality exceeds the standard, the Contractor shall do all of the following:

- (A) Either cease discharge or modify the discharge volume or turbidity levels to bring the downstream turbidity levels into compliance, or
- (B) Evaluate the upstream conditions to determine if the exceedance of the standard is due to natural background conditions. If the background turbidity measurements exceed the standard, operation of the pit and discharge can continue as long as the stream turbidity levels are not increased due to the discharge.

- (C) Measure and record the turbidity test results (time, date and sampler) at all defined sampling locations 30 minutes after startup and at a minimum, one additional sampling of all sampling locations during that 24-hour period in which the borrow pit is discharging.
- (D) Notify DWQ within 24 hours of any stream turbidity standard exceedances that are not brought into compliance.

During the Environmental Assessment required by Article 230-4 of the *Standard Specifications*, the Contractor shall define the point at which the discharge enters into the State's surface waters and the appropriate sampling locations. Sampling locations shall include points upstream and downstream from the point at which the discharge enters these waters. Upstream sampling location shall be located so that it is not influenced by backwater conditions and represents natural background conditions. Downstream sampling location shall be located at the point where complete mixing of the discharge and receiving water has occurred.

The discharge shall be closely monitored when water from the dewatering activities is introduced into jurisdictional wetlands. Any time visible sedimentation (deposition of sediment) on the wetland surface is observed, the dewatering activity will be suspended until turbidity levels in the stilling basin can be reduced to a level where sediment deposition does not occur. Staining of wetland surfaces from suspended clay particles, occurring after evaporation or infiltration, does not constitute sedimentation. No activities shall occur in wetlands that adversely affect the functioning of a wetland. Visible sedimentation will be considered an indication of possible adverse impacts on wetland use.

The Engineer will perform independent turbidity tests on a random basis. These results will be maintained in a log within the project records. Records will include, at a minimum, turbidity test results, time, date and name of sampler. Should the Department's test results exceed those of the Contractor's test results, an immediate test shall be performed jointly with the results superseding the previous test results of both the Department and the Contractor.

The Contractor shall use the *NCDOT Turbidity Reduction Options for Borrow Pits Matrix*, available at <http://www.ncdot.org/doh/preconstruct/ps/contracts/letting.html> to plan, design, construct, and maintain BMPs to address water quality standards. Tier I Methods include stilling basins which are standard compensatory BMPs. Other Tier I methods are noncompensatory and shall be used when needed to meet the stream turbidity standards. Tier II Methods are also noncompensatory and are options that may be needed for protection of rare or unique resources or where special environmental conditions exist at the site which have led to additional requirements being placed in the DWQ's 401 Certifications and approval letters, Isolated Wetland Permits, Riparian Buffer Authorization or a DOT Reclamation Plan's Environmental Assessment for the specific site. Should the Contractor exhaust all Tier I Methods on a site exclusive of rare or unique resources or special environmental conditions, Tier II Methods may be required by regulators on a case by case basis per supplemental agreement.

The Contractor may use cation exchange capacity (CEC) values from proposed site borings to plan and develop the bid for the project. CEC values exceeding 15 milliequivalents per 100 grams of soil may indicate a high potential for turbidity and should be avoided when dewatering into surface water is proposed.

No additional compensation for monitoring borrow pit discharge will be paid

CONTRACTOR CLAIM SUBMITTAL FORM:

(9-16-08)

SP1G140

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

ROADWAY PROVISIONS**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:

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*.

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

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)

SP2 R18

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*.

REINFORCED BRIDGE APPROACH FILL

(10-16-10)

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 16+14.55 – L- 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.

Payment will be made under:

Pay Item

Reinforced Bridge Approach Fill, Station 16+14.55 -L-

Pay Unit

Lump Sum

FINE GRADING SUBGRADE, SHOULDERS AND DITCHES:

07-21-09

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 3-15-11)

SP6 R01

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). Payment for Binder Grade for recycled mixes shall be based solely on the grade for the specified mix type as shown in the above table.
 - (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 $\leq 20\%$ | $20.1\% \leq \% \text{RAP} \leq 30.0\%$ | % 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

(4) Payment for binder grade shall be based solely on Table 610-2.

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 OGAFS, 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 6-51, Article 610-15 MEASUREMENT AND PAYMENT, fourth paragraph, delete and replace with the following:

Furnishing asphalt binder will be paid for as provided in Article 620-4.

Page 6-53, Article 620-4 MEASUREMENT AND PAYMENT, modify as follows:

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

Where recycled plant mix is being produced, the grade of asphalt binder shall be paid for based on the grade for the specified mix type as shown in Table 610-2.

Sixth paragraph, delete the last sentence.

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.

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 OGAF C, 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. | ¾ | 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 \$507.33 per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on March 1, 2011.

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 “Steel BM Guardrail.”

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.

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 | |
| <i>Pozzolan</i> | <i>Rate</i> |
| 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.

XXII. 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 |
| <i>Typical Application</i> | | <i>Shoulder Drains</i> | <i>Under Riprap</i> | <i>Temporary Silt Fence</i> | <i>Soil Stabilization</i> | <i>Temporary MSE Walls</i> |
| 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 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% |

¹MARV does not apply to elongation

²Minimum roll width of 36" required

³Minimum roll width of 13 ft required

⁴US Sieve No. per AASHTO M92

⁵After 500 hours of exposure

PIPE INSTALLATION AND PIPE CULVERTS:

(1-19-10)(Rev 1-18-11)

SP3 R40 B

Revise the *Standard Specifications* as follows:

Replace Section 300 and Section 310 with the following:

SECTION 300**PIPE INSTALLATION****300-1 DESCRIPTION**

Excavate, undercut, provide material, condition foundation, lay pipe, joint and couple pipe sections, and furnish and place all backfill material as necessary to install the various types of pipe culverts and fittings required to complete the project.

Install pipe in accordance with the detail in the plans.

Do not waste excavation unless permitted. Use suitable excavated material as backfill; or in the formation of embankments, subgrades, and shoulders; or as otherwise directed. Furnish disposal areas for the unsuitable material. The Engineer will identify excavated materials that are unsuitable.

Where traffic is to be maintained, install pipe in sections so that half the width of the roadway is available to traffic.

300-2 MATERIALS

Refer to Division 10:

| Item | Section |
|---------------------|----------------|
| Flowable Fill | 1000 |
| Select Materials | 1016 |
| Joint Materials | 1032-9(G) |
| Engineering Fabrics | 1056 |

Provide foundation conditioning material meeting the requirements of Article 1016-3 for Class V or VI Select Material as shown in the contract documents.

Provide bedding material meeting the requirements of Article 1016-3 for Class II (Type 1 only) or Class III Select Material as shown in contract documents.

Provide backfill material meeting the requirements of Article 1016-3 for Class II (Type 1 for Flexible Pipe) or Class III Select Material as shown in the contract documents.

Provide filter fabric meeting the requirements of Article 1056-2 for any type of engineering fabric.

Provide foundation conditioning fabric meeting the requirements of Article 1056-2 for Type 2 Engineering Fabric.

Do not use corrugated steel pipe in the following counties:

Beaufort, Bertie, Bladen, Brunswick, Camden, Carteret, Chowan, Columbus, Craven, Currituck, Dare, Gates, Hertford, Hyde, Jones, Martin, New Hanover, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrrell, and Washington.

300-3 UNLOADING AND HANDLING

Unload and handle pipe with reasonable care. Do not roll or drag metal pipe or plates over gravel or rock during handling. Take necessary precautions to ensure the method used in lifting or placing the pipe does not induce stress fatigue in the pipe. Use a lifting device that uniformly distributes the weight of the pipe along its axis or circumference. Repair minor damage to pipe when permitted. Remove pipe from the project that is severely damaged or is rejected as being unfit for use. Undamaged portions of a joint or section may be used where partial lengths are required.

300-4 PREPARATION OF PIPE FOUNDATION

Prepare the pipe foundation in accordance with the applicable method as shown in the contract documents, true to line and grade, and uniformly firm.

Camber invert grade an amount sufficient to prevent the development of sag or back slope in the flow line. The Contractor shall determine the amount of camber required and submit to the Engineer for approval.

Where material is found to be of poor supporting value or of rock and when the Engineer cannot make adjustment in the location of the pipe, undercut existing foundation material within the limits established on the plans. Backfill the undercut with foundation conditioning material. Encapsulate the foundation conditioning material with foundation conditioning fabric prior to placing bedding material. Overlap all transverse and longitudinal joints in the fabric at least 18 inches.

Maintain the pipe foundation in a dry condition.

300-5 INVERT ELEVATIONS

The proposed pipe culvert invert elevations shown on the Drainage Summary Sheets are based upon information available when the plans were prepared. If proposed invert elevations are adjusted during construction based upon actual conditions encountered, no claim for an extension of time for any reason resulting from this information will be allowed.

When a pipe culvert is to be installed in a trench and the average actual elevation of the pipe between drainage structures deviates from the average proposed elevation shown on the Drainage Summary Sheets by more than one foot a pay adjustment will be made as follows:

Pay Adjustment (per linear foot) = [(APE-AAE)± 1 foot] (0.15 X CUP)

Where: CUP = Contract Unit Price of Pipe Culvert

$$AAE = \text{Average Actual Elevation} = \frac{(\text{Actual Inlet elev.} + \text{Actual Outlet elev.})}{2}$$

$$APE = \text{Average Plan Elevation} = \frac{(\text{Plan Inlet elev.} + \text{Plan Outlet elev.})}{2}$$

When the actual location of a pipe culvert is changed from the location shown on the plans, the Engineer will make a pay adjustment deemed warranted based upon the relation of the pipe culvert as shown on the plans to the finished roadway and the relation of the pipe culvert as constructed to the finished roadway.

The top elevation column on the drainage summary sheet indicates the flow elevation at the top of structures intended to collect surface water.

The top elevation column on drainage structures not intended to collect surface water indicates the elevation at the top of the cover.

300 -6 LAYING PIPE

The Department reserves the right to perform forensic testing on any installed pipe.

(A) Rigid Pipe

Concrete and welded steel pipe will be considered rigid pipe. Lay pipe on prepared foundation, bell or groove end upgrade with the spigot or tongue fully inserted. Check each joint for alignment and grade as the work proceeds.

Use flexible plastic joint material except when material of another type is specified in the contract documents. Joint material of another type may be used when permitted.

Repair lift holes in concrete pipe, if present. Thoroughly clean and soak the lift hole and completely fill the void with an approved non-shrink grout. Submit alternate details for repairing lift holes to the engineer for review and approval.

For all pipes 42 inches in diameter and larger, wrap filter fabric around all pipe joints. Extend fabric at least 12 inches beyond each side of the joint. Secure fabric against the outside of the pipe by methods approved by the Engineer.

(B) Flexible Pipe (Except Structural Plate Pipe)

Corrugated steel, corrugated aluminum, corrugated polyethylene (HDPE), and polyvinylchloride (PVC) pipe will be considered flexible pipe. Place flexible pipe carefully on the prepared foundation starting at the downstream end with the inside circumferential laps pointing downstream and with the longitudinal laps at the side or quarter points.

Handle coated corrugated steel pipe with special care to avoid damage to coatings.

Join pipe sections with coupling band, fully bolted and properly sealed. Provide coupling bands for annular and helical corrugated metal pipe with circumferential and longitudinal strength sufficient to preserve the alignment, prevent separation of the sections, and prevent backfill infiltration. Match-mark all pipe 60 inches or larger in diameter at the plant for proper installation on the project.

At locations indicated in the plans, corrugated steel pipe sections shall be jointed together with rod and lug coupling bands, fully bolted. Sleeve gaskets shall be used in conjunction with rod and lug couplings and the joints properly sealed. Coupling bands shall provide circumferential and longitudinal strength sufficient to preserve the alignment, prevent separation of the sections and prevent infiltration of backfill material.

300-7 BEDDING AND BACKFILLING

Loosely place bedding material, in a uniform layer, a depth equal to the inside diameter of the pipe divided by 6 or 6 inches, whichever is greater. Leave bedding material directly beneath the pipe uncompacted and allow pipe seating and backfill to accomplish compaction. Excavate recesses to receive the bells where bells and spigot type pipe is used.

Place fill around the pipe in accordance with the applicable method shown on the plans in layers not to exceed 6 inches loose unless otherwise permitted. Compact to the density required by Subarticle 235-4(C). Approval of the backfill material is required prior to its use. Use select material as shown in the contract documents.

Take care during backfill and compaction operations to maintain alignment and prevent damage to the joints. Keep backfill free from stones, frozen lumps, chunks of highly plastic clay, or other objectionable material.

Grade and maintain all pipe backfill areas in such a condition that erosion or saturation will not damage the pipe foundation or backfill.

Excavatable flowable fill may be used for backfill when approved by the Engineer. When using excavatable flowable fill, ensure that the pipe is not displaced and does not float during backfill. Submit methods for supporting the pipe and material placement to the Engineer for review and approval.

Do not operate heavy equipment over any pipe until it has been properly backfilled with a minimum 3 feet of cover. Place, maintain, and finally remove the required cover that is above the proposed finished grade at no cost to the Department. Remove and replace, at no cost to the Department, pipe that becomes misaligned, shows excessive settlement, or has been otherwise damaged by the Contractor's operations.

300-8 INSPECTION AND MAINTENANCE

Prior to final acceptance, the Engineer will perform random video camera and or mandrel inspections to ensure proper jointing and that deformations do not exceed allowable limits. Replace pipes having cracks greater than 0.1 inches or deflections greater than 7.5 percent. Repair or replace pipes with cracks greater than 0.01 inches, exhibiting displacement across a crack, exhibiting bulges, creases, tears, spalls, or delamination. Maintain all pipe

installations in a condition such that they will function continuously from the time the pipe is installed until the project is accepted.

300-9 MEASUREMENT AND PAYMENT

General

No measurement will be made of any work covered by this section except as listed below. Removal and disposal of existing pavement is a part of the excavation for the new pipe culvert installation. Repair of the pavement will be made in accordance with Section 654.

Foundation Conditioning

Using Local Material

Undercut excavation is all excavation removed by undercutting below the bottom of the trench as staked. *Undercut Excavation* will be measured as the actual number of cubic yards of undercut excavation, measured in its original position and computed by the average end area method, that has been removed as called for in the contract and will be paid for at double the contract unit price for *Unclassified Excavation* as provided in Article 225-7.

