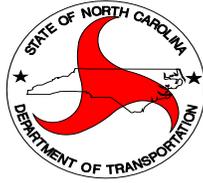


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION



NCDOT DIVISION 12

CONTRACT PROPOSAL

WBS ELEMENT: 45358.3.9 DL00022 BD-5112I COUNTY: CATAWBA
LOCATION: Bridge No. 229 over Tributary to Hagan Fork Creek on SR 1809 (Love Rd)
DESCRIPTION: Grading, Paving, Drainage, Structure, and Pavement Markings

BID OPENING: **10:00 A.M. TUESDAY MAY 22, 2012 at the DIVISION 12 OFFICE**

NAME OF BIDDER

ADDRESS OF BIDDER

RETURN BIDS TO: *NCDOT
M.L. Holder, PE, Division Engineer
P. O. BOX 47
SHELBY, NC 28151-0047*

NOTICE:

ALL BIDDERS SHALL COMPLY WITH ALL APPLICABLE LAWS REGULATING THE PRACTICE OF GENERAL CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA WHICH REQUIRES THE BIDDER TO BE LICENSED BY THE N.C. LICENSING BOARD FOR CONTRACTORS WHEN BIDDING ON ANY NON-FEDERAL AID PROJECT WHERE THE BID IS \$30,000 OR MORE, EXCEPT FOR CERTAIN SPECIALTY WORK AS DETERMINED BY THE LICENSING BOARD OR SBE PROJECT.

5% Bid Bond Required

INSTRUCTIONS TO BIDDERS

PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE PREPARING AND SUBMITTING YOUR BID.

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

1. The bid sheet furnished by NCDOT with the proposal shall be used and shall not be altered in any manner. **DO NOT SEPARATE THE BID SHEET FROM THE PROPOSAL!** This includes proposals downloaded from the website.
2. All entries on the bid sheet, including signatures, shall be written in ink.
3. The Bidder shall submit a unit price for every item on the bid form. The unit prices for the various contract items shall be written in figures.
4. An amount bid shall be entered on the bid sheet for every item. The amount bid for each item shall be determined by multiplying each unit bid by the quantity for that item, and shall be written in figures in the "Amount Bid" column of the sheet.
5. The total amount bid shall be written in figures in the proper place on the bid sheet. The total amount shall be determined by adding the amounts bid for each item.
6. Changes in any entry shall be made by marking through the entry in ink and making the correct entry adjacent thereto in ink. A representative of the Bidder shall initial the change in ink.
7. The bid shall be properly executed. All bids shall show the following information:
 - a. Name of individual, firm, corporation, partnership, or joint venture submitting bid.
 - b. Name and signature of individual or representative submitting bid and position or title.
 - c. Name, signature, and position or title of witness.
 - d. Federal Identification Number (or Social Security Number of Individual)
 - e. Contractor's License Number (if Applicable)
8. Bids submitted by corporations shall bear the seal of the corporation.
9. The bid shall not contain any unauthorized additions, deletions, or conditional bids.
10. The bidder shall not add any provision reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
11. **THE PROPOSAL WITH THE BID SHEET STILL ATTACHED SHALL BE PLACED IN A SEALED ENVELOPE AND SHALL HAVE BEEN DELIVERED TO AND RECEIVED IN THE DIVISION ENGINEER'S OFFICE AT 1710 E. MARION STREET SHELBY, N.C. 28152 BY 10:00 A.M. TUESDAY MAY 22, 2012.**
12. The sealed bid must display the following statement on the front of the sealed envelope:

QUOTATION FOR WBS 45358.3.9 (BD-5112I) IN CATAWBA COUNTY TO BE OPENED AT 10:00 A.M. TUESDAY MAY 22, 2012.

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

**Mr. M.L. Holder, PE
P.O. Box 47
Shelby, NC 28151-0047**

AWARD OF CONTRACT

The award of the contract, if it be awarded, will be made to the lowest responsible Bidder in accordance with Section 102 (*excluding 102-2 and 102-11*) of the Standard Specifications for Roads and Structures 2006. The lowest responsible will be notified that his bid has been accepted and that he has been awarded the contract. NCDOT reserves the right to reject all bids.

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Geotechnical Attachments

DBE-IS Form

Listing of DBE Subcontractors

Non-Collusion Affidavit, Debarment Certification and Gift Ban Certification

Letter of Intent to Perform as a Subcontractor

Division Contract Bid Form

Bid Bond

PRE-BID PROVISIONS

PRE-QUALIFYING TO BID

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
Acting State Contractual Services Engineer
Kalliopi S Piersma
Tel: (919) 733-7174
Fax: (919) 715-7378

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

PUBLIC ADVERTISEMENT

There will NOT be a Pre-Bid Conference for this project. Advertisement for this project is posted on our web site with the plans and proposal at:

<http://www.ncdot.org/doh/operations/division12/bids/> .

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 \$500,000.)

- (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.

PROJECT SPECIAL PROVISIONS

GENERAL

This contract is for grading, paving, drainage, structure replacement, and pavement markings on SR 1809 (Love Road) in Catawba County. All work and materials shall be in accordance with the provisions of the General Guidelines of this contract, the Project Special Provisions, the North Carolina Department of Transportation Standard Specifications for Roads and Structures 2006, the North Carolina Department of Transportation Roadway Standard Drawings 2006, and the current edition of the Manual of Uniform Traffic Control Devices (MUTCD).

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

LOCATION AND DESCRIPTION

The existing bridge consists of a single span of a total length = 26'-0"; 1" asphalt wearing surface; on a 4"x8" timber floor; on steel I-beams; on timber caps, posts and sills, concrete encased; with a clear roadway width of 17'-7"; is located on SR 1809 across a Tributary to Hagan Fork Creek, 0.40 miles east of junction with SR 1807. This bridge shall be replaced by a two-span cored slab bridge with span lengths of 1 @ 30'-0" and 1 @ 60'-0"; on a 120 degree skew angle and 24'-10" clear roadway width. (SEE BRIDGE LOCATION MAP)

PRECONSTRUCTION CONFERENCE

The Contractor shall contact Mr. Steve Rackley, P.E., NCDOT Division Construction Engineer at (704) 480-9034 to arrange a Preconstruction conference. The project superintendent is required to attend the Preconstruction conference.

AUTHORITY OF THE ENGINEER

The Engineer for this project shall be the Division Engineer, Division 12, Division of Highways, North Carolina Department of Transportation, acting directly or through his duly authorized representatives.

The Engineer will decide all questions which may arise as to the quality and acceptability of work performed and as to the rate of progress of the work; all questions which may arise as to the interpretation of the contract; and all questions as to the acceptable fulfillment of the contract on the part of the Contractor. His decision shall be final and he

shall have executive authority to enforce and make effective such decisions and orders as the Contractor fails to carry out promptly.

CONTRACTOR SUPERVISION

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

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

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.

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.

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.

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 caused by the negligence of the Contractor, its employees or agents in carrying out this contract.

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.

MAINTENANCE OF THE PROJECT

(03-30-09)

The Contractor's attention is directed to *Article 104-10* of the Standard Specifications For Roads and Structures, July 2006 Edition.

REMOVAL OF EXISTING STRUCTURE

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

MATERIALS AND TESTING

The Engineer reserves the right to perform all sampling and testing in accordance with Section 106 of the Standard Specifications and the Department's "Materials and Test Manual."

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

Delivery tickets for all asphalt material shall be furnished in accordance with Section 106-7 of the Standard Specifications and shall include the following information:

NCDOT Work Order Number

Date
Time issued
Type of Material
Gross weight
Tare Weight
Net weight of material
Plant Location
Truck Number
Contractor's name
Public weighmaster's stamp or number
Public weighmaster's signature or initials in ink
Job mix formula number

CONTRACT PAYMENT AND PERFORMANCE BOND

A performance bond in the amount of one hundred percent (100%) of the contract amount, conditioned upon the faithful performance of the contract in accordance with specifications and conditions of the contract is required for Construction contracts of \$500,000 or more. Such bond shall be solely for the protection of the North Carolina Department of Transportation and the State of North Carolina.

A payment bond in the amount of one hundred percent (100%) of the contract amount, conditioned upon the prompt payment for all labor or materials for which the Contractor, or his subcontractors, are liable is required for Construction contracts greater than \$500,000. The payment bond shall be solely for the protection of persons or firms furnishing materials or performing labor for this contract for which the Contractor is liable.

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

SUBLETTING OF CONTRACT

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

DEFAULT OF CONTRACT

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

EXTENSION OF CONTRACT TIME

Failure on the part of the Contractor to furnish bonds or certifications, or to satisfy preliminary requirements necessary to issue the purchase order will not constitute grounds for extension of the contract time. If the Contractor has fulfilled all preliminary requirements for the issuance of a purchase order, and the purchase order authorization is not available by the date of availability, the Contractor shall be granted an extension equal to the number of calendar days the purchase order authorization is delayed after the date of availability.

BIDS

In accordance with GS 136-28.1(b), if the total bid amount of the contract exceeds \$1,200,000, the bid will not be considered for award.

INSPECTION

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

SAFETY AND ACCIDENT PROTECTION

In accordance with Article 107-22 of the Standard Specifications, the Contractor shall comply with all applicable Federal, State, and local laws, ordinances, and regulations governing safety, health, and sanitation, and shall provide all safeguards, safety devices, and protective equipment, and shall take any other needed actions, on his own responsibility that are reasonably necessary to protect the life and health of employees on the job and the safety of the public, and to protect property in connection with the performance of the work covered by the contract. All Contractors' personnel, all subcontractors and their personnel, and any material suppliers and their personnel shall wear a reflective vest or outer garment conforming to the requirements of MUTCD at all times while on the project.

UTILITY CONFLICTS

It shall be the responsibility of the Contractor to contact all affected utility owners and determine the precise locations of all utilities prior to beginning construction. Utility owners shall be contacted a minimum of 48 hours prior to the commencement of operations. Special care shall be used in working around or near existing utilities, protecting them when necessary to provide uninterrupted service. In the event that any

utility service is interrupted, the Contractor shall notify the utility owner immediately and shall cooperate with the owner, or his representative, in the restoration of service in the shortest time possible. Existing fire hydrants shall be kept accessible to fire departments at all times.

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

NOTIFICATION OF OPERATIONS

The Contractor shall notify the Engineer one week in advance of beginning work on this project. The Contractor shall give the Engineer sufficient notice of all operations for any sampling, inspection or acceptance testing required.

PROSECUTION AND PROGRESS

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

WORKERS' COMPENSATION INSURANCE

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

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

The contractor further agrees to indemnify the Department of Transportation for any damages to the roadway, highway signs, highway equipment and other property owned or

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

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

PROJECT GENERAL PROVISIONS

CONTRACT TIME AND LIQUIDATED DAMAGES:

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

SP1G10

The date of availability for this contract is **June 5, 2012.**

The completion date for this contract is **December 21, 2012.**

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

The liquidated damages for this contract are **Five Hundred Dollars (\$500.00)** per calendar day.

PROSECUTION OF WORK:

(7-1-95)

RG 15

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

In the event that the Contractor's operations are suspended in violation of the above provisions, the sum of **\$500.00** will be charged the Contractor for each and every calendar day that such suspension takes place. The said amount is hereby agreed upon as liquidated damages due to extra engineering and maintenance costs and due to increased public hazard resulting from a suspension of the work. Liquidated damages chargeable due to suspension of the work will be additional to any liquidated damages that may become chargeable due to failure to complete the work on time.

MAJOR CONTRACT ITEMS:

(2-19-02)

RG 28

The following listed items are the major contract items for this contract (See Articles 101 and 104-5 of the *2006 Standard Specifications*):

Line #	Description
69	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS
70	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS

SPECIALTY ITEMS:

(7-1-95)

RG 37

Items listed below will be the specialty items for this contract (See Article 108-6 of the 2006 Standard Specifications).