Local material used for conditioning the foundation will be measured and paid for in accordance with Article 225-7 for *Unclassified Excavation* or in accordance with Article 230-5 for *Borrow Excavation* depending on the source of the material.

Local material used to replace pipe undercut excavation will be measured and paid for in accordance with Article 225-7 or Article 230-5.

Using Other Than Local Material

No measurement and payment will be made for *Undercut Excavation*. The material used to replace pipe undercut excavation will be classified as foundation conditioning material.

Foundation Conditioning Material, Minor Structures will be measured and paid for as the actual number of tons of this material weighed in trucks on certified platform scales or other certified weighing devices.

No direct payment will be paid for undercut excavation. Payment at the contract unit price for *Foundation Conditioning Material, Minor Structures* will be full compensation for all work of pipe undercut excavation.

Foundation Conditioning Fabric

Foundation Conditioning Fabric will be measured and paid for in square yards. The measurement will be based on the theoretical calculation using length of pipe installed and two times the standard trench width. No separate measurement will be made for overlapping fabric or the vertical fabric dimensions required to encapsulate the foundation conditioning material.

Bedding and Backfill - Select Material

No measurement will be made for select bedding and backfill material required in the contract documents. The select bedding and backfill material will be included in the cost of the installed pipe.

Where unclassified excavation or borrow material meets the requirements for select bedding and backfill and is approved for use by the Engineer, no deductions will be made to these pay items to account for use in the pipe installation.

Payment will be made under:

Pay Item

Foundation Conditioning Material, Minor Structures
Foundation Conditioning Fabric

Pay Unit

Ton
Square Yard

SECTION 310

PIPE CULVERTS

310-1 DESCRIPTION

Furnish and install drainage pipe at locations and size called for in the contract documents. The work includes construction of joints and connections to other pipes, endwalls, and drainage structures.

310-2 MATERIALS

Refer to Division 10:

| Item | Section |
|--|-----------|
| Plain Concrete Pipe Culvert | 1032-9(B) |
| Reinforced Concrete Pipe Culvert | 1032-9(C) |
| Precast Concrete Pipe End Sections | 1032-9(D) |
| Concrete Pipe Tees and Elbows | 1032-9(E) |
| Corrugated Aluminum Alloy Pipe Culvert | 1032-2(A) |
| Corrugated Aluminum Alloy Pipe Tees and Elbows | 1032-2(B) |
| Corrugated Steel Culvert Pipe and Pipe Arch | 1032-3(A) |
| Prefabricated Corrugated Steel Pipe End Sections | 1032-3(B) |
| Corrugated Steel Pipe Tees and Elbows | 1032-3(C) |
| Corrugated Steel Eccentric Reducers | 1032-3(D) |
| HDPE Smooth Lined Corrugated Plastic Pipe | 1032-10 |
| Polyvinylchloride (PVC) Pipe | 1032-11 |

Suppliers that provide metal pipe culverts, fittings, and all other accessories covered by this section shall meet the requirements of the Department's Brand Certification program for metal pipe culverts, and be listed on the Department's pre-approved list for suppliers of metal pipe culvert.

Do not use corrugated steel pipe in the following counties:

Beaufort, Bertie, Bladen, Brunswick, Camden, Carteret, Chowan, Columbus, Craven, Currituck, Dare, Gates, Hertford, Hyde, Jones, Martin, New Hanover, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrell, and Washington.

310-3 PIPE INSTALLATION

Install pipe, pipe tees, and elbows in accordance with Section 300.

310-4 SIDE DRAIN PIPE

Side drain pipe is defined as storm drain pipe running parallel to the roadway to include pipe in medians, outside ditches, driveways, and under shoulder berm gutter along outside shoulders greater than 4 feet wide.

Where shown in the plans, side drain pipe may be Class II Reinforced Concrete Pipe, aluminized corrugated steel pipe, corrugated aluminum alloy pipe, HDPE pipe, or PVC pipe. Corrugated steel pipe is restricted in the counties listed in Article 310-2. Install side drain pipe in accordance to Section 300. Cover for side drain pipe shall be at least one foot.

310-5 PIPE END SECTIONS

Choose which material to use for the required end sections. Both corrugated steel and concrete pipe end sections will work on concrete pipe, corrugated steel pipe, and HDPE smooth lined corrugated plastic pipe.

310-6 MEASUREMENT AND PAYMENT

Pipe will be measured and paid as the actual number of linear feet of pipe that has been incorporated into the completed and accepted work. Measurement of pipe will be made by counting the number of joints used and multiplying by the length of the joint to obtain the number of linear feet of pipe installed and accepted. Measurements of partial joints will be made along the longest length of the partial joint to the nearest 0.1 foot. Select bedding and backfill material will be included in the cost of the installed pipe.

Pipe End Sections, Tees, Elbows, and Eccentric Reducers will be measured and paid as the actual number of each of these items that have been incorporated into the completed and accepted work.

Payment will be made under:

| (a) Pay Item | Pay Unit |
|-----------------------------------|-------------|
| 15" R.C. Pipe Culverts, Class III | Linear Foot |
| 18" R.C. Pipe Culverts, Class III | Linear Foot |

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.

EROSION CONTROL PROVISIONS**SEEDING AND MULCHING****Seed Mixes for Bridge Maintenance P.O. Contracts ONLY****Seed Mix East**

| <u>Divisions:</u> | <u>Counties:</u> |
|--------------------------|---|
| 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

| <u>Divisions:</u> | <u>Counties:</u> |
|--------------------------|--|
| 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

50# Tall Fescue
10# Centipede
25# Bermudagrass (hulled)
500# Fertilizer
4000# Limestone

September 1 - February 28

50# Tall Fescue
10# Centipede
35# Bermudagrass (unhulled)
500# Fertilizer
4000# Limestone

Waste and Borrow Locations

March 1 – August 31

75# Tall Fescue
25# Bermudagrass (hulled)
500# Fertilizer
4000# Limestone

September 1 - February 28

75# Tall Fescue
35# Bermudagrass (unhulled)
500# Fertilizer
4000# Limestone

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

Approved Tall Fescue Cultivars

| | | | |
|----------------------------|------------------------|--------------|--------------------|
| 2 nd 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

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

May 1 - September 1

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

Areas Beyond the Mowing Pattern, Waste and Borrow Areas:

August 1 - June 1

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

May 1 - September 1

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

Approved Tall Fescue Cultivars

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

Approved Kentucky Bluegrass Cultivars:

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

Approved Hard Fescue Cultivars:

| | | | |
|---------|--------|-------|---------|
| Chariot | Nordic | Rhino | Warwick |
|---------|--------|-------|---------|

| | | |
|----------|------------|------------|
| Firefly | Oxford | Scaldis II |
| Heron | Reliant II | Spartan II |
| Minotaur | Reliant IV | Stonehenge |

On cut and fill slopes 2:1 or steeper add 20# Sericea Lespedeza 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

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

May 1 - September 1

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

Areas Beyond the Mowing Pattern, Waste and Borrow Areas:

August 1 - June 1

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

May 1 - September 1

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

Approved Tall Fescue Cultivars

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

Approved Kentucky Bluegrass Cultivars:

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

Approved Hard Fescue Cultivars:

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

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

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

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

TEMPORARY SEEDING:

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

FERTILIZER TOPDRESSING:

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

SUPPLEMENTAL SEEDING:

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

BASIS OF PAYMENT:

Payment for "Seeding and Mulching" will be included in the lump sum bid price for "Generic Erosion Control Item". 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.

EROSION & SEDIMENT CONTROL/STORMWATER CERTIFICATION

1-16-07 (Rev 1-15-08)

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 Pollutant 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 & Sediment Control Stormwater Supervisor to manage the Contractor and subcontractor(s) operations, insure compliance with Federal, State and Local ordinances and regulations, and to 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 & Sediment Control Stormwater Supervisor* - The Certified Supervisor shall be responsible for ensuring erosion and sediment/stormwater control is adequately implemented and maintained on the project and conducting the quality control program. The Certified Supervisor shall be on the project within 24 hours from initial exposure of an erodible surface to the project's final acceptance when questions or concerns arise with Erosion and Sedimentation Control/Stormwater issues. Perform the following duties:

- (1) **Manage Operations** - Coordinate and schedule the work of subcontractors so that erosion and sediment/stormwater control 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/stormwater control preventive measures are conformed to at each stage of the work.
 - (b) Prepare the required weekly erosion control punchlist 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/stormwater control site plans requested.
 - (e) Provide for erosion and sediment/stormwater control methods 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/stormwater control work in a timely and workmanlike manner.
 - (h) Fully install erosion and sediment/stormwater control work prior to suspension of the work.
 - (i) Coordinate with Department, Federal, State and Local Regulatory agencies on resolution of erosion and sediment/stormwater control issues due to the Contractor's operations.
 - (j) Ensure that proper cleanup occurs from vehicle tracking on paved surfaces and/or any location where sediment leaves the Right-of-Way.
 - (k) Have available a set of erosion control plans that has been 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 permit 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 E&SC Program. 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. construction materials, concrete

- washout, chemicals, litter, fuels, lubricants, coolants, hydraulic fluids, any other petroleum products, and sanitary waste).
- (b) Inspect E&SC/Stormwater devices at least once every 7 calendar days, twice weekly for 303(d) impaired streams, and within 24 hours after a significant rainfall event of 0.5 inches within 24 hours.
 - (c) Maintain an onsite rain gauge and a record of rainfall amounts and dates.
 - (d) Maintain E&SC/Stormwater inspection records for review by Department and Regulatory personnel upon request.
 - (e) Implement approved reclamation plans on all borrow pits and waste sites.
 - (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 E&SC/Stormwater awareness, the NPDES Permit requirements, and the requirements of the *General Permit, NCG010000*.
 - (i) Report violations of the NPDES permit to the Engineer who will notify the DWQ Regional Office within 24 hours.
- (3) Quality Control Program - Maintain a quality control program to control erosion, prevent sedimentation and follow provisions 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/or subcontractor(s) on site have the proper erosion and sediment/stormwater control certification.
 - (c) Notify the Engineer when the required certified erosion and sediment/stormwater control 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) Maintain temporary erosion and sediment control devices.
 - (h) Remove temporary erosion or sediment control devices when they are no longer necessary as agreed upon by the Engineer.
 - (i) 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 or sediment/stormwater control 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 *Certified Installer* is not onsite, the Contractor may substitute a Level I Installer with a Level II Foreman, 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 & 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 a *Continuing Immediate Corrective Action (Continuing ICA)*, *Notice of Violation*, or *Cease and Desist Order* for erosion and sediment control/stormwater related issues.

Should any of the following circumstances occur, the Chief Engineer may suspend or permanently revoke such certification.

- (A) Failure to adequately perform the duties as defined within the certification program
- (B) Issuance of a continuing 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 within another state

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

A registrant 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 registrant 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 registrant.

If a certification is temporarily suspended, the registrant 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 & 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.

Native Grass Seeding and Mulching - Bermuda

Native Grass Seeding and Mulching shall be performed on the disturbed areas of wetlands and riparian areas, and adjacent to Stream Relocation construction within a 50 foot zone on both sides of the stream or depression, measured from top of stream bank or center of depression. The stream bank of the stream relocation shall be seeded by a method that does not alter the typical cross section of the stream bank. Native Grass Seeding and Mulching shall also be performed in the permanent soil reinforcement mat section of preformed scour holes, and in other areas as directed.

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.

March 1 – August 31

| | |
|-------|-----------------------|
| 25# | Bermudagrass (hulled) |
| 6# | Indiangrass |
| 8# | Little Bluestem |
| 4# | Switchgrass |
| 25# | Browntop Millet |
| 500# | Fertilizer |
| 4000# | Limestone |

September 1 – February 28

| | |
|-------|-------------------------|
| 35# | Bermudagrass (unhulled) |
| 6# | Indiangrass |
| 8# | Little Bluestem |
| 4# | Switchgrass |
| 35# | Rye Grain |
| 500# | Fertilizer |
| 4000# | Limestone |

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.

Native Grass Seeding and Mulching shall be performed in accordance with Section 1660 of the *Standard Specifications* and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

Measurement and Payment

Payment for Native Grass *Seeding and Mulching* will be included in the contract bid price for Lump Sum – *Generic Grading*.

CRIMPING STRAW MULCH:

Crimping shall be required on this project adjacent to any section of roadway where traffic is to be maintained or allowed during construction. In areas within six feet of the edge of

pavement, straw is to be applied and then crimped. After the crimping operation is complete, an additional application of straw shall be applied and immediately tacked with a sufficient amount of undiluted emulsified asphalt.

Straw mulch shall be of sufficient length and quality to withstand the crimping operation.

Crimping equipment including power source shall be subject to the approval of the Engineer providing that maximum spacing of crimper blades shall not exceed 8".

MINIMIZE REMOVAL OF VEGETATION:

The Contractor shall minimize removal of vegetation at stream banks and disturbed areas within the project limits as directed.

STOCKPILE AREAS:

The Contractor shall install and maintain erosion control devices sufficient to contain sediment around any erodible material stockpile areas as directed.

ACCESS AND HAUL ROADS:

At the end of each working day, the Contractor shall install or re-establish temporary diversions or earth berms across access/haul roads to direct runoff into sediment devices. Silt fence sections that are temporarily removed shall be reinstalled across access/haul roads at the end of each working day.

GRAVEL CONSTRUCTION ENTRANCE:

Description

This work consists of furnishing, installing, and maintaining and removing any and all material required for the construction of a *Gravel Construction Entrance*.

Materials

Refer to Division 10

| Item | Section |
|------------------------------------|----------------|
| Filter Fabric for Drainage, Type 2 | 1056 |
| Stone for Erosion Control, Class A | 1042 |

Construction Methods

The Contractor shall install a Gravel Construction Entrance in accordance with Standard Drawing No. 1607.01 and at locations as directed.

Measurement and Payment

Payment for all labor and materials necessary to complete the work of *Gravel Construction Entrance*, including construction, maintenance, and removal of the gravel construction entrance, will be included in the contract bid price for Lump Sum - *Generic Grading*.

TEMPORARY DIVERSION:

This work consists of installation, maintenance, and cleanout of *Temporary Diversions* in accordance with Section 1630 of the *Standard Specifications*. Payment for installation and cleanout will be included in the contract bid price for Lump Sum - *Roadway Construction*.

SPECIAL SEDIMENT CONTROL FENCE:**Description**

This work consists of furnishing materials, and the construction, maintenance, and removal of *Special 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) 1/4" Hardware Cloth

Hardware cloth shall have 1/4" 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

Payment for all labor and materials necessary to complete the work of *Special Sediment Control Fence* will be included in the contract bid price for Lump Sum – *Generic Grading*.

SAFETY FENCE**Description**

Safety Fence shall consist of furnishing materials, installing and maintaining polyethylene or polypropylene fence along the outside riparian buffer, wetland, or water boundary, or other boundaries located within the construction corridor to mark the areas that have been approved to infringe within the buffer, wetland, endangered vegetations, culturally sensitive areas or water. The fence shall be installed prior to any land disturbing activities.

Materials

Polyethylene or polypropylene fence shall be a highly visible preconstructed safety fence approved by the Engineer. The fence material shall have an ultraviolet coating.

Either wood posts or steel posts may be used. Wood posts shall be hardwood with a wedge or pencil tip at one end, and shall be at least 5 ft. in length with a minimum nominal 2" x 2" cross section. Steel posts shall be at least 5 ft. in length, and have a minimum weight of 0.85 lb./ft. of length.

Construction Methods

No additional clearing and grubbing is anticipated for the installation of this fence; however, if any clearing and grubbing is required, it will be the minimum required for the installation of the safety fence. Such clearing shall include satisfactory removal and disposal of all trees, brush, stumps and other objectionable material.

The fence shall be erected to conform to the general contour of the ground. When determined necessary, minor grading along the fence line shall be performed to meet this requirement provided no obstructions to proper drainage are created.

Posts shall be set at a maximum spacing of 10 ft. and maintained in a vertical position and may be hand set or set with a post driver. If hand set, all backfill material shall be thoroughly tamped. Wood posts may be sharpened to a dull point if power driven. Posts damaged by power driving shall be removed and replaced prior to final acceptance. The tops of all wood posts shall be cut at a 30-degree angle. The wood posts may, at the option of the Contractor, be cut at this angle either before or after the posts are erected.

The fence fabric shall be attached to the wood posts with one 2" galvanized wire staple across each cable or to the steel posts with wire or other acceptable means.

The Contractor shall be required to maintain the safety fence in a satisfactory condition for the duration of the project as determined by the Engineer.

Measurement and Payment

Safety Fence will be measured and paid for as the actual number of linear feet installed in placed and accepted. Such payment will be full compensation including but not limited to clearing and grading, furnishing and installing fence fabric with necessary posts and post bracing, staples, tie wires, tools, equipment and incidentals necessary to complete this work.

Payment will be made under:

Pay Item
Safety Fence

Pay Unit
Linear Foot

STRUCTURE PROVISIONS

SUBMITTAL OF WORKING DRAWINGS

(1-27-2010)

1.0 GENERAL

Submit working drawings in accordance with Article 105-2 of the *Standard Specifications* and this provision. For this provision, “submittals” refers to only those listed in this provision. The list of submittals contained herein does not represent a list of required submittals for the project. Submittals are only necessary for those items as required by the contract. Make submittals that are not specifically noted in this provision directly to the Resident Engineer. The Bridge Management Unit will review submittals.

If a submittal contains variations from plan details or specifications or significantly affects project cost, field construction or operations, discuss the submittal with and submit all copies to the Resident Engineer. State the reason for the proposed variation in the submittal. To minimize review time, make sure all submittals are complete when initially submitted. Provide a contact name and information with each submittal. Direct any questions regarding submittal requirements to the Resident Engineer, Bridge Management Unit contacts are noted below.

In order to facilitate in-plant inspection by NCDOT and approval of working drawings, provide the name, address and telephone number of the facility where fabrication will actually be done if different than shown on the title block of the submitted working drawings. This includes, but is not limited to, precast concrete items, prestressed concrete items and fabricated steel or aluminum items.

2.0 ADDRESSES AND CONTACTS

For submittals to the Bridge Management Unit, use the following addresses:

Via US mail:

Mr. Dan Holderman, P. E.
State Bridge Management Engineer
North Carolina Department
of Transportation
Bridge Management Unit
1565 Mail Service Center
Raleigh, NC 27699-1565

Via other delivery service:

Mr. Dan Holderman, P. E. State Bridge
State Bridge Management Engineer
North Carolina Department
of Transportation
Bridge Management Unit
4809 Beryl Road
Raleigh, NC 27606

Submittals may also be made via email.

Send submittals to:

dholderman@ncdot.gov (Dan Holderman)

The status of the review of structure-related submittals sent to the Structure Design Unit can be viewed from the Unit’s web site, via the “Contractor Submittal” link.

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

Primary Structures Contact:

Dan Holderman
 (919) 835-8217
 (919) 733-2348 facsimile
dholderman@ncdot.gov

3.0 SUBMITTAL COPIES

Furnish one complete copy of each submittal, including all attachments, to the Resident Engineer. At the same time, submit the number of hard copies shown below of the same complete submittal directly to the Bridge Management Unit.

The first table below covers “Structure Submittals”. The Resident Engineer will receive review comments and drawing markups for these submittals from the Bridge Management Unit.

The second table in this section covers “Geotechnical Submittals”. The Resident Engineer will receive review comments and drawing markups for these submittals from the Bridge Management Unit.

Unless otherwise required, submit one set of supporting calculations to either the Bridge Management Unit. Provide additional copies of any submittal as directed by the Engineer.

| Submittal | Copies Required by Bridge Management Unit | Contract Reference Requiring Submittal ¹ |
|---|---|--|
| Arch Culvert Falsework | 5 | Plan Note, SN Sheet & “Falsework and Formwork” |
| Box Culvert Falsework ⁷ | 5 | Plan Note, SN Sheet & “Falsework and Formwork” |
| Cofferdams | 6 | Article 410-4 |
| Evazote Joint Seals ⁶ | 9 | “Evazote Joint Seals” |
| Expansion Joint Seals (hold down plate type with base angle) | 9 | “Expansion Joint Seals” |
| Expansion Joint Seals (modular) | 2, then 9 | “Modular Expansion Joint Seals” |
| Expansion Joint Seals (strip seals) | 9 | “Strip Seals” |
| Falsework & Forms ² (substructure) | 8 | Article 420-3 & “Falsework and Formwork” |
| Falsework & Forms (superstructure) | 8 | Article 420-3 & “Falsework and Formwork” |
| Girder Erection over Railroad | 5 | Railroad Provisions |
| Maintenance and Protection of Traffic Beneath Proposed Structure | 8 | “Maintenance and Protection of Traffic Beneath Proposed Structure at Station ____” |

| | | |
|--|---------------------------|---|
| Metal Bridge Railing | 8 | Plan Note |
| Metal Stay-in-Place Forms | 8 | Article 420-3 |
| Metalwork for Elastomeric Bearings ^{4,5} | 7 | Article 1072-10 |
| Miscellaneous Metalwork ^{4,5} | 7 | Article 1072-10 |
| Optional Disc Bearings ⁴ | 8 | “Optional Disc Bearings” |
| Overhead Signs | 13 | Article 903-3(C) & Applicable Provisions |
| Pile Splicers | 7 | Subarticle 450-7(C) & “Piles” |
| Pile Points | 7 | Subarticle 450-7(D) & “Piles” |
| Placement of Equipment on Structures (cranes, etc.) | 7 | Article 420-20 |
| Pot Bearings ⁴ | 8 | “Pot Bearings” |
| Precast Concrete Box Culverts | 2, then 1 reproducible | “Optional Precast Reinforced Concrete Box Culvert at Station ____” |
| Precast Retaining Wall Panels | 10 | Article 1077-2 |
| Prestressed Concrete Cored Slab (detensioning sequences) ³ | 6 | Article 1078-11 |
| Prestressed Concrete Deck Panels | 6 and 1 reproducible | Article 420-3 |
| Prestressed Concrete Girder (strand elongation and detensioning sequences) | 6 | Articles 1078-8 and 1078-11 |
| Removal of Existing Structure over Railroad | 5 | Railroad Provisions |
| Revised Bridge Deck Plans (adaptation to prestressed deck panels) | 2, then 1 reproducible | Article 420-3 |
| Revised Bridge Deck Plans (adaptation to modular expansion joint seals) | 2, then 1 reproducible | “Modular Expansion Joint Seals” |
| Sound Barrier Wall Casting Plans | 10 | Article 1077-2 & “Sound Barrier Wall” |
| Sound Barrier Wall Steel Fabrication Plans ⁵ | 7 | Article 1072-10 & “Sound Barrier Wall” |
| Structural Steel ⁴ | 2, then 7 | Article 1072-10 |
| Temporary Detour Structures | 10 | Article 400-3 & “Construction, Maintenance and Removal of Temporary Structure at Station ____” |
| TFE Expansion Bearings ⁴ | 8 | Article 1072-10 |

FOOTNOTES

1. References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Articles and subarticles refer to the *Standard Specifications*.
2. Submittals for these items are necessary only when required by a note on plans.
3. Submittals for these items may not be required. A list of pre-approved sequences is available from the producer or the Materials & Tests Unit.
4. The fabricator may submit these items directly to the Structure Design Unit.
5. The two sets of preliminary submittals required by Article 1072-10 of the *Standard Specifications* are not required for these items.
6. Submittals for Fabrication Drawings are not required. Submittals for Catalogue Cuts of Proposed Material are required. See Section 5.A of the referenced provision.
7. Submittals are necessary only when the top slab thickness is 18" or greater.

| Submittal ¹ | Copies Required by Bridge Management Unit | Contract Reference Requiring Submittal ² |
|---|---|--|
| Crosshole Sonic Logging (CSL) Reports | 1 | "Crosshole Sonic Logging" |
| Drilled Pier Construction Sequence Plans | 1 | "Drilled Piers" |
| Pile Driving Analyzer (PDA) Reports | 2 | "Pile Driving Analyzer" |
| Pile Driving Equipment Data ³ | 1 | Article 450-5 & "Piles" |
| Retaining Walls | 8 | Applicable Provisions |
| Contractor Designed Shoring | 7 | "Temporary Shoring", "Anchored Temporary Shoring" & "Temporary Soil Nail Walls" |

FOOTNOTES

1. With the exception of "Pile Driving Equipment Data", electronic copies of geotechnical submittals are required. See referenced provision.
2. References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Articles refer to the *Standard Specifications*.
3. Download Pile Driving Equipment Data Form from following link:
<http://www.ncdot.org/doh/preconstruct/highway/geotech/formdet/>
 Submit one hard copy of the completed form to the Resident Engineer. Submit a second copy of the completed form electronically, by facsimile or via US Mail or other delivery service to the Bridge Management Unit. Electronic submission is preferred. See second page of form for submittal instructions.

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 or metalize these devices. Electroplating will not be allowed. Any coating required by the Engineer will be considered incidental to the various pay items requiring temporary works.

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.

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.

PILES

(3-5-10)

Revise the *Standard Specifications* as follows:

1.0 Description

Furnish and install piles with sufficient lengths in accordance with the contract and accepted submittals. Provide steel and prestressed concrete piles and composite piles with both concrete and steel sections as shown on the plans. Drive and drill in piles and use pile tips and accessories as shown on the plans. Galvanize, restrike, redrive, splice, cut off and build up piles and perform predrilling, spudding and pile driving analyzer (PDA) testing as necessary or required. For this provision, “pile embedment” refers to the required pile embedment in the cap or footing and “pile penetration” refers to the minimum required pile tip elevation or penetration into natural ground, whichever is deeper.

2.0 Materials

Refer to Division 10 of the *Standard Specifications*:

| Item | Section |
|--------------------------------------|----------------|
| Flowable Fill, Non-Excavatable | 340 |
| Portland Cement Concrete, Class A | 1000 |
| Reinforcing Steel | 1070 |
| Steel Pipe Pile Plates | 1072 |
| Steel and Prestressed Concrete Piles | 1084 |

For drilled-in piles, use Class A Concrete in accordance with Article 1000-4 of the Standard Specifications except as modified herein. Provide concrete with a slump of 6 to 8 inches (150 to 200 mm). Use an approved high-range water reducer to achieve this slump.

For galvanized steel piles, see Section 1076 of the *Standard Specifications*. For composite piles with both prestressed concrete and steel H pile sections, use prestressed concrete piles and steel H piles in accordance with Section 1084 of the *Standard Specifications*. Use steel pile points and splicers approved by the NCDOT Materials & Tests (M&T) Unit. Obtain a list of approved pile points and splicers from: <https://apps.dot.state.nc.us/vendor/approvedproducts/>

3.0 Pile Lengths

The estimated pile lengths shown on the plans are for bid purposes only. Provide piles of sufficient lengths for the required driving resistance, pile penetration and pile embedment. At the Contractor's option and no additional cost to the Department, make investigations as necessary to determine required pile lengths.

4.0 Construction Methods

A. Handling and Storing Piles

Handle, transport and store piles so that piles are kept clean and undamaged. Do not use chains, cables or hooks that can damage or scar piles. Do not damage coatings on steel piles. When handling prestressed concrete piles, support piles at pick-up points as shown on the plans.

Protect steel piles as far as practicable from corrosion. Store piles above ground upon platform skids, or other supports, and keep free from dirt, grease, vegetation and other foreign material. Damaged, bent or cracked piles will be rejected.

B. Pile Installation

If applicable, completely excavate for caps and footings before installing piles. If applicable and unless noted otherwise on the plans, construct embankments to bottom of cap or footing elevations for a horizontal distance of 50 ft (15 m) from any pile except where fill slopes are within 50 ft (15 m) of a pile.

Install piles with the following tolerances.

1. Axial alignment within ¼ inch per foot (21 mm per meter) of vertical or batter shown on the plans

2. Horizontal alignment within 3" (75 mm) of plan location, longitudinally and transversely
3. Pile embedment within 3" (75 mm) more and 2" (50 mm) less of the embedment shown on the plans

No additional payment will be made for increased cap or footing dimensions due to piles installed out of position.

If necessary, build up prestressed concrete piles or splice steel piles as shown on the plans. Do not use more than 3 sections (2 splices) of steel piling per pile. Cut off piles at required elevations along a plane normal to the axis of the pile as necessary. Do not damage or spall piles when cutting off prestressed concrete piles.

C. Pile Accessories

If required, use pile accessories including pipe pile plates and steel pile points and splicers as shown on the plans. Perform any welding in accordance with the contract. Weld pipe pile plates with the specified dimensions to steel pipe piles as shown on the plans.