Line #	Description
22 thru 25	Guardrail
30 thru 52	Erosion Control
54 thru 57	Drilled Piers

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.

DISADVANTAGED BUSINESS ENTERPRISE (DIVISIONS AND MUNICIPALITIES):

(10-16-07)(Rev. 11-15-11)

SP1 G62

Description

The purpose of this Special Provision is to carry out the U.S. Department of Transportation’s policy of ensuring nondiscrimination in the award and administration of contracts financed in whole or in part with Federal funds. This provision is guided by 49 CFR Part 26.

Definitions

Additional DBE Subcontractors - Any DBE submitted at the time of bid that will not be used to meet the DBE goal. No submittal of a Letter of Intent is required.

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

Contract Goal Requirement - The approved DBE participation at time of award, but not greater than the advertised contract goal.

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

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

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

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

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

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

North Carolina Unified Certification Program (NCUCP) - A program that provides comprehensive services and information to applicants for DBE 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.

United States Department of Transportation (USDOT) - Federal agency responsible for issuing regulations (49 CFR Part 26) and official guidance for the DBE program.

Forms and Websites Referenced in this Provision

DBE Payment Tracking System - On-line system in which the Contractor enters the payments made to DBE subcontractors who have performed work on the project.
<https://apps.dot.state.nc.us/Vendor/PaymentTracking/>

DBE-IS *Subcontractor Payment Information* - Form for reporting the payments made to all DBE firms working on the project. This form is for paper bid projects only.
<http://www.ncdot.org/doh/forms/files/DBE-IS.xls>

RF-1 *DBE Replacement Request Form* - Form for replacing a committed DBE.
https://apps.dot.state.nc.us/_includes/download/external.html?pdf=http%3A//www.ncdot.gov/doh/forms/files/RF-1.pdf

SAF *Subcontract Approval Form* - Form required for approval to sublet the contract.
http://www.ncdot.org/doh/operations/dp_chief_eng/constructionunit/saf.xls

JC-1 *Joint Check Notification Form* - Form and procedures for joint check notification. The form acts as a written joint check agreement among the parties providing full and prompt disclosure of the expected use of joint checks.
https://apps.dot.state.nc.us/_includes/download/external.html?pdf=http%3A//www.ncdot.gov/doh/forms/files/JC-1.pdf

Letter of Intent - Form signed by the Contractor and the DBE subcontractor, manufacturer or regular dealer that affirms that a portion of said contract is going to be performed by the signed DBE for the amount listed at the time of bid.
<http://www.ncdot.org/doh/preconstruct/ps/contracts/letterofintent.pdf>

Listing of DBE Subcontractors Form - Form for entering DBE subcontractors on a project that will meet this DBE goal. This form is for paper bids only.
<http://www.ncdot.gov/doh/preconstruct/ps/word/MISC2.doc>

Subcontractor Quote Comparison Sheet - Spreadsheet for showing all subcontractor quotes in the work areas where DBEs quoted on the project. This sheet is submitted with good faith effort packages.
http://www.ncdot.gov/business/ocs/goodfaith/excel/Ex_Subcontractor_Quote_Comparison.xls

DBE Goal

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

Disadvantaged Business Enterprises **5 %**

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

Directory of Transportation Firms (Directory)

Real-time information is available about firms doing business with the Department and firms that are certified through NCUCP in the Directory of Transportation Firms. Only firms identified in the Directory as DBE certified shall be used to meet the DBE goal. The Directory can be found at the following link. <https://partner.ncdot.gov/VendorDirectory/default.html>

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

Listing of DBE Subcontractors

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

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 rejected.

(A) *If the DBE goal is more than zero,*

- (1) Bidders, at the time the bid proposal is submitted, shall submit a listing of DBE participation, including the names and addresses on *Listing of DBE Subcontractors* contained elsewhere in the contract documents in order for the bid to be considered responsive. Bidders shall indicate the total dollar value of the DBE participation for the contract.
- (2) If bidders have no D BE participation, they shall indicate this on t he *Listing of DBE Subcontractors* by entering the word "None" or the number "0." This form shall be completed in its entirety.
- (3) The bidder shall be responsible for ensuring that the DBE is certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the bid-letting, that DBE's participation will not count towards achieving the DBE goal.

(B) *If the DBE goal is zero,* bidders, at the time the bid proposal is submitted, shall enter the word "None"; or the number "0"; or if there is participation, add the value on the *Listing of DBE Subcontractors* contained elsewhere in the contract documents.

DBE Prime Contractor

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

For example, if the DBE goal is 45% and the DBE bidder will only perform 40% of the contract work, the prime will list itself at 40%, and the additional 5% shall be obtained through additional DBE participation with DBE subcontractors or documented through a good faith effort.

DBE prime contractors shall also follow Sections A or B listed under *Listing of DBE Subcontractor* just as a non-DBE bidder would.

Written Documentation – Letter of Intent

The bidder shall submit written documentation for each DBE that will be used to meet the DBE goal of the contract, indicating the bidder's commitment to use the DBE in the contract. This documentation shall be submitted on the Department's form titled *Letter of Intent*.

The documentation shall be received in the office of the Engineer no later than 12:00 noon of the sixth calendar day following opening of bids, unless the sixth day falls on Saturday, Sunday or an official state holiday. In that situation, it is due in the office of the Engineer no later than 12:00 noon on the next official state business day.

If the bidder fails to submit the Letter of Intent from each committed DBE to be used toward the DBE goal, or if the form is incomplete (i.e. both signatures are not present), the DBE participation will not count toward meeting the DBE goal. If the lack of this participation drops the commitment below the DBE goal, the Contractor shall submit evidence of good faith efforts, completed in its entirety, to the Engineer no later than 12:00 noon on the eighth calendar day following opening of bids, unless the eighth day falls on Saturday, Sunday or an official state holiday. In that situation, it is due in the office of the Engineer no later than 12:00 noon on the next official state business day.

Submission of Good Faith Effort

If the bidder fails to meet or exceed the DBE goal the apparent lowest responsive bidder shall submit to the Department documentation of adequate good faith efforts made to reach the DBE goal.