Attach steel pile points to steel piles in accordance with the manufacturer's instructions. The minimum weld length is twice the flange width for steel H piles.

Use steel pile tips with prestressed concrete piles as shown on the plans. Use steel pile splicers for splicing steel H pile tips and composite piles. Attach pile splicers in accordance with the manufacturer's instructions.

D. Driven Piles

When predrilling, spudding and installing the initial portions of steel piles with vibratory hammers, submit these pile installation methods with the proposed pile driving methods and equipment for review and acceptance. Spudding is defined as driving or dropping a steel H pile and then removing it. The Engineer will approve the predrilling depth and diameter, spudding depth and H pile size and depth of pile installation with a vibratory hammer. Do not use vibratory hammers to install prestressed concrete piles.

Drive piles in accordance with the accepted submittals and this provision. Unless otherwise approved, do not drive piles within 50 ft (15 m) of cast-in-place concrete until the concrete cures for at least 3 days.

Limit driving stresses in accordance with the *AASHTO LRFD Bridge Design Specifications*. If a tip elevation is noted on the plans for steel and prestressed concrete piles, drive piles to the minimum required driving resistance and tip elevation. Otherwise, drive steel and prestressed concrete piles to the minimum required driving resistance and a penetration into natural ground of at least 10 ft (3 m). For composite piles, drive piles to the minimum required driving resistance and the prestressed concrete and steel H pile sections to their respective minimum required tip elevations noted on the plans.

Also, drive piles to the minimum required tip elevation or penetration into natural ground, whichever is deeper, in a continuous operation unless stopped due to exceeding the maximum blow count or driving stresses, insufficient pile length or other approved reasons. Natural ground within an area of a new embankment is defined as the bottom of the embankment or footings, whichever is lower.

Protect coatings in an approved manner when driving coated steel piles through templates. Redrive piles raised or moved laterally due to driving adjacent piles.

1. Predrilling and Spudding

If necessary or required, perform predrilling for piles and spudding with a steel H pile as noted on the plans or in accordance with the accepted submittals. Predrill pile locations to the specified elevations noted on the plans, revised elevations approved by the Engineer or depths in accordance with the accepted submittals. When noted on the plans and at the Contractor's option, spudding may be used in lieu of predrilling. Do not perform spudding below specified predrilling elevations, revised elevations approved by the Engineer or depths in accordance with the accepted submittals.

When noted on the plans or predrilling in water or wetlands, use temporary steel casings meeting the requirements of steel casings for pile excavation in accordance with this provision with the exception of casing diameter. For steel casing diameters, use casings with a minimum inside diameter equal to the predrilling diameter. Use steel casings from a minimum of 2 ft (0.6 m) above the static water elevation or ground line, whichever is higher, to a minimum of 5 ft (1.5 m) below the ground or mud line. More than 5 ft (1.5 m) embedment may be necessary if steel casings are not stable or predrilling or spudding disturbs material outside the casings.

Perform predrilling and spudding such that large ground movements and voids below ground do not occur and piles can be driven to the required resistance and pile penetration. Do not deposit spoils above the ground or mud line in water or wetlands. Dispose of spoils in accordance with Section 802 of the *Standard Specifications* and as directed by the Engineer. When predrilling or spudding is complete, remove all steel casings before driving piles.

2. Driving Equipment

Submit the proposed pile driving methods and equipment (pile driving equipment data form) including the pile driving hammer, hammer cushion, pile helmet and cushion for all piles for review and acceptance. Do not submit more than two pile driving hammers per pile type per submittal. Provide 2 copies of this form at least 30 calendar days before driving piles. All equipment is subject to satisfactory field performance.

Drive piles with accepted driving equipment using air, steam or diesel hammers. Use pile driving hammers that will not overstress piles and provide the required driving resistance at a blows per foot ranging from 30 to 180. Use a variable energy hammer to drive prestressed concrete piles.

Operate air and steam hammers within the manufacturer's specified ranges and 10% of the manufacturer's rated speed in blows per minute or a rate approved by the Engineer. Use a plant and equipment for air or steam hammers with sufficient capacity to maintain, under working conditions, the volume and pressure specified by the manufacturer. Equip the plant and equipment with accurate pressure gauges that are easily accessible. Provide striking parts of air and steam hammers that weigh at least one-third the weight of the pile helmet and pile, with a minimum weight of 2,750 lbs (1,250 kg).

Equip open-end (single acting) diesel hammers with a graduated scale (jump stick) extending above the ram cylinder, graduated rings or grooves on the ram or an electric sound activated remote measuring instrument to determine the hammer stroke during driving. Equip closed-end (double acting) diesel hammers with a calibrated bounce chamber pressure gauge mounted near the ground and provide a current calibrated chart or graph equating bounce chamber pressure and gauge hose length to equivalent energy. Submit this chart or graph with the proposed pile driving methods and equipment for closed-end diesel hammers.

Hold pile heads in position with pile helmets that closely fit over the pile heads and extend down the sides of piles a sufficient distance. Protect pile heads of prestressed concrete piles from direct impact with accepted pile cushions. Use pile cushions made of pine plywood with a minimum thickness of 4" (100 mm). Unless otherwise approved, provide a new pile cushion for each prestressed concrete pile. Replace pile cushions during driving when a cushion is compressed more than one-half its original thickness or begins to burn.

The Engineer may inspect the hammer cushion before beginning driving and periodically throughout the project. Expose the hammer cushion for inspection as directed by the Engineer. Replace or repair any hammer cushion that is less than 25% of its original thickness.

3. Required Driving Resistance

The Engineer will determine the acceptability of the proposed pile driving methods and equipment and provide the blows per foot and equivalent set for 10 blows for the required driving resistance. The minimum required driving resistance is equal to the factored resistance noted on the plans plus any additional resistance for downdrag and scour, if applicable, divided by a resistance factor. When performing PDA testing in accordance with the *AASHTO LRFD Bridge Design Specifications*, the resistance factor is 0.75. Otherwise, the resistance factor for the wave equation analysis is 0.60.

Unless otherwise approved, stop driving piles when refusal is reached. Refusal is defined as 240 blows per foot or any equivalent set.

4. Redriving Piles

Once the required pile penetration is achieved, the Contractor may choose to or the Engineer may require the Contractor to stop driving, wait and restrrike or redrive piles to achieve the required driving resistance. If the Contractor

chooses to restrike or redrive piles, no payment will be made for restrikes or redrives. If the Engineer requires the Contractor to restrike or redrive piles, payment will be made in accordance with section 5.0 of this provision. When the Engineer requires restrikes or redrives, the Engineer will determine the number of restrikes or redrives and the time to wait after stopping driving and between restrikes and redrives. The time to wait will range from 4 to 24 hours.

Use the same pile driving methods, equipment and compressed pile cushion from the previous driving to restrike or redrive the pile unless the cushion is unacceptable due to deterioration. Do not use a cold diesel hammer for a restrike or redrive, unless it is impractical to do otherwise as determined by the Engineer. In general, warm up the hammer by applying at least 20 blows to a previously driven pile or timber mats on the ground.

E. Drilled-in Piles

If required, perform pile excavation to specified elevations shown on the plans or revised elevations approved by the Engineer. Excavate holes at pile locations with diameters that will result in at least 3" (75 mm) of clearance all around piles. Before filling holes, support and center piles in excavations and when noted on the plans, drive piles to the required driving resistance. Remove any fluid from excavations, and at the Contractor's option, fill holes with either concrete or flowable fill unless required otherwise in the contract.

1. Pile Excavation

Use equipment of adequate capacity and capable of drilling through soil, rock, boulders, debris, man-made objects and any other materials encountered. Blasting is not permitted to advance excavations. Blasting for core removal is only permitted when approved by the Engineer. Dispose of drilling spoils in accordance with Section 802 of the *Standard Specifications* and as directed by the Engineer. Drilling spoils consist of all excavated materials including fluids removed from excavations by pumps or drilling tools.

If unstable, caving or sloughing soils are anticipated or encountered, stabilize holes with either slurry or temporary steel casings. When using slurry, submit slurry details including product information, manufacturer's recommendations for use, slurry equipment details and written approval from the slurry supplier that the mixing water is acceptable before beginning drilling. When using steel casings, use either the sectional type or one continuous corrugated or non-corrugated piece. Steel casings should consist of clean watertight steel of ample strength to withstand handling and driving stresses and the pressures imposed by concrete, earth and backfill. Use steel casings with an outside diameter equal to the hole size and a minimum wall thickness of ¼ inch (6 mm).

2. Filling Holes

Check the water inflow rate at the bottom of holes after all pumps have been removed. If the inflow rate is less than 6" (150 mm) per half hour, remove any fluid and free fall concrete or flowable fill into excavations. Ensure that concrete or flowable fill flows completely around piles. If the water inflow rate

is greater than 6" (150 mm) per half hour, propose and obtain acceptance of a procedure for placing concrete or flowable fill before filling holes. Place concrete or flowable fill in a continuous manner and remove all steel casings.

F. Pile Driving Analyzer

If required, test piles with a pile driving analyzer (PDA) manufactured by Pile Dynamics, Inc., analyze data and provide PDA reports. Perform PDA testing in accordance with ASTM D4945. Either the Engineer will perform PDA testing and analysis or use a PDA Consultant prequalified by the NCDOT Contractual Services Unit for Pile Driving Analyzer Work (work code 3060) to perform PDA testing and analysis and provide PDA reports. When using a PDA Consultant, use a PDA Operator approved as a Field Engineer (key person) for the PDA Consultant. Also, provide PDA reports sealed by a Professional Engineer approved as a Project Engineer (key person) for the same PDA Consultant.

The Engineer will determine the number of piles and which piles to be tested with a PDA. Do not drive piles with a PDA until the proposed pile driving methods and equipment has been preliminarily accepted. Notify the Engineer of the pile driving schedule a minimum of 7 calendar days in advance.

The Engineer will complete the review and acceptance of the proposed pile driving methods and equipment and provide the blows per foot and equivalent set for 10 blows for the required driving resistance within 10 calendar days after the Engineer receives the PDA report or the Engineer finishes PDA testing. A PDA report for or PDA testing on multiple piles may be required as determined by the Engineer before the 10 day time period begins.

1. Preparation

Provide piles for PDA testing that are 5 ft (1.5 m) longer than the estimated pile lengths shown on the plans. Supply an AC electrical power source of a voltage and frequency suitable for computer equipment.

Provide a 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 by 6 ft (1.8 m by 1.8 m) and a minimum roof height of 8 ft (2.4 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 Engineer, at an approximate distance equal to 3 times the pile diameter below the pile head. If the PDA Consultant or Engineer chooses to drill the bolt holes, provide the necessary equipment, tools and assistance to do so. A hammer drill is required for concrete piles. Allow for 2 hours per pile to drill holes.

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

2. Testing

Use only the preliminarily accepted pile driving methods and equipment to drive piles with the PDA instruments attached. Drive piles in accordance with this provision and as directed by the PDA Operator or Engineer. The PDA Operator or Engineer may require the Contractor to modify the pile installation procedure during driving. Dynamic measurements will be recorded and used to evaluate the hammer performance, driving resistance and stresses, energy transfer, pile integrity and various soil parameters such as quake and damping.

If required, reattach the PDA instruments and restrike or redrive the pile in accordance with this provision. Obtain the required stroke and at least 6" (150 mm) of penetration as directed by the PDA Operator or Engineer. Dynamic measurements will be recorded during restriking and redriving. The Engineer will determine when PDA testing has been satisfactorily completed.

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.

3. Analysis

When using a PDA Consultant, analyze data with the CAsE Pile Wave Analysis Program (CAPWAP), version 2006 or later, manufactured by Pile Dynamics, Inc. 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 Engineer.

4. Report

When using a PDA Consultant, submit 2 copies of each PDA report within 7 calendar days of completing field testing. Include the following in PDA reports:

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 driving resistance and resistance factor
 - Concrete compressive strength and/or steel pile yield strength
 - Pile splice type and locations
 - Pile batter
 - Installation methods including use of predrilling, 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 data (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 data and executable CAPWAP input and output files

5.0 Measurement and Payment

HP 12 x 53 Steel Piles will be measured and paid for in linear feet (meters). Steel and prestressed concrete piles will be measured as the pile length before installation minus any pile cut-offs. No payment will be made for pile cut-offs or cutting off piles. No payment will be made for damaged, defective or rejected piles or any piles for falsework, bracing, templates or temporary work bridges. The contract unit prices for HP 12 x 53 Steel Piles and will also be full compensation for driving piles.

Composite piles will be measured as the pile length of the prestressed concrete and steel H pile sections before installation minus any pile cut-offs. The concrete and steel sections will be measured and paid for at the contract unit prices for HP 12 x 53 Steel Piles, respectively. No payment will be made for portions of steel H pile sections embedded in prestressed concrete sections or steel pile splicers and any associated hardware or welding.

For driven piles, once the required resistance and pile penetration is achieved, the Contractor may drive the remaining portion of piles to grade in lieu of cutting off piles provided the remaining portions do not exceed 5 ft (1.5 m) and the piles can be driven without being damaged or reaching the maximum blow count or refusal. When this occurs, the additional length of piles driven will be measured and paid for at the contract unit prices for HP 12 x 53 Steel Piles.

Steel Pile Points and *Pipe Pile Plates* will be measured and paid for in units of each. *Steel Pile Points* and *Pipe Pile Plates* will be measured as one per pile.

Predrilling for Piles will be measured and paid for in linear feet (meters). For bents with a predrilling pay item as shown on the substructure plans, predrilling will be paid for as *Predrilling for Piles* and measured per pile location as the depth from the ground or mud line to specified predrilling elevations or revised elevations approved by the Engineer. The contract unit price for *Predrilling for Piles* will also be full compensation for using temporary steel casings. For bents without a predrilling pay item as shown on the substructure plans, predrilling will be considered incidental to the contract unit prices for HP 12 x 53 Steel Piles.

No direct payment will be made for spudding or using temporary steel casings for spudding. Spudding and using temporary steel casings for spudding will be considered incidental to the contract unit prices for HP 12 x 53 Steel Piles.

Pile Redrives will be measured and paid for in units of each. *Pile Redrives* will be measured as the number of restrikes or redrives required by the Engineer. No payment will be made for restrikes or redrives when the Contractor chooses to restrike or redrive piles.

Pile Excavation in Soil and *Pile Excavation Not in Soil* will be measured and paid for in linear feet (meters). Pile excavation will be measured as the depth from the ground line to the specified elevations or revised elevations approved by the Engineer. Not in soil is defined as material with a rock auger penetration rate of less than 2" (50 mm) per 5 minutes of drilling at full crowd force. Once not in soil is encountered, seams, voids and weathered rock less than 3 ft (1 m) thick with a rock auger penetration rate of greater than 2" (50 mm) per 5 minutes of drilling at full crowd force will be paid for at the contract unit price for *Pile*

Excavation Not in Soil. Seams, voids and weathered rock greater than 3 ft (1 m) thick will be paid for at the contract unit price for *Pile Excavation in Soil* where not in soil is no longer encountered. The contract unit prices for *Pile Excavation in Soil* and *Pile Excavation Not in Soil* will also be full compensation for stabilizing and filling holes with either concrete or flowable fill.

PDA Testing will be measured and paid for in units of each. No payment for *PDA Testing* will be made if the Engineer performs PDA testing. If the Engineer does not perform PDA testing, *PDA Testing* will be measured as one per pile. The contract unit price for *PDA Testing* will be full compensation for performing PDA testing the first time a pile is tested with a PDA, performing analysis on data collected during initial drive, restrikes and redrives and providing the PDA report. Subsequent PDA testing of the same piles will be considered incidental to the contract unit price for *Pile Redrives*.

PDA Assistance will be measured and paid for in units of each. *PDA Assistance* will be measured as one per pile. The contract unit price for *PDA Assistance* will be full compensation for the Contractor's assistance to perform the PDA testing during initial drive, restrikes and redrives.

Payment will be made under:

Pay Item

HP 12 x 53 Steel Piles

Steel Pile Points

Pay Unit

Linear Foot (Meter)

Each

GROUT FOR STRUCTURES

(7-12-07)

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.

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.

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.

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. |

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.

PRECAST CONCRETE BARRIER RAIL:

Use the precast concrete barrier rail in accordance with the plans, sections 460 and 1077 of the Standard Specifications and this special provision.

Replace references to “concrete barrier rail” with “precast concrete barrier rail.”

Submit 8 copies of casting drawings as required in accordance with the “Submittal of Working Drawings” Special Provision. Casting drawings should include all details and notes required for casting and installing precast concrete barrier rail including the installation, tensioning of the anchor bolts, and grouting of anchor bolt pockets. Inspection of the elements is required in accordance with the Standard Specifications.

Payment shall include all work, tools and materials required beginning with precasting the concrete barriers through the completed installation of the barriers on the bridge. The payment includes but is not be limited to casting, storing, transporting, erecting, and anchoring the precast concrete barrier rail units. The payment shall include the grout bed, steel anchor plates, and adhesive anchors.

Payment will be made under:

Precast Concrete Barrier Rail.....Linear Feet

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 |
|---------------------------------|---------------|
| <i>Hot Applied Joint Sealer</i> | 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 710-10(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 1006 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.

STANDARD SPECIAL PROVISION**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 DBE SUBCONTRACTORS

[illegible]

THIS FORM MUST BE COMPLETED IN ORDER FOR THE BID TO BE CONSIDERED RESPONSIVE AND BE PUBLICLY READ.
BIDDERS WITH NO DBE PARTICIPATION MUST SO INDICATE THIS ON THE FORM BY ENTERING THE WORD OR NUMBER ZERO.

| LISTING OF DBE SUBCONTRACTORS | | | | |
|-------------------------------|----------|------------------|----------------------------------|---------------------------------|
| Sheet ____ of ____ | | | | |
| FIRM NAME AND ADDRESS | ITEM NO. | ITEM DESCRIPTION | (*) AGREED UPON UNIT PRICE | DOLLAR VOLUME OF SUBLET ITEM |
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| CONTRACT NO. _____ | | COUNTY _____ | FIRM _____ | |

[illegible][illegible]

| LISTING OF DBE SUBCONTRACTORS | | | | |
|--------------------------------------|-----------------|-------------------------|---|---|
| | | | | Sheet ____ of ____ |
| FIRM NAME AND ADDRESS | ITEM NO. | ITEM DESCRIPTION | (*) AGREED UPON UNIT PRICE | DOLLAR VOLUME OF SUBLET ITEM |
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| CONTRACT NO. _____ | | COUNTY _____ | | FIRM _____ |

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[illegible][illegible]

| | | |
|---------------------|---------------|-------------|
| CONTRACT NO. | COUNTY | FIRM |
|---------------------|---------------|-------------|

LISTING OF DBE SUBCONTRACTORS

Sheet ____ of ____

| FIRM NAME AND ADDRESS | ITEM NO. | ITEM DESCRIPTION | (*) AGREED UPON UNIT PRICE | DOLLAR VOLUME OF SUBLET ITEM |
|---------------------------|---------------------|-------------------|----------------------------------|---------------------------------|
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| CONTRACT NO. _____ | COUNTY _____ | FIRM _____ | | |

COST OF CONSTRUCTION WORK ONLY

\$ _____

(*) The Dollar Volume Shown In This Column Shall be Actual Price Agreed Upon by the Prime Contractor and the DBE Subcontractor, and These Prices Will Be Used to Determine The Percentage of the DBE Participation in this Contract.

Dollar Volume of DBE Subcontractor **\$ _____

Percentage of Total Construction Cost _____%

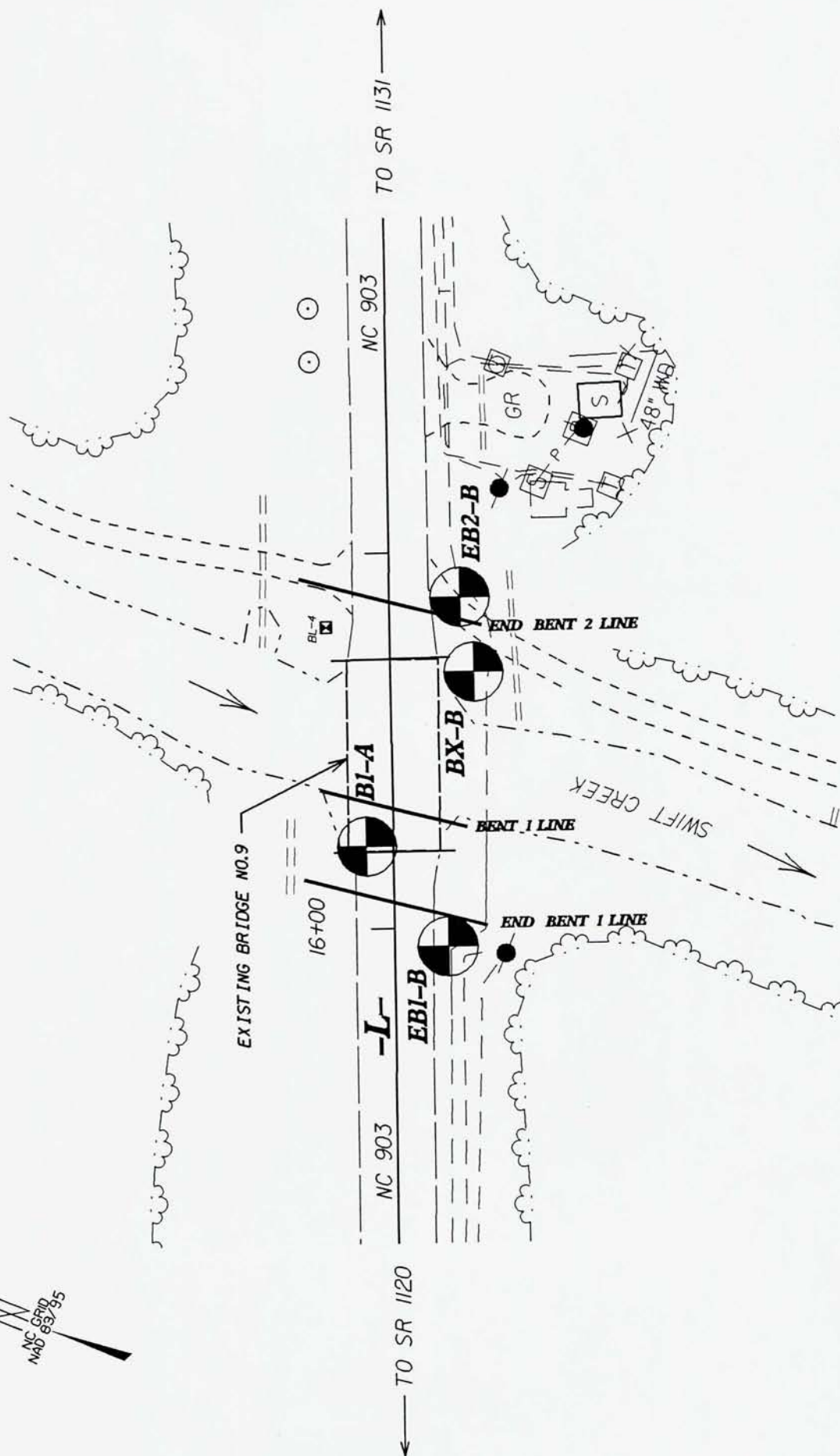
**MUST HAVE ENTRY EVEN IF FIGURE TO BE ENTERED IS ZERO.

GEOTECHNICAL ATTACHMENT 'B':

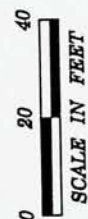
The following Geotechnical Bore Holes Sections are for information only and are not a part of this contract. These information are for investigation only and no accuracy is implied or guaranteed. No claim will be allowed as a result of the use of this information.

TEST SITE PLAN

| STATE PROJECT NO. | SHEET NO. | TOTAL SHEETS |
|-------------------|-----------|--------------|
| 33575.1J(B-4232) | 3 | 12 |

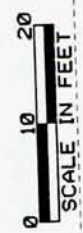
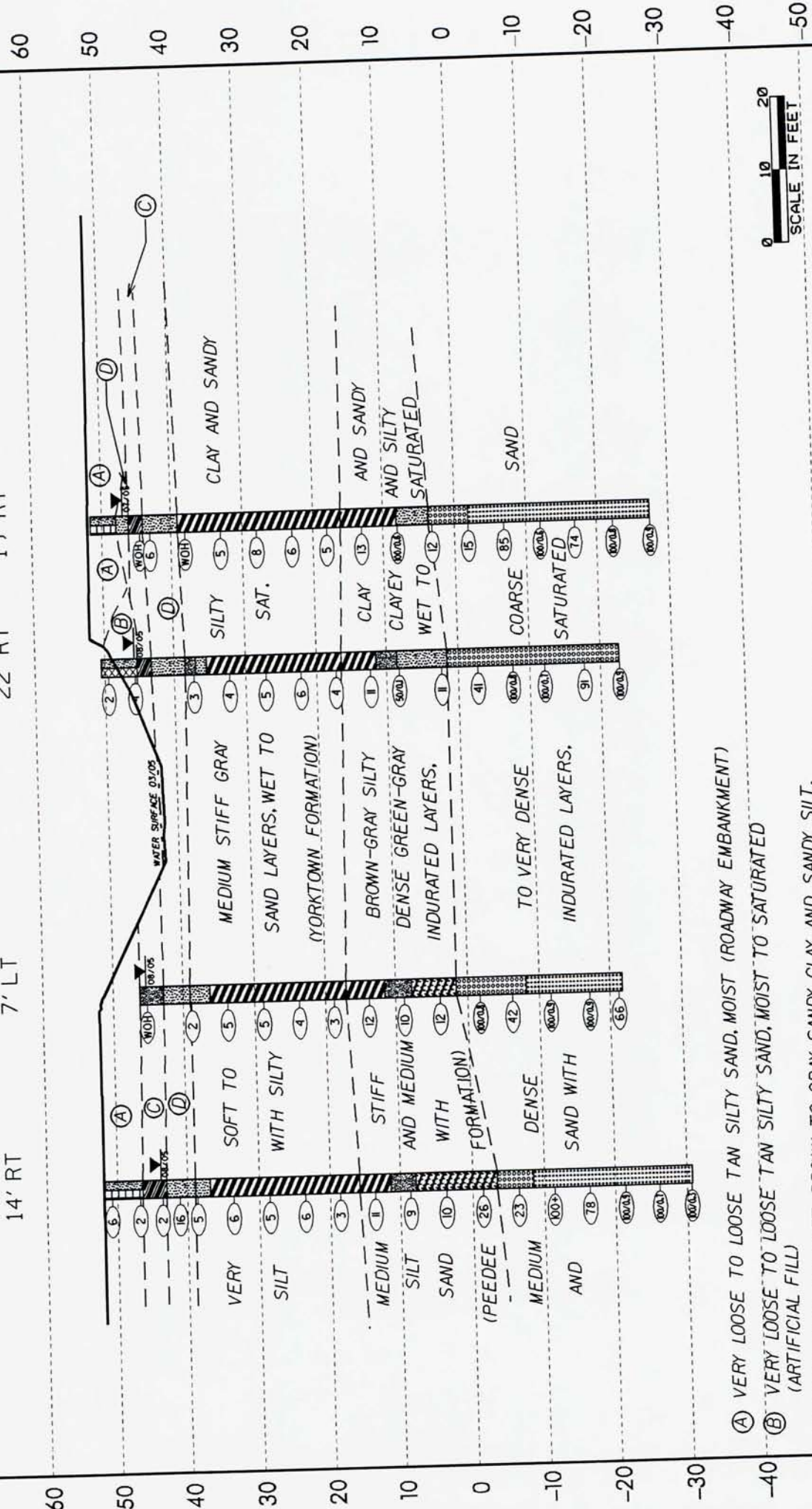


SKEW = 105°



PROFILE THROUGH BORINGS PROJECTED ALONG -L- BRIDGE NO. 9 33575.1.1(B) 32)

| | | | |
|--------|-------|--------|--------|
| EB1-B | B1-A | BX-B | EB2-B |
| 15+95 | 16+22 | 16+68 | 16+88 |
| 14' RT | 7' LT | 22' RT | 19' RT |



- A) VERY LOOSE TO LOOSE TAN SILTY SAND, MOIST (ROADWAY EMBANKMENT)
- B) VERY LOOSE TO LOOSE TAN SILTY SAND, MOIST TO SATURATED (ARTIFICIAL FILL)
- C) VERY SOFT TO SOFT BROWN TO GRAY SANDY CLAY AND SANDY SILT, WET TO SATURATED (ALLUVIUM)
- D) VERY LOOSE TO MEDIUM DENSE TAN SILTY SAND WITH THIN SILT LAYERS AND TRACE ORGANIC MATERIAL SATURATED (ALLUVIUM)