One complete set and 9 copies of this information shall be received in the office of the Engineer no later than 12:00 noon of the sixth calendar day following opening of bids, unless the sixth day falls on Saturday, Sunday or an official state holiday. In that

situation, it is due in the office of the Engineer no later than 12:00 noon on the next official state business day.

Note: Where the information submitted includes repetitious solicitation letters, it will be acceptable to submit a representative letter along with a distribution list of the firms that were solicited. Documentation of DBE quotations shall be a part of the good faith effort submittal. This documentation may include written subcontractor quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

Consideration of Good Faith Effort for Projects with DBE Goals More Than Zero

Adequate good faith efforts mean that the bidder took all necessary and reasonable steps to achieve the goal which, by their scope, intensity, and appropriateness, could reasonably be expected to obtain sufficient DBE participation. Adequate good faith efforts also mean that the bidder actively and aggressively sought DBE participation. Mere *pro forma* efforts are not considered good faith efforts.

The Department will consider the quality, quantity, and intensity of the different kinds of efforts a bidder has made. Listed below are examples of the types of actions a bidder will take in making a good faith effort to meet the goal and are not intended to be exclusive or exhaustive, nor is it intended to be a mandatory checklist.

- (A) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices through the use of the NCDOT Directory of Transportation Firms) the interest of all certified DBEs who have the capability to perform the work of the contract. The bidder must solicit this interest within at least 10 days prior to bid opening to allow the DBEs to respond to the solicitation. Solicitation shall provide the opportunity to DBEs within the Division and surrounding Divisions where the project is located. The bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.
- (B) Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.
- (C) Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (D) (1) Negotiating in good faith with interested DBEs. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected

for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.

- (2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidding contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.
- (E) Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associates and political or social affiliations (for example, union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
- (F) Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or bidder.
- (G) Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- (H) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; Federal, State, and local minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs. Contact within 7 days from the bid opening NCDOT's Business Development Manager in the Business Opportunity and Work Force Development Unit to give notification of the bidder's inability to get DBE quotes.
- (I) Any other evidence that the bidder submits which shows that the bidder has made reasonable good faith efforts to meet the DBE goal.

In addition, the Department may take into account the following:

- (1) Whether the bidder's documentation reflects a clear and realistic plan for achieving the DBE goal.
- (2) The bidders' past performance in meeting the DBE goals.
- (3) The performance of other bidders in meeting the DBE goal. For example, when the apparent successful bidder fails to meet the DBE goal, but others meet it, you may reasonably raise the question of whether, with additional

reasonable efforts the apparent successful bidder could have met the goal. If the apparent successful bidder fails to meet the DBE goal, but meets or exceeds the average DBE participation obtained by other bidders, the Department may view this, in conjunction with other factors, as evidence of the apparent successful bidder having made a good faith effort.

If the Department does not award the contract to the apparent lowest responsive bidder, the Department reserves the right to award the contract to the next lowest responsive bidder that can satisfy to the Department that the DBE goal can be met or that an adequate good faith effort has been made to meet the DBE goal.

Non-Good Faith Appeal

The Engineer will notify the contractor verbally and in writing of non-good faith. A contractor may appeal a determination of non-good faith made by the Goal Compliance Committee. If a contractor wishes to appeal the determination made by the Committee, they shall provide written notification to the Engineer. The appeal shall be made within 2 business days of notification of the determination of non-good faith.

Counting DBE Participation Toward Meeting DBE Goal

(A) Participation

The total dollar value of the participation by a committed DBE will be counted toward the contract goal requirement. The total dollar value of participation by a committed 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) Joint Checks

Prior notification of joint check use shall be required when counting DBE participation for services or purchases that involves the use of a joint check. Notification shall be through submission of Form JC-1 (*Joint Check Notification Form*) and the use of joint checks shall be in accordance with the Department's Joint Check Procedures.

(C) Subcontracts (Non-Trucking)

A DBE may enter into subcontracts. Work that a DBE subcontracts to another DBE firm may be counted toward the contract goal requirement. Work that a DBE subcontracts to a non-DBE firm does not count toward the contract goal 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, it shall be presumed that the DBE is not performing a commercially useful function. The DBE may present evidence to rebut this presumption to the Department. The Department's decision on the rebuttal of this presumption is subject to review by the Federal Highway Administration but is not administratively appealable to USDOT.

(D) Joint Venture

When a DBE performs as a participant in a joint venture, the Contractor may count toward its contract goal requirement a portion of the total value of participation with the 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.

(E) Suppliers

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 a DBE regular dealer and 100 percent of such expenditures from a DBE manufacturer.

(F) Manufacturers and Regular Dealers

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) With respect to materials or supplies purchased from a DBE, which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site (but not the cost of the materials and supplies themselves), provided the fees are determined to be reasonable and not excessive as compared with fees customarily allowed for similar services.

Commercially Useful Function

(A) DBE Utilization

The Contractor may count toward its contract goal requirement only expenditures to DBEs that perform a commercially useful function in the work of a contract. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE shall also be responsible with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing

a commercially useful function, the Department will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and any other relevant factors.

(B) DBE Utilization in Trucking

The following factors will be used to determine if a DBE trucking firm is performing a commercially useful function.

- (1) 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.
- (2) The DBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
- (3) 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.
- (4) The DBE may subcontract the work to another DBE firm, including an owner-operator who is certified as a DBE. The DBE who subcontracts work to another DBE receives credit for the total value of the transportation services the subcontracted DBE provides on the contract.
- (5) The DBE may also subcontract the work to a non-DBE firm, including from an owner-operator. The DBE who subcontracts the work to a non-DBE is entitled to credit for the total value of transportation services provided by the non-DBE subcontractor not to exceed the value of transportation services provided by DBE-owned trucks on the contract. Additional participation by non-DBE subcontractors receives credit only for the fee or commission it receives as a result of the subcontract arrangement. The value of services performed under subcontract agreements between the DBE and the Contractor will not count towards the DBE contract requirement.
- (6) A DBE may lease truck(s) from an established equipment leasing business open to the general public. The lease must indicate that the DBE has exclusive use of and control over the truck. This requirement does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. This type of lease may count toward the DBE's credit as long as the driver is under the DBE's payroll.
- (7) Subcontracted/leased trucks shall display clearly on the dashboard the name of the DBE that they are subcontracted/leased to and their own

company name if it is not identified on the truck itself. Magnetic door signs are not permitted.