17+00

16+50

16+00

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL UNIT BORING LOG

SHEET 5 OF 12

| | | | |
|--|-------------------------|---------------------------|--|
| PROJECT NO. 33575.11 | ID. B-4232 | COUNTY PITT | GEOLOGIST J.N. JORDAN |
| SITE DESCRIPTION BRIDGE NO. 9 OVER SWIFT CREEK ON NC 903 | | | |
| BORING NO. EBI-B | BORING LOCATION I5+95 | OFFSET I4' RT | ALIGNMENT -L- |
| COLLAR ELEVATION 51.8' | NORTHING 650203.840 | EASTING 2468263.298 | GROUND WATER 0 HR. N/A 24 HR. 8.0' |
| TOTAL DEPTH 82.5' | DRILL MACHINE CME-45B | DRILL METHOD ROTARY W/MUD | HAMMER TYPE AUTOMATIC |
| START DATE 8/22/05 | COMPLETION DATE 8/23/05 | SURFACE WATER DEPTH N/A | DEPTH TO ROCK N/A |

| ELEV. | DEPTH (FT.) | BLOW COUNT | | | PEN. (FT.) | BLOWS PER FOOT | | | | | SAMPLE NUMBER | MOI. | LOG | SOIL AND ROCK DESCRIPTION |
|-------|-------------|------------|------|------|------------|----------------|----|----|----|------|---------------|------|-----|--|
| | | 0.5' | 0.5' | 0.5' | | 0 | 25 | 50 | 75 | 100 | | | | |
| 51.8 | 0.0 | 2 | 3 | 3 | 1.0 | X 6 | | | | | SS-II | | | ROADWAY EMBANKMENT TAN SILTY SAND, MOIST |
| 50.0 | 4.0 | 1 | 1 | 1 | 1.0 | X 2 | | | | | | | | |
| 45.0 | 7.2 | WOH | 1 | 1 | 1.0 | X 2 | | | | | SS-I2 | | | GRAY SANDY CLAY WITH TRACE ORGANIC MATERIAL, WET (ALLUVIUM) |
| | 9.7 | 6 | 7 | 9 | 1.0 | X 16 | | | | | | | | TAN SILTY SAND WITH THIN SILT LAYERS AND TRACE ORGANIC MATERIAL, SATURATED |
| 40.0 | 12.2 | 1 | 1 | 4 | 1.0 | X 5 | | | | | SS-I3 | | | |
| 35.0 | 17.2 | 1 | 3 | 3 | 1.0 | X 6 | | | | | SS-I4 | 94% | | |
| 30.0 | 22.2 | 2 | 2 | 3 | 1.0 | X 5 | | | | | | | | GRAY SILTY CLAY WITH SILTY SAND LAYERS, WET (YORKTOWN FORMATION) |
| 25.0 | 27.2 | 3 | 2 | 4 | 1.0 | X 6 | | | | | SS-I5 | | | |
| 20.0 | 32.2 | 1 | 1 | 2 | 1.0 | X 3 | | | | | | | | |
| 15.0 | 37.2 | 3 | 5 | 6 | 1.0 | X 11 | | | | | SS-I6 | | | |
| 10.0 | 42.2 | 4 | 4 | 5 | 1.0 | X 9 | | | | | SS-I7 | | | BROWN-GRAY SILTY CLAY, SANDY SILT AND CLAYEY SAND, WET TO SATURATED (PEEDEE FORMATION) |
| 5.0 | 47.2 | 5 | 4 | 6 | 1.0 | X 10 | | | | | SS-I8 | | | |
| 0.0 | 52.2 | 9 | 11 | 15 | 1.0 | X 26 | | | | | | | | |
| -5.0 | 57.2 | 8 | 10 | 13 | 1.0 | X 23 | | | | | SS-I9 | | | |
| -10.0 | 62.2 | 45 | 100 | | 1.0 | | | | | 100+ | SS-20 | | | COARSE SAND AND SAND WITH INDURATED LAYERS, SATURATED |
| -15.0 | 67.2 | 32 | 43 | 35 | 1.0 | | | | | X 78 | | | | |
| -20.0 | 72.2 | 18 | 23 | 77 | 0.9 | | | | | 100+ | | | | |
| -25.0 | 77.2 | 70 | 30 | | 0.7 | | | | | 100+ | SS-21 | | | |

SHEET 6 OF 12

[illegible]

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION GEOTECHNICAL UNIT BORING LOG

SHEET 7 OF 12

| | | | |
|--|-------------------------|---------------------------|-----------------------|
| PROJECT NO. 33575.1.1 | ID. B-4232 | COUNTY PITT | GEOLOGIST J.N. JORDAN |
| SITE DESCRIPTION BRIDGE NO. 9 OVER SWIFT CREEK ON NC 903 | | | GROUND WATER |
| BORING NO. BI-A | BORING LOCATION 16+22 | OFFSET 7' LT | ALIGNMENT -L- |
| COLLAR ELEVATION 46.2' | NORTHING 650229.441 | EASTING 2468289.393 | 0 HR. N/A |
| TOTAL DEPTH 67.9' | DRILL MACHINE CME-45B | DRILL METHOD ROTARY W/MUD | 24 HR. 0.9' |
| START DATE 8/25/05 | COMPLETION DATE 8/25/05 | SURFACE WATER DEPTH N/A | DEPTH TO ROCK N/A |
| | | HAMMER TYPE AUTOMATIC | |

| ELEV. | DEPTH (FT.) | BLOW COUNT | PEN. (FT.) | BLOWS PER FOOT | SAMPLE NUMBER | LOG | SOIL AND ROCK DESCRIPTION |
|-------|-------------|----------------|------------|----------------|---------------|--------|--|
| | | 0.5' 0.5' 0.5' | | 0 25 50 75 100 | | | |
| 46.2 | 0.0 | WOH | WOH | WOH | 1.0 | X 0 | SS-29 |
| 45.0 | | | | | | | 26% BROWN SANDY SILT, WET (ALLUVIUM) |
| 40.0 | 6.4 | 2 | 1 | 1 | 1.0 | X 2 | TAN SILTY SAND, SATURATED |
| 35.0 | 11.4 | 2 | 2 | 3 | 1.0 | X 5 | SS-30 |
| 30.0 | 16.4 | 2 | 2 | 3 | 1.0 | X 5 | 90% GRAY SILTY CLAY WITH SILTY SAND LAYERS, WET TO SATURATED (YORKTOWN FORMATION) |
| 25.0 | 21.4 | 2 | 2 | 2 | 1.0 | X 4 | |
| 20.0 | 26.4 | 1 | 1 | 2 | 1.0 | X 3 | SS-31 |
| 15.0 | 31.4 | 3 | 5 | 7 | 1.0 | X 12 | SS-32 |
| 10.0 | 36.4 | 3 | 4 | 6 | 1.0 | X 10 | 32% BROWN-GRAY SILTY CLAY, SANDY SILT AND GREEN-GRAY CLAYEY SAND, WET TO SATURATED (PEEDEE FORMATION) |
| 5.0 | 41.4 | 5 | 6 | 6 | 1.0 | X 12 | |
| 0.0 | 46.4 | 33 | 7 | 93 | 0.8 | 100+ X | SS-33 |
| -5.0 | 51.4 | 18 | 19 | 23 | 1.0 | X 42 | SS-34 |
| -10.0 | 56.4 | 21 | 34 | 66 | 0.9 | 100+ X | |
| -15.0 | 61.4 | 35 | 45 | 55 | 0.9 | 100+ X | SS-35 |
| -20.0 | 66.4 | 20 | 26 | 40 | 1.0 | X 66 | |
| -25.0 | | | | | | | BORING TERMINATED AT ELEVATION -21.7 FEET IN VERY DENSE SAND (PEEDEE FORMATION) |
| -30.0 | | | | | | | |

SHEET 8 OF 12

| START DATE 8/23/05 | | COMPLETION DATE 8/24/05 | | SOURCE WATER | | | | | | | | | | | |
|--------------------|-------------|-------------------------|------|--------------|------------|---|----|----|------|-----|---------------|------|-----|---------------------------|---|
| ELEV. | DEPTH (FT.) | BLOW COUNT | | | PEN. (FT.) | BLOWS PER FOOT | | | | | SAMPLE NUMBER | MOI. | LOG | SOIL AND ROCK DESCRIPTION | |
| | | 0.5' | 0.5' | 0.5' | | 0 | 25 | 50 | 75 | 100 | | | | | |
| 50.5 | | | | | | | | | | | | | | | |
| 50.0 | 0.0 | WOH | 1 | 1 | 1.0 | X 2 | | | | | | | | | ARTIFICIAL FILL, TAN SILTY SAND MOIST |
| | 3.8 | | 1 | 2 | 1.0 | X 4 | | | | | | | | | GRAY SANDY CLAY, WET (ALLUVIUM) |
| 45.0 | | | | | | | | | | | S-22 | | | | TAN SILTY SAND, SATURATED |
| 40.0 | 12.2 | WOH | 1 | 2 | 1.0 | X 3 | | | | | SS-23 | | | | |
| 35.0 | 17.2 | | 2 | 2 | 1.0 | X 4 | | | | | | | | | |
| 30.0 | 22.2 | | 2 | 3 | 1.0 | X 5 | | | | | SS-24 | 99% | | | GRAY SILTY CLAY AND SANDY SILT WITH SILTY SAND LAYERS WET TO SATURATED (YORKTOWN FORMATION) |
| 25.0 | 27.2 | | 1 | 4 | 1.0 | X 6 | | | | | | | | | |
| 20.0 | 32.2 | | 1 | 3 | 1 | X 4 | | | | | | | | | |
| 15.0 | 37.2 | | 3 | 6 | 1.0 | X 11 | | | | | SS-25 | 31% | | | BROWN SILTY CLAY, SANDY SILT, AND GREEN-GRAY CLAYEY SILTY SAND WITH INDURATED LAYERS, WET TO SATURATED (PEEDEE FORMATION) |
| 10.0 | 42.2 | | 50 | | 0.1 | | | | 100+ | | | | | | |
| 5.0 | 47.2 | | 3 | 7 | 1.0 | X 11 | | | | | SS-26 | | | | |
| 0.0 | 52.2 | | 8 | 26 | 1.0 | X 41 | | | | | SS-27 | | | | |
| -5.0 | 57.2 | | 10 | 53 | 0.8 | | | | 100+ | | | | | | |
| -10.0 | 62.2 | | 66 | | 0.7 | | | | 100+ | | | | | | |
| -15.0 | 67.2 | | 25 | 61 | 1.0 | | | | 91 | | SS-28 | | | | |
| -20.0 | 72.2 | | 46 | | 0.9 | | | | 100+ | | | | | | |
| -25.0 | | | | | | BORING TERMINATED AT ELEVATION -22.6 FEET IN VERY DENSE INDURATED SAND (PEEDEE FORMATION) | | | | | | | | | |

SHEET 9 OF 12

| PROJECT NO. 33575.1.1 | | ID. B-4232 | | COUNTY PITT | | GEOLOGIST K.B. MILLER | | | | |
|--|-------------|-------------------------|------------|---------------------------|-----|-----------------------|--------------|---------------|-----|--|
| SITE DESCRIPTION BRIDGE NO. 9 OVER SWIFT CREEK ON NC 903 | | | | | | | GROUND WATER | | | |
| BORING NO. EB2-B | | BORING LOCATION 16+88 | | OFFSET 19' RT | | ALIGNMENT -L- | | | | |
| COLLAR ELEVATION 51.6' | | NORTHING 650226.288 | | EASTING 2468351.415 | | 0 HR. N/A | | | | |
| TOTAL DEPTH 79.0' | | DRILL MACHINE CME-45C | | DRILL METHOD ROTARY W/MUD | | HAMMER TYPE AUTOMATIC | | | | |
| START DATE 7/16/03 | | COMPLETION DATE 7/16/03 | | SURFACE WATER DEPTH N/A | | DEPTH TO ROCK N/A | | | | |
| ELEV. | DEPTH (FT.) | BLOW COUNT | PEN. (FT.) | BLOWS PER FOOT | | | | SAMPLE NUMBER | LOG | SOIL AND ROCK DESCRIPTION |
| | | 0.5' 0.5' 0.5' | | 0 | 25 | 50 | 75 | 100 | | |
| 51.6 | | | | | | | | | | ROADWAY EMBANKMENT, TAN SILTY SAND, MOIST |
| 50.0 | | | | | | | | | | TAN SILTY SAND, MOIST TO SATURATED (ALLUVIUM) |
| 45.0 | 6.0 | WOH | WOH | WOH | 1.0 | | | | | GRAY SANDY CLAY, SATURATED |
| | 7.5 | 1 | 1 | 5 | 1.0 | | | | | TAN SILTY SAND, SATURATED |
| 40.0 | 12.5 | WOH | WOH | WOH | 1.0 | | | | | |
| 35.0 | 17.5 | 1 | 2 | 3 | 1.0 | | | | | |
| 30.0 | 22.5 | 2 | 3 | 5 | 1.0 | | | | | GRAY SILTY CLAY, WET TO SATURATED (YORKTOWN FORMATION) |
| 27.5 | 27.5 | 2 | 3 | 3 | 1.0 | | | | | |
| 20.0 | 32.5 | 1 | 2 | 3 | 1.0 | | | | | |
| 15.0 | 37.5 | 3 | 5 | 8 | 1.0 | | | | | BROWN-GRAY SILTY CLAY AND CLAYEY SILTY SAND WITH INDURATED LAYERS, WET TO SATURATED (PEEDEE FORMATION) |
| 10.0 | 42.5 | 3 | 5 | 95 | 0.6 | | | 100+ | | |
| 5.0 | 47.5 | 4 | 5 | 7 | 1.0 | | | | | |
| 0.0 | 52.5 | 5 | 6 | 9 | 1.0 | | | | | |
| -5.0 | 57.5 | 8 | 24 | 61 | 1.0 | | | | | GRAY COARSE SAND AND SAND WITH INDURATED LAYERS, SATURATED |
| -10.0 | 62.5 | 28 | 72 | | 0.6 | | | | | |
| -15.0 | 67.5 | 14 | 27 | 47 | 1.0 | | | | | |
| -20.0 | 72.5 | 9 | 41 | 59 | 0.8 | | | | | |
| -25.0 | 77.5 | 57 | 43 | | 0.9 | | | | | |

SHEET 10 OF 12

[illegible]

ATTACHMENT 'C'

Environmental Permit

ATTACHMENT 'D'

Project Special Provisions – Utility Construction

INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES

(2-20-07)

RG 14 C

Except where traffic is detoured, the Contractor shall complete the required work of installing, maintaining and removing the traffic control devices for lane closures and restoring traffic to a **2-lane, 2-way** traffic pattern. The Contractor shall not close or narrow a lane of traffic on **NC 903** during the following time restrictions:

DAY AND TIME RESTRICTIONS

Monday through Friday from 7:00 A.M. to 9:00 A.M.

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

The completion time for this intermediate contract time will be the time the Contractor is required to complete the removal of traffic control devices required for the lane closures according to the time restrictions stated herein and restore traffic to a **2-lane, 2-way** traffic pattern.

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

2/23/2011

Project: B-4232

County: Pitt



PROJECT SPECIAL PROVISIONS
Utility Construction

All proposed utility construction shall meet the applicable requirements of the NC Department of Transportation's Standard Specifications for Roads and Structures dated July 2006.

Revise the *2006 Standard Specifications* as follows:

Utility Owners' contact Information:

Page 15-1, Subarticle 1500-2 Cooperation with the Utility Owner, paragraph 2, add the following sentences:

All water lines on this project belong to Bell Arthur Water Corporation.

The Contractor shall provide access for the owner's representatives during construction. A preconstruction meeting shall be held with Bell Arthur Water Corporation, the Utility Contractor and the D.O.T prior to any work beginning. The Contractor shall notify the owner two weeks before commencement of any work and three weeks before service interruption.

The contact person for Bell Arthur Water Corporation is Mr. Ray Baldree, he can be contacted at 252-753-6252.

The contractor shall provide a set of as-built plans to Bell Arthur Water Corporation after all the work shown on the Utility Construction Plans is completed.

Page 15-9, Subarticle 1515-2 Materials, add the following sentence:

In addition to the water line materials specified under Section 1036, the water line can be High Density Polyethylene (HDPE) pipe conforming to AWWA C906 with an SDR of 9 and pressure rating of 200 # WP.

ATTACHMENT 'E':

FHWA SPECIAL PROVISIONS

CERTIFICATION FOR FEDERAL-AID CONTRACTS:

(3-21-90)

SP1 G85

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, *Disclosure Form to Report Lobbying*, in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by *Section 1352, Title 31, U.S. Code*. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

U.S. DEPARTMENT OF TRANSPORTATION HOTLINE:

(11-22-94)

SP1 G100

To report bid rigging activities call: **1-800-424-9071**

The U.S. Department of Transportation (DOT) operates the above toll-free *hotline* Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the *hotline* to report such activities.

The *hotline* is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

SUBMISSION OF RECORDS - FEDERAL-AID PROJECTS:

(7-17-07)

SP1 G103

The Contractor's attention is directed to the Standard Special Provision entitled *Required Contract Provisions-Federal-Aid Construction Contracts* contained elsewhere in this proposal.

This project is located on a roadway classified as a local road or rural minor collector, therefore the requirements of Paragraph IV - Payment of Predetermined Minimum Wage and Paragraph V - Statements and Payrolls are exempt from this contract.

STANDARD SPECIAL PROVISION**MINORITY AND FEMALE EMPLOYMENT REQUIREMENTS**

Z-7

NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (*EXECUTIVE NUMBER 11246*)

1. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, see as shown on the attached sheet entitled "Employment Goals for Minority and Female participation".

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in *41 CFR Part 60-4* shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in *41 CFR 60-4.3(a)*, and its effort to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project or the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the executive Order and the regulations in *41 CFR Part 60-4*. Compliance with the goals will be measured against the total work hours performed.

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

**EMPLOYMENT GOALS FOR MINORITY
AND FEMALE PARTICIPATION**

Economic Areas

Area 023 29.7%

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

Area 024 31.7%

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

Area 025 23.5%

Columbus County
Duplin County
Onslow County
Pender County

Area 026 33.5%

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

Area 027 24.7%

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

Area 028 15.5%

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

Area 029 15.7%

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

Area 0480 8.5%

Buncombe County
Madison County

Area 030 6.3%

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

SMSA Areas

Area 5720 26.6%

Currituck County

Area 9200 20.7%

Brunswick County
New Hanover County

Area 6640 22.8%

Durham County
Orange County
Wake County

Area 1300 16.2%

Alamance County

Area 3120 16.4%

Davidson County
Forsyth County
Guilford County
Randolph County
Stokes County
Yadkin County

Area 2560 24.2%
Cumberland County

Area 1520 18.3%
Gaston County
Mecklenburg County
Union County

Goals for Female

Participation in Each Trade

(Statewide) 6.9%

STANDARD SPECIAL PROVISION**REQUIRED CONTRACT PROVISIONS FEDERAL - AID CONSTRUCTION CONTRACTS**

FHWA - 1273 Electronic Version - March 10, 1994

Z-8

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Payment of Predetermined Minimum Wage
- V. Statements and Payrolls
- VI. Record of Materials, Supplies, and Labor
- VII. Subletting or Assigning the Contract
- VIII. Safety: Accident Prevention
- IX. False Statements Concerning Highway Project
- X. Implementation of Clean Air Act and Federal Water Pollution Control Act
- XI. Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion
- XII. Certification Regarding Use of Contract Funds for lobbying

ATTACHMENTS

- A. Employment Preference for Appalachian Contracts (included in Appalachian contracts only)

I. GENERAL

- 1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendent and to all work performed on the contract by piecework, station work, or by subcontract.
- 2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.
- 3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.
- 4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:
 - Section I, paragraph 2;
 - Section IV, paragraphs 1, 2, 3, 4, and 7;
 - Section V, paragraphs 1 and 2a through 2g.
- 5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.
- 6. **Selection of Labor:** During the performance of this contract, the contractor shall not:
 - a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or
 - b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

- 1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 *et seq.*) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:
 - a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.
 - b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."
- 2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.
- 3. **Dissemination of Policy:** All members of the contractor's staff who are to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual will be taken as a minimum:

- a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.
- b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
- c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.
- d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
- e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
- 4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.
 - a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.
 - b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)
 - c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.
- 5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:
 - a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
 - b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
 - c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
 - d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.
- 6. **Training and Promotion:**
 - a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.
 - b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.
 - c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
 - d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.
- 7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:
 - a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
 - b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
 - c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.
 - d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.
 - a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.
 - b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.
 - c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.
9. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.
 - a. The records kept by the contractor shall document the following:
 1. The number of minority and non-minority group members and women employed in each work classification on the project;
 2. The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;
 3. The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and
 4. The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.
 - b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

- a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.
- b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).
- c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

- a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.
 - b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.
 - c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.
2. **Classification:**

- a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.
 - b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:
 1. the work to be performed by the additional classification requested is not performed by a classification in the wage determination;
 2. the additional classification is utilized in the area by the construction industry;
 3. the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and
 4. with respect to helpers, when such a classification prevails in the area in which the work is performed.
 - c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
 - d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
 - e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.
3. **Payment of Fringe Benefits:**
- a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.
 - b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
4. **Apprentices and Trainees (Programs of U.S. DOL) and Helpers:**
- a. Apprentices:
 1. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.
 2. The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.
 3. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.
 4. In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.
 - b. Trainees:
 1. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.
 2. The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the

- classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.
3. Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.
 4. In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- c. **Helpers:**
Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.
5. **Apprentices and Trainees (Programs of the U.S. DOT):**
Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.
 6. **Withholding:**
The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.
 7. **Overtime Requirements:**
No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.
 8. **Violation:**
Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.
 9. **Withholding for Unpaid Wages and Liquidated Damages:**
The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

- (Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)
1. **Compliance with Copeland Regulations (29 CFR 3):**
The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.
 2. **Payrolls and Payroll Records:**
 - a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.
 - b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has

found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

- c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.
- d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
 1. that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;
 2. that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;
 3. that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.
- f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.
- g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES AND LABOR THIS SECTION DELETED JUNE 4, 2007.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).
 - a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.
 - b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.
2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.
3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.
4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.
2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined

- under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).
3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 *et seq.*, as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 *et seq.*, as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.
2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.
3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.
4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts - 49 CFR 29)

- a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.
- d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may

contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

- f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
- g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.
- i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions

1. The prospective primary participant 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 3-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 1b of this certification; and
 - d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

2. Instructions for Certification - Lower Tier Covered Transactions:

(Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:
 - a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
 - b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.
3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

STANDARD SPECIAL PROVISION**ATTACHMENT A – EMPLOYMENT PREFERENCE FOR APPALACHIAN CONTRACTS**

Z-9

(Applicable to Appalachian contracts only.)

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:
 - a. To the extent that qualified persons regularly residing in the area are not available.
 - b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.
 - c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph 1c shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph 4 below.
2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which he estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, he shall promptly notify the State Employment Service.
3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.
4. If, within 1 week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph 1c above.
5. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

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

(10-16-07) (Rev 7-21-09)

Z-10

Description

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

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

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

Minorities and Women

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

Assigning Training Goals

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

Training Classifications

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

Equipment Operators
Truck Drivers

Office Engineers
Estimators

Carpenters
Concrete Finishers
Pipe Layers

Iron / Reinforcing Steel Workers
Mechanics
Welders

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

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

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

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

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

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

Records and Reports

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

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

Trainee Interviews

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

Trainee Wages

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

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

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

Achieving or Failing to Meet Training Goals

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

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

Measurement and Payment

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

STANDARD SPECIAL PROVISION**GENERAL DECISION NC20100010 03/12/2010 NC10**

Z-11

Date: March 12, 2010

General Decision Number NC20100010 03/12/2010

Superseded General Decision No. NC20080010

State: North Carolina

Construction Type: HIGHWAY

COUNTIES:

| | | |
|-----------|-------------|--------------|
| Alleghany | Granville | Pasquotank |
| Anson | Greene | Pender |
| Ashe | Halifax | Perquimans |
| Avery | Harnett | Person |
| Beaufort | Haywood | Pitt |
| Bertie | Henderson | Polk |
| Bladen | Hertford | Richmond |
| Brunswick | Hoke | Robeson |
| Caldwell | Hyde | Rockingham |
| Camden | Iredell | Rutherford |
| Carteret | Jackson | Sampson |
| Caswell | Johnston | Scotland |
| Chatham | Jones | Stanly |
| Cherokee | Lee | Surry |
| Chowan | Lenoir | Swain |
| Clay | Macon | Transylvania |
| Cleveland | Madison | Tyrrell |
| Columbus | Martin | Vance |
| Craven | McDowell | Warren |
| Currituck | Mitchell | Washington |
| Dare | Montgomery | Watauga |
| Duplin | Moore | Wayne |
| Edgecombe | Nash | Wilkes |
| Gates | Northampton | Wilson |
| Graham | Pamlico | Yancey |

HIGHWAY CONSTRUCTION PROJECTS (does not include tunnels, building structures in rest area projects, railroad construction, and bascule, suspension, and spandrel arch bridges, bridges designed for commercial navigation, and bridges involving marine construction, and other major bridges).

Modification Number
0

Publication Date
03/12/2010

SUNC1990-002 02/12/1990

| | Rates | Fringes |
|--|-------|---------|
| CARPENTER | 7.71 | |
| CONCRETE FINISHER | 7.64 | |
| IRONWORKER (Reinforcing) | 9.27 | |
| LABORER | | |
| General | 7.25 | |
| Asphalt Raker | 7.25 | |
| Form Setter (Road) | 7.25 | |
| Mason (Brick, Block, Stone) | 7.76 | |
| Pipe Layer | 7.25 | |
| Power Tool Operator | 7.25 | |
| POWER EQUIPMENT OPERATORS | | |
| Asphalt Distributor | 7.25 | |
| Asphalt Paver | 7.25 | |
| Bulldozer | 7.25 | |
| Bulldozer (utility) | 7.25 | |
| Concrete Finishing Machine | 9.48 | |
| Concrete Grinder | 8.13 | |
| Crane, Backhoe, Shovel, & Dragline (Over 1 yd.) | 8.53 | |
| Crane, Backhoe, Shovel, & Dragline (1 yd. & under) | 7.25 | |
| Drill Operator | 7.65 | |
| Grade Checker | 7.25 | |
| Grease person | 7.25 | |
| Hydroseeder | 7.25 | |
| Loader | 7.25 | |
| Mechanic | 8.27 | |
| Milling Machine | 8.00 | |
| Motor Grader (Fine Grade) | 8.01 | |
| Motor Grader (Rough Grade) | 7.42 | |
| Oiler | 7.25 | |
| Piledriver | 11.00 | |
| Roller (Finish) | 7.25 | |
| Roller (Rough) | 7.25 | |
| Scraper | 7.25 | |
| Screed Asphalt | 7.25 | |
| Stone Spreader | 7.25 | |
| Stripping Machine Operator | 7.25 | |
| Subgrade Machine | 9.00 | |
| Sweeper | 7.25 | |
| Tractor (utility) | 7.25 | |
| TRUCK DRIVERS | | |
| Single Rear Axle Trucks | 7.25 | |
| Multi Rear Axle Trucks | 7.25 | |
| Heavy Duty trucks | 7.25 | |
| Welder | 9.07 | |

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

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

STANDARD SPECIAL PROVISION**GENERAL DECISION NC20100011 03/12/2010 NC11**

Z-12

Date: March 12, 2010

General Decision Number NC20100011 03/12/2010

Superseded General Decision No. NC20080011

State: North Carolina

Construction Type: HIGHWAY

COUNTIES:

| | | |
|------------|-------------|----------|
| Alamance | Durham | Orange |
| Alexander | Forsyth | Randolph |
| Buncombe | Franklin | Rowan |
| Burke | Gaston | Stokes |
| Cabarrus | Guilford | Union |
| Catawba | Lincoln | Wake |
| Cumberland | Mecklenburg | Yadkin |
| Davidson | New Hanover | |
| Davie | Onslow | |

HIGHWAY CONSTRUCTION PROJECTS (does not include tunnels, building structures in rest area projects, railroad construction, and, bascule, suspension and spandrel arch bridges, bridges designed for commercial navigation, and bridges involving marine construction, and other major bridges).