DBE Replacement

When a Contractor has relied on a commitment to a DBE firm (or an approved substitute DBE firm) to meet all or part of a contract goal requirement, the contractor shall not terminate the DBE for convenience. This includes, but is not limited to, instances in which the Contractor seeks to perform the work of the terminated subcontractor with another DBE subcontractor, a non-DBE subcontractor, or with the Contractor's own forces or those of an affiliate. A DBE may only be terminated after receiving the Engineer's written approval based upon a finding of good cause for the termination.

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

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

(A) Performance Related Replacement

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

If a replacement DBE is not found that can perform at least the same amount of work as the terminated DBE, the Contractor shall submit a good faith effort documenting the steps taken. Such documentation shall include, but not be limited to, the following:

- (1) Copies of written notification to DBEs that their interest is solicited in contracting the work defaulted by the previous DBE 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) A list of reasons why DBE quotes were not accepted.
- (4) Efforts made to assist the DBEs contacted, if needed, in obtaining bonding or insurance required by the Contractor.

(B) Decertification Replacement

- (1) When a committed DBE is decertified by the Department after the SAF (*Subcontract Approval Form*) has been received by the Department, the Department will not require the 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 goal requirement.
- (2) When a committed DBE is decertified prior to the Department receiving the SAF (*Subcontract Approval Form*) for the named DBE firm, the 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 DBE goal requirement. If a DBE firm is not found to do the same amount of work, a good faith effort must be submitted to NCDOT (see A herein for required documentation).

Changes in the Work

When the Engineer makes changes that result in the reduction or elimination of work to be performed by a committed 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 the 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 and Documentation

A SAF (*Subcontract Approval Form*) shall be submitted for all work which is to be performed by a DBE subcontractor. The Department reserves the right to require copies of actual subcontract agreements involving DBE subcontractors.

When using transportation services to meet the contract commitment, the Contractor shall submit a proposed trucking plan in addition to the SAF. The plan shall be submitted

prior to beginning construction on the project. The plan shall include the names of all trucking firms proposed for use, their certification type(s), the number of trucks owned by the firm, as well as the individual truck identification numbers, and the line item(s) being performed.

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

Reporting Disadvantaged Business Enterprise Participation

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

- (A) Withholding of money due in the next partial pay estimate; or
- (B) Removal of an approved contractor from the prequalified bidders' list or the removal of other entities from the approved subcontractors list.

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

Failure on the part of the Contractor to submit the required information in the time frame specified may result in the disqualification of that contractor and any affiliate companies from further bidding until the required information is submitted.

Failure on the part of any subcontractor to submit the required information in the time frame specified may result in the disqualification of that contractor and any affiliate companies from being approved for work on future projects until the required information is submitted.

Contractors reporting transportation services provided by non-DBE lessees shall evaluate the value of services provided during the month of the reporting period only.

At any time, the Engineer can request written verification of subcontractor payments.

The Contractor shall report the accounting of payments on the Department's DBE-IS (*Subcontractor Payment Information*) with each invoice. Invoices will not be processed for payment until the DBE-IS is received.

Failure to Meet Contract Requirements

Failure to meet contract requirements in accordance with Subarticle 102-16(J) of the *2006 Standard Specifications* may be cause to disqualify the Contractor from further bidding for a specified length of time.

PROGRESS SCHEDULE:

(12-18-07)

RG 70

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)

RG 80

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.

CERTIFICATION FOR FEDERAL-AID CONTRACTS:

(3-21-90)

RG 85

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)

RG 100

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.

SUBSURFACE INFORMATION:

(7-1-95)

SP1 G118

Subsurface information is available on the structure portion of this project only.

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.

CONTRACTOR CLAIM SUBMITTAL FORM:

(9-16-08)

RG 140

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/.

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.

OUTSOURCING OUTSIDE THE USA:

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

SP1 G150

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

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

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

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)

RG 152

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.

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

ROADWAY SPECIAL PROVISIONS

SHOULDER CONSTRUCTION PROCEDURE:

(7-1-95)

R1 R10

Perform shoulder construction immediately following paving operations and in no case allow paving operations to exceed shoulder operations by more than two weeks without written permission of the Engineer. Failure to meet this requirement shall be cause to cease paving operations until it can be met. Place final pavement marking after shoulder construction.

Upon completion of shoulder construction, remove construction signs and use on other projects or store at the county maintenance installation or as directed by the Engineer.

CLEARING AND GRUBBING – METHOD II

(9-17-02)

SP2 R01

Perform clearing on this project to the limits established by Method "II" shown on Standard No. 200.02 of the *Roadway Standard Drawings*.

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.

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*

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*.

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:

$$\text{Pay Adjustment (per linear foot)} = [(\text{APE}-\text{AAE}) \pm 1 \text{ foot}] (0.15 \times \text{CUP})$$

Where: CUP = Contract Unit Price of Pipe Culvert

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

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

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	Pay Unit
Foundation Conditioning Material, Minor Structures	Ton
Foundation Conditioning Fabric	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:

Pay Item	Pay Unit
__ " R.C. Pipe Culverts, Class ____	Linear Foot
__ " x __ " x __ " R.C. Pipe Tees, Class ____	Each
__ " R.C. Pipe Elbows, Class ____.	Each
__ " C.A.A. Pipe Culvert, __ " Thick	Linear Foot
__ " x __ " x __ " C.A.A. Pipe Tees, __ " Thick	Each
__ " C.A.A. Pipe Elbows, __ " Thick	Each
__ " C.S. Pipe Culverts, __ " Thick	Linear Foot
__ " x __ " C.S. Pipe Arch Culverts, __ " Thick	Linear Foot
__ x __ " x __ " C.S. Pipe Tees, __ " Thick	Each
__ " C.S. Pipe Elbows, __ " Thick	Each
__ " x __ " C.S. Eccentric Reducers, __ " Thick	Each
__ " HDPE Pipe	Linear Foot
__ " PVC Pipe	Linear Foot
__ " Side Drain Pipe	Linear Foot
__ " Side Drain Pipe Elbows	Each
__ " Pipe End Section	Each

BRIDGE APPROACH FILLS:

(10-19-10)

SP4 R01

Description

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

Materials

Refer to Division 10 of the *Standard Specifications*:

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

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

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

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

Construction Methods

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

Attach geomembranes or filter fabrics to back of end bent caps and wing walls with adhesives, tapes or other approved methods. Use wire staples as needed to hold filter fabrics in place until covered. Overlap adjacent fabrics a minimum of 18" such that

overlaps are parallel to the roadway centerline. Glue or weld geomembrane seams to prevent leakage. Contact the Engineer when existing or future structures such as foundations, pavements, pipes, inlets or utilities will interfere with geotextiles.

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

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

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

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

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

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

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

Measurement and Payment

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

Bridge Approach Fill – Sub Regional Tier, Station _____ will be paid at the contract lump sum price. Such price and payment will be full compensation for all bridge approach fills at each sub regional tier bridge for excavating and furnishing, transporting and placing filter fabrics, no. 78M stone, drainage pipes, pipe sleeves and concrete pads, compacting no. 78M stone, connecting pipes to existing drainage structures and providing any labor, tools, equipment and materials to complete the work.

Payment will be made under:

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

FINE GRADING SUBGRADE, SHOULDERS AND DITCHES:

(7-21-09)

SP5R01

Revise the *Standard Specifications* as follows:

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

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

INCIDENTAL STONE BASE:

(7-1-95) (Rev.7-18-06)

R5 R28

Description

Place incidental stone base on driveways, mailboxes, etc. immediately after paving and do not have the paving operations exceed stone base placement by more than one week without written permission of the Engineer.

Materials and Construction

Provide and place incidental stone base in accordance with the requirements of Section 545 of the *2006 Standard Specifications*.

Measurement and Payment

Incidental Stone Base will be measured and paid for in accordance with Article 545-6 of the *2006 Standard Specifications*.

ASPHALT PAVEMENTS - SUPERPAVE:

(7-18-06)(Rev 10-18-11)

R6 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 D2041

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. Gyration @		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) Volumetric Properties based on specimens compacted to N_{des} as modified by the Department.
 - (c) 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.
 - (d) Mix Design Criteria for Type S 4.75A may be modified subject to the approval of the Engineer.

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

**TABLE 610-2A
SUPERPAVE MIX DESIGN CRITERIA**

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

- Note: (1) Category 1 RAP has been processed to a maximum size of 2 inches.
 (2) Category 2 RAP has been processed to a maximum size of one 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 one inch, fractionating the RAP into 2 or more sized stockpiles

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

**TABLE 610-3
ASPHALT PLACEMENT- MINIMUM TEMPERATURE REQUIREMENTS**

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

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

Page 6-44, 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 6-45, Article 610-8 SPREADING AND FINISHING delete the third paragraph on page 6-45 and replace with the following:

Use a Material Transfer Vehicle (MTV) when placing all asphalt concrete plant mix pavements which require the use of asphalt binder grade PG 76-22 and for all types of

OGAFC, unless otherwise approved. Use a MTV for all surface mix regardless of binder grade placed on Interstate and US routes that have four or more lanes and median divided. Where required above, utilize the MTV when placing all full width travel lanes and collector lanes. Use MTV for all ramps, loops, -Y- line travel lanes, full width acceleration and deceleration lanes, and full width turn lanes that are greater than 1,000 feet in length.

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:

First Paragraph, delete and replace with the following:

Asphalt Binder for Plant Mix and Polymer Modified Asphalt Binder for Plant Mix will be measured and paid for as the theoretical number of tons required by the applicable job mix formula based on the actual number of tons of plant mix completed and accepted on the job.

Second paragraph, delete entire paragraph.

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.

Delete pay items and add the following pay items:

Pay Item	Pay Unit
Asphalt Binder for Plant Mix	Ton
Polymer Modified Asphalt Binder for Plant Mix	Ton

Page 6-55, Article 650-2 Materials, insert the following at the end of the list of items.

Reclaimed asphalt shingles 1012-1(F)

Page 6-57, Subarticle 650-3(B), Mix Design Criteria, insert the following as the fourth paragraph.

Reclaimed asphalt shingle (RAS) material may constitute up to 6% by weight of total mixture. The maximum percentage of binder contributed from reclaimed asphalt material will be 20% of the total binder in the completed mix.

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

Use a Material Transfer Vehicle (MTV) when placing all asphalt concrete plant mix pavements which require the use of asphalt binder grade PG 76-22 and for all types of OGAFc, unless otherwise approved. Use a MTV for all surface mix regardless of binder grade placed on Interstate and US routes that have four or more lanes and median divided. Where required above, utilize the MTV when placing all full width travel lanes and collector lanes. Use MTV for all ramps, loops, -Y- line travel lanes, full width acceleration and deceleration lanes, and full width turn lanes that are greater than 1,000 feet in length.

Page 6-61, Article 650-7 MEASUREMENT AND PAYMENT delete the second paragraph and replace with the following:

Furnishing asphalt binder for the mix will be paid for as provided in Article 620-4 for *Asphalt Binder for Plant Mix* or *Polymer Modified Asphalt Binder for Plant Mix*. Adjustments in contract unit price due to asphalt binder price fluctuations will be made in accordance with Article 620-4.

Page 6-64, Article 652-6 MEASUREMENT AND PAYMENT delete the second paragraph and replace with the following:

Asphalt Binder for Plant Mix will be paid for in accordance with Article 620-4.