Modification Number
0

Publication Date
03/12/2010

SUNC1990-014 02/12/1990

| | Rates | Fringes |
|-----------------------------|-------|---------|
| CARPENTER | 7.63 | |
| CONCRETE FINISHER | 7.52 | |
| ELECTRICIAN | 10.26 | |
| IRONWORKERS (reinforcing) | 9.76 | |
| | | |
| LABORER | | |
| General | 7.25 | |
| Asphalt Lay Down Person | 7.25 | |
| Asphalt Raker | 7.25 | |
| Form Setter (road) | 8.57 | |
| Mason (brick, block, stone) | 7.44 | |
| Pipe Layer | 7.25 | |
| Power Tool Operator | 8.28 | |

| POWER EQUIPMENT OPERATORS | | |
|---|------|--|
| Asphalt Distributor | 7.25 | |
| Asphalt Paver | 7.47 | |
| Bulldozer | 7.33 | |
| Bulldozer (utility) | 7.25 | |
| Concrete Curb Machine | 7.25 | |
| Concrete Finishing Machine | 7.85 | |
| Concrete Paver | 7.25 | |
| Crane, Backhoe, Shovel & Dragline (over 1 yd) | 8.16 | |
| Crane, Backhoe, Shovel & Dragline(1 yd and under) | 7.25 | |
| Drill Operator | 7.34 | |
| Grade Checker | 7.25 | |
| Gradeall | 8.38 | |
| Grease Person | 7.25 | |
| Loader | 7.25 | |
| Mechanic | 8.47 | |
| Motor Grader (Fine Grade) | 8.04 | |
| Motor Grader(Rough Grade) | 7.68 | |
| Oiler | 7.25 | |
| Roller (Finisher) | 7.25 | |
| Roller (Rough) | 7.25 | |
| Scraper | 7.25 | |
| Screed Asphalt | 7.25 | |
| Stone Spreader | 7.25 | |
| Stripping Machine Operator | 7.25 | |
| Subgrade Machine | 7.25 | |
| Sweeper | 7.25 | |
| Tractor (Utility) | 7.25 | |

| TRUCK DRIVERS | | |
|---------------------------|------|--|
| Trucks – Single Rear Axle | 7.25 | |
| Trucks – Multi Rear Axle | 7.25 | |
| Trucks – Heavy Duty | 9.47 | |

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

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

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200 Constitution Avenue, N.W.
Washington, D.C. 20210

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U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

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Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

BID FORM**CONTRACT COST PROPOSAL**

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

BRIDGE REPLACEMENT WITH PRESTRESSED CORED SLABS

| LINE # | ITEM NUMBER | SEC # | DESCRIPTION | QUANTITY | UNIT COST | AMOUNT |
|-------------------|------------------------|------------------|--|-------------------|------------------|---------------|
| 1. | 0000100000-N | 800 | MOBILIZATION | L.S. | _____ | _____ |
| 2. | 0030000000-N | SP | REINFORCED BRIDGE APPR FILL, STA. 16+14.55 | L.S. | _____ | _____ |
| 3. | 0063000000-N | SP | GRADING | L.S. | _____ | _____ |
| 4. | 0196000000-E | 270 | FABRIC FOR SOIL STABILIZATION | 925 S. Y. | _____ | _____ |
| 5. | 0318000000-E | SP | FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES | 23 TONS | _____ | _____ |
| 6. | 0330000000-E | SP | GENERIC DRAINAGE ITEM FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES | 39.22 TONS | _____ | _____ |
| 7. | 0366000000-E | SP | 15" RC PIPE CULVERTS, CLASS III | 140 LIN. FT. | _____ | _____ |
| 8. | 0372000000-E | SP | 18" RC PIPE CULVERTS, CLASS III | 72 LIN. FT. | _____ | _____ |
| 9. | 1489000000-E | 610 | ASPHALT CONCRETE BASE COURSE, TYPE B25.0B | 1455 TONS | _____ | _____ |
| 10. | 1519000000-E | 610 | ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B | 540 TONS | _____ | _____ |
| 11. | 1560000000-E | 620 | ASPHALT BINDER FOR PLANT MIX, TYPE PG64-22 | 95 TONS | _____ | _____ |
| 12. | 2286000000-N | 840 | MASONRY DRAINAGE STRUCTURES | 2 EACH | _____ | _____ |
| 13. | 2367000000-N | 840 | FRAME WITH TWO GRATES, STD. 840.29 | 2 EACH | _____ | _____ |
| 14. | 2696000000-E | SP | 2'-9" PRECAST CONCRETE BARRIER RAIL | 160.0 LIN. FT. | _____ | _____ |
| 15. | 3030000000-E | 862 | STEEL BM GUARDRAIL | 462.5 LIN. FT. | _____ | _____ |

| LINE # | ITEM NUMBER | SEC # | DESCRIPTION | QUANTITY | UNIT COST | AMOUNT |
|-----------|----------------|----------|---|------------------|-----------|--------|
| 16. | 3045000000-E | 862 | STEEL BM GUARDRAIL, SHOP CURVED | 25 LIN. FT. | _____ | _____ |
| 17. | 3270000000-N | SP | GR ANCHOR UNITS, TYPE 350 | 4 EACH | _____ | _____ |
| 18. | 3317000000-N | 862 | GR ANCHOR UNITS, TYPE B-77 | 2 EACH | _____ | _____ |
| 19. | 3656000000-E | 876 | FILTER FABRIC FOR DRAINAGE | 347 S. Y. | _____ | _____ |
| 20. | 5325600000-E | 1510 | 6" WATER LINE | 845 LIN. FT. | _____ | _____ |
| 21. | 5540000000-E | 1515 | 6" VALVE | 2 EACH | _____ | _____ |
| 22. | 5798000000-E | 1530 | ABANDON 4" UTILITY PIPE | 834 LIN. FT. | _____ | _____ |
| 23. | 5871400000-E | 1550 | TRENCHLESS INSTALLATION OF 6" IN SOIL | 238 LIN. FT. | _____ | _____ |
| 24. | 5871410000-E | 1550 | TRENCHLESS INSTALLATION OF 6" NOT IN SOIL | 237 LIN. FT. | _____ | _____ |
| 25. | 6000000000-E | 1605 | TEMPORARY SILT FENCE | 2600 LIN. FT. | _____ | _____ |
| 26. | 6006000000-E | 1610 | STONE FOR EROSION CONTROL, CLASS A | 170 TONS | _____ | _____ |
| 27. | 6009000000-E | 1610 | STONE FOR EROSION CONTROL, CLASS B | 75 TONS | _____ | _____ |
| 28. | 6012000000-E | 1610 | SEDIMENT CONTROL STONE | 20 TONS | _____ | _____ |
| 29. | 6024000000-E | 1622 | TEMPORARY SLOPE DRAINS | 200 LIN. FT. | _____ | _____ |
| 30. | 6027000000-N | 1622 | INLET PROTECTION AT TEMPORARY SLOPE DRAINS | 4 EACH | _____ | _____ |
| 31. | 6029000000-E | SP | SAFETY FENCE | 200 LIN. FT. | _____ | _____ |
| 32. | 6030000000-E | 1630 | SILT EXCAVATION | 110 C.Y. | _____ | _____ |
| 33. | 6036000000-E | 1631 | MATTING FOR EROSION CONTROL | 200 S.Y. | _____ | _____ |

| LINE # | ITEM NUMBER | SEC # | DESCRIPTION | QUANTITY | UNIT COST | AMOUNT |
|-----------|----------------|----------|--|---------------------|-----------|--------|
| 34. | 6042000000-E | 1632 | ¼" HARDWARE CLOTH | 50 LIN. FT. | _____ | _____ |
| 35. | 6123000000-E | 1670 | REFORESTATION | 0.1 ACR. | _____ | _____ |
| 36. | 6135000000-E | SP | GENERIC EROSION CONTROL ITEM (SEEDING AND MULCHING) | 0.5 ACR. | _____ | _____ |
| 37. | 8035000000-N | 402 | REMOVAL EXISTING STRUCTURE AT STA. 16+14.55 | L.S. | _____ | _____ |
| 38. | 8121000000-N | 412 | UNCLASSIFIED STRUCTURE EXCAVATION AT STA. 16+14.55 | L.S. | _____ | _____ |
| 39. | 8182000000-E | 420 | CLASS A CONCRETE (BRIDGE) | 47.7 C.Y. | _____ | _____ |
| 40. | 8210000000-N | 422 | BRIDGE APPROACH SLAB, STA. 16+14.55 | L.S. | _____ | _____ |
| 41. | 8217000000-E | 425 | REINFORCING STEEL (BRIDGE) | 7,546 LB. | _____ | _____ |
| 42. | 8364000000-E | SP | HP 12x53 STEEL PILES | 1465 LIN. FT. | _____ | _____ |
| 43. | 8594000000-E | 876 | RIP RAP CLASS B | 2 TONS | _____ | _____ |
| 44. | 8608000000-E | 876 | RIP RAP CLASS II (2'-0" THICK) | 225 TONS | _____ | _____ |
| 45. | 8622000000-E | 876 | FILTER FABRIC FOR DRAINAGE | 200 S.Y. | _____ | _____ |
| 46. | 8657000000-N | 430 | ELASTOMERIC BEARINGS | L.S. | _____ | _____ |
| 47. | 8762000000-E | 430 | 3'-0"X1'-9" PRESTRESSED CONCRETE CORED SLABS | 1,200.0 LIN. FT. | _____ | _____ |
| | | | | 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 PROPOSALAGENCY: N. C. DEPARTMENT OF TRANSPORTATION CITY AND STATE:
RALEIGH, NORTH CAROLINABY:_____ TITLE: STATE BRIDGE MANAGEMENT ENGINEER
(SIGNATURE)

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 than 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.

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

Rev. 7-12-10

CORPORATION

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

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

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

SIGNATURE OF CONTRACTOR

 Full name of Corporation

 Address as prequalified

Attest

 Secretary/Assistant Secretary
Select appropriate title

By

 President/Vice President/Assistant Vice President
Select appropriate title

 Print or type Signer's name

 Print or type Signer's name

CORPORATE SEAL

AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the

_____ day of _____ 20__.

NOTARY SEAL

 Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

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

Rev. 7-12-10

PARTNERSHIP

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

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

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

SIGNATURE OF CONTRACTOR

 Full Name of Partnership

 Address as Prequalified

By _____

 Signature of Witness

 Signature of Partner

 Print or type Signer's name

 Print or type Signer's name

AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the

NOTARY SEAL

_____ day of _____ 20__.

 Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

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

Rev. 7-12-10

LIMITED LIABILITY COMPANY

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

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

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

SIGNATURE OF CONTRACTOR

 Full Name of Firm

 Address as Prequalified

 Signature of Manager

 Signature of Witness

 Individually

 Print or type Signer's name

 Print or type Signer's Name

AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the

NOTARY SEAL

____ day of _____ 20__.

 Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

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

Rev. 7-12-10

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

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

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

SIGNATURE OF CONTRACTOR

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

| | |
|-----|--|
| (1) | Name of Joint Venture |
| (2) | Name of Contractor |
| | Address as prequalified |
| | <div style="width: 45%; border-bottom: 1px solid black; text-align: center;">Signature of Witness or Attest</div> <div style="width: 10%; text-align: center;">By</div> <div style="width: 45%; border-bottom: 1px solid black; text-align: center;">Signature of Contractor</div> |
| | <div style="width: 45%; border-bottom: 1px solid black; text-align: center;">Print or type Signer's name</div> <div style="width: 10%;"></div> <div style="width: 45%; border-bottom: 1px solid black; text-align: center;">Print or type Signer's name</div> |
| | <div style="width: 45%;"><i>If Corporation, affix Corporate Seal</i></div> <div style="width: 10%; text-align: center;">and</div> <div style="width: 45%;"></div> |
| (3) | Name of Contractor |
| | Address as prequalified |
| | <div style="width: 45%; border-bottom: 1px solid black; text-align: center;">Signature of Witness or Attest</div> <div style="width: 10%; text-align: center;">By</div> <div style="width: 45%; border-bottom: 1px solid black; text-align: center;">Signature of Contractor</div> |
| | <div style="width: 45%; border-bottom: 1px solid black; text-align: center;">Print or type Signer's name</div> <div style="width: 10%;"></div> <div style="width: 45%; border-bottom: 1px solid black; text-align: center;">Print or type Signer's name</div> |
| | <div style="width: 45%;"><i>If Corporation, affix Corporate Seal</i></div> <div style="width: 10%; text-align: center;">and</div> <div style="width: 45%;"></div> |
| (4) | Name of Contractor (for 3 Joint Venture only) |
| | Address as prequalified |
| | <div style="width: 45%; border-bottom: 1px solid black; text-align: center;">Signature of Witness or Attest</div> <div style="width: 10%; text-align: center;">By</div> <div style="width: 45%; border-bottom: 1px solid black; text-align: center;">Signature of Contractor</div> |
| | <div style="width: 45%; border-bottom: 1px solid black; text-align: center;">Print or type Signer's name</div> <div style="width: 10%;"></div> <div style="width: 45%; border-bottom: 1px solid black; text-align: center;">Print or type Signer's name</div> |

If Corporation, affix Corporate Seal

NOTARY SEAL

Affidavit must be notarized for Line (2)

Subscribed and sworn to before me this

_____ day of _____ 20____

Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

NOTARY SEAL

Affidavit must be notarized for Line (3)

Subscribed and sworn to before me this

_____ day of _____ 20____

Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

NOTARY SEAL

Affidavit must be notarized for Line (4)

Subscribed and sworn to before me this

_____ day of _____ 20____

Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

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

Rev. 7-12-10

INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME

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

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

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

SIGNATURE OF CONTRACTOR

Name of Contractor

Individual name

Trading and doing business as

Full name of Firm

Address as Prequalified

Signature of Witness

Signature of Contractor, Individually

Print or type Signer's name

Print or type Signer's name

AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the

NOTARY SEAL

____ day of _____ 20__.

Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

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

Rev. 7-12-10

INDIVIDUAL DOING BUSINESS IN HIS OWN NAME

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

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

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

SIGNATURE OF CONTRACTOR

Name of Contractor _____

Print or type Individual name

 Address as Prequalified

 Signature of Contractor, Individually

 Print or type Signer's Name

 Signature of Witness

 Print or type Signer's name

AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the

NOTARY SEAL

____ day of _____ 20__.

 Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

DEBARMENT CERTIFICATION

Conditions for certification:

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

DEBARMENT CERTIFICATION

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

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

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

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

☐

Check here if an explanation is attached to this Certification.