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 POLYMER MODIFIED 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. The grade of asphalt binder to be paid for the production of Ultra-thin will be *Polymer Modified Asphalt Binder For Plant Mix*.

Page 6-79, Subarticle 661-2(G) Composition of Mix, add the following as the third sentence of the first paragraph.

The percent of asphalt binder contributed from the RAS shall not exceed 20% of the total binder in the completed mix.

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

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

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

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

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

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

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

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

Do not place Ultra-thin Bonded Wearing Course between October 31 and April 1, when the pavement surface temperature is less than 50°F or on a wet pavement. In addition, when

PG 76-22 binder is used in the JMF, place the wearing course only when the road pavement surface temperature is 60°F or higher and the air temperature in the shade away from artificial heat is 60°F or higher.

Page 6-83, Article 661-4, MEASUREMENT AND PAYMENT delete third paragraph and replace with the following:

Polymer Modified Asphalt Binder For Plant Mix will be paid for in accordance with Article 620-4. Asphalt binder price adjustments when applicable will be based on Grade PG 64-22, regardless of the grade used.

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 OG AFC and add new entries for OG AFC 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
OG AFC	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), delete and replace with the following:

(F) Reclaimed Asphalt Shingles (RAS)

For use in asphalt mix, Reclaimed Asphalt Shingles (RAS) can be either manufacturer-waste shingles or post-consumer shingles that have been processed into a product that meets the requirements of this section.

Manufacturer-waste RAS (MRAS) are processed shingle materials discarded from the manufacturing of new asphalt shingles. It may include asphalt shingles or shingle tabs that have been rejected by the shingle manufacturer.

Post-consumer RAS (PRAS) are processed shingle materials recovered from mixed roofing material scrap removed from existing structures. Tear-off shingle scrap must be sorted and other roofing debris, including nails, plastic, metal, wood, coal tar epoxy, rubber materials, or other undesirable components, shall be removed. This sorting of the scrap must be done prior to grinding of the PRAS for use in asphalt production.

Sample and test PRAS for asbestos and provide results demonstrating that the bulk samples contain less than one percent of asbestos containing material in accordance with Federal, State of North Carolina, and Local regulations. Use NC-accredited Asbestos Inspectors or Roofing Supervisors to sample the PRAS to meet the above criteria. Maintain records on-site indicating shingle source(s), asbestos operation plan approved by Division of Public Health's Health Hazards Control Unit, and all asbestos analytical reports. All documentation will be subject to review by the Department.

Process RAS by ambient grinding or granulating methods such that 100% of the particles will pass the 9.50 mm (3/8") sieve when tested in accordance with AASHTO T27. Perform sieve analysis on processed asphalt shingles prior to ignition or solvent extraction testing.

RAS shall contain no more than 0.5% by total cumulative weight of deleterious materials. These materials include, but are not limited to, excessive dirt, debris, concrete, metals, glass, paper, rubber, wood, plastic, soil, brick, tars, or other contaminating substances.

Blend RAS with fine aggregate or RAP, meeting the requirements of this Section, if needed to keep the processed material workable.

MRAS and PRAS shall not be blended together for the production of hot mix asphalt.

(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 meet the gradation requirements 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. Store RAS materials in such a manner as to prevent contamination.

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 BINDER AND GRADATION TOLERANCES (Apply Tolerances to Mix Design Data)	
P_b %	±2.5
<i>Sieve Size, mm</i>	<i>Tolerance</i>
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 subarticle 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) (Rev 7-19-11)

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 25.0B	4.4%
Asphalt Concrete Intermediate Course	Type I 19.0B	4.8%
Asphalt Concrete Surface Course	Type S 9.5B	6.0%

The actual asphalt binder content will be established during construction by the Engineer within the limits established in the *2006 Standard Specifications*.

ASPHALT PLANT MIXTURES:

(7-1-95)

R6 R20

Place asphalt concrete base course material in trench sections with asphalt pavement spreaders made for the purpose or with other equipment approved by the Engineer.

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 **\$634.29** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **April 1, 2012**.

MASONRY DRAINAGE STRUCTURES:

(10-16-07)

SP8R01

Revise the *2006 Standard Specifications* as follows:

Page 8-31, Article 840-4 Measurement and Payment, add the following at the end of the second paragraph:

For that portion of *Masonry Drainage Structure* measured above a height of 10.0 feet, payment will be made at 1.3 times the contract unit price per linear foot for *Masonry Drainage Structure*.

**BORROW EXCAVATION AND SHPO DOCUMENTATION FOR
BORROW/WASTE SITES:**

(12-18-07) (4-15-08)

R8 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 TL-2

(10-21-08) (Rev 8-16-11)

SP8 R64

Description

Furnish and install guardrail anchor units in accordance with the details in the plans, the applicable requirements of Section 862 of the *2006 Standard Specifications*, and at locations shown in the plans.

Materials

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

Guardrail anchor unit (ET-Plus) 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 2 in accordance with Section 106-2 of the *2006 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 *2006 Standard 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 *2006 Standard Specifications* and is incidental to the cost of the guardrail anchor unit.

Measurement and Payment

Measurement and payment will be made in accordance with Articles 862-6 of the *2006 Standard Specifications*.

Payment will be made under:

Pay Item

Guardrail Anchor Units, Type 350 TL-2

Pay Unit

Each

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.

GLASS BEADS:

(7-18-06)(Rev 10-19-10)

SP10 R35

Revise the *2006 Standard Specifications* as follows:

Page 10-223, 1087-4(A) Composition, add the following as the fourth paragraph:

Glass beads shall have no more than 75 parts per million of arsenic as determined by the United States Environmental Protection Agency Method 6010B in conjunction with the United States Environmental Protection Agency Method 3052 modified.

Page 10-223, 1087-4(C) Gradation & Roundness, delete the last paragraph and replace the second sentence of the first paragraph with the following:

All Drop-On and Intermixed Glass Beads shall be tested in accordance with ASTM D1155.

Page 10-226, 1087-8 Material Certification, add the following below the first sentence:

Glass Beads (for paint, thermoplastic and polyurea) – Type 3 Material Certification for no more than 75 parts per million of arsenic

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	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

PAINT SAMPLING AND TESTING:

8-15-06

(SP10 R 45)

Revise the 2006 Standard Specifications as follows:

Page 10-190, Article 1080-4, Delete the first paragraph and replace with the following:

All paint will be sampled, either at the point of manufacture or at the point of destination. Inspection and sampling will be performed at the point of manufacture wherever possible. The Contractor shall not begin painting until the analysis of the paint has been performed, and the paint has been accepted.

WORK ZONE TRAFFIC CONTROL:

(8-16-11)

SP11 R20

Revise the 2006 Standard Specifications as follows:

Page 11-3, Article 1101-12 Traffic Control Supervision, in addition to the stated requirements, add the following:

Provide the service of at least one qualified Work Zone Supervisor. The Work Zone Supervisor shall have the overall responsibility for the proper implementation of the traffic management plan, as well as ensuring all employees working inside the NCDOT Right of Way have received the proper training appropriate to the job decisions each individual is required to make.

The work zone supervisor is not required to be on site at all times but must be available to address concerns of the Engineer. The name and contact information of the work zone supervisor shall be provided to the Engineer prior to or at the preconstruction conference.

Qualification of Work Zone Supervisors shall be done by an NCDOT approved training agency or other approved training provider. For a complete listing of these, see the Work Zone Traffic Control's webpage, <http://www.ncdot.gov/doh/preconstruct/wztc/>.

Page 11-13, Article 1150-3 Construction Methods, replace the article with the following:

Provide the service of properly equipped and qualified flaggers (see *Roadway Standard Drawings* No. 1150.01) at locations and times for such period as necessary for the control and protection of vehicular and pedestrian traffic. Anyone who controls traffic is required to be qualified. Qualification consists of each flagger receiving proper training in the set-up and techniques of safely and competently performing a flagging operation. Qualification of flaggers is to be done at an NCDOT approved training agency. For a complete listing of these, see the Work Zone Traffic Control's webpage, <http://www.ncdot.gov/doh/preconstruct/wztc/>.

Prior to beginning work on the project, a Qualification Statement that all flaggers used on the project have been properly trained through an NCDOT approved training resource shall be provided to the Engineer.

Flagging operations are not allowed for the convenience of the Contractor's operations. However, if safety issues exist (i.e. sight or stopping sight distance), the Engineer may approve the use of flagging operations. Use flagging methods that comply with the guidelines in the MUTCD.

PAVEMENT MARKING LINES:

(11-21-06) (Rev. 08-17-10)

R12 R01

Revise the *2006 Standard Specifications* as follows:

Page 12-2, 1205-3(D) Time Limitations for Replacement, add the following at the beginning of the chart:

Facility Type	Marking Type	Replacement Deadline
Full-control-of-access multi-lane roadway (4 or more total lanes) and ramps, including Interstates	All markings including symbols	By the end of each workday's operation if the lane is opened to traffic

Page 12-5, 1205-3 (H) Observation Period, delete 1205-3 (H) and replace with the following:

Maintain responsibility for debonding and color of the pavement markings during a 12 month observation period beginning upon final acceptance of the project as defined under Article 105-17. Guarantee the markings under the payment and performance bond in accordance with Article 105-17.

During the 12 month observation period, provide pavement marking material that shows no signs of failure due to blistering, chipping, bleeding, discoloration, smearing or spreading under heat or poor adhesion to the pavement materials. Pavement markings that debond due to snowplowing will not be considered a failed marking. Replace, at no additional expense to the Department, any pavement markings that do not perform satisfactorily under traffic during the 12 month observation period.

Page 12-8, 1205-4 (C) Application, delete the last two sentences of the second paragraph and replace with the following:

Produce in place markings with minimum retroreflective values shown below, as obtained with a LTL 2000 R etroreflectometer or Department approved mobile retroreflectometer. Retroreflective measurements will be taken within 30 days after final placement of the pavement marking.

Page 12-9, 1205-4 (D) Observation Period, delete the entire section and replace with the following:

In addition to the requirements of Subarticle 1205-3(H), maintain responsibility for minimum retroreflective values for a 30-day period beginning upon the Engineer's acceptance of all markings on the project. Guarantee retroreflective values of the markings during the 30-day period under the payment and performance bond in accordance with Article 105-17.

Page 12-9, 1205-5 (B) Application, delete the second sentence of the fourth paragraph and replace with the following:

Produce in place markings with minimum retroreflective values shown below, as obtained with a LTL 2000 R etroreflectometer or Department approved mobile retroreflectometer. Retroreflective measurements will be taken within 30 days after final placement of the pavement marking.

Page 12-10, 1205-5 (C) Observation Period, delete this entire section and replace with the following:

Maintain responsibility for minimum retroreflective values for a 30-day period beginning upon satisfactory final placement of all markings on the project. Guarantee retroreflective values of the markings during the 30-day period under the payment and performance bond in accordance with Article 105-17.

Page 12-14, Article 1205-9, Maintenance, delete Article 1205-9 and replace with the following:

Replace pavement markings that prematurely deteriorate, fail to adhere to the pavement, lack reflectorization, or are otherwise unsatisfactory during the life of the project or during the 12 month observation period as determined by the Engineer at no cost to the Department.

Upon notification from the Engineer, winterize the project by placing an initial or additional application of paint pavement marking lines in accordance with Article 1205-8. Payment for *Paint Pavement Marking Lines* required to winterize the project will be made in accordance with Article 1205-10 except that no payment will be made on resurfacing projects where paving is completed more than 30 days prior to the written notification by the Department that winterization is required.

Page 12-14, Article 1205-10, Measurement and Payment, add the following after the first sentence of the first paragraph:

In addition, *Paint Pavement Marking Lines* will be paid per linear foot for each 15 mil application placed in accordance with Subarticle 1205-8(C).

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

STABILIZATION REQUIREMENTS:

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

SEEDING AND MULCHING

(West)

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.

MOWING:

The minimum mowing height on this project shall be six inches.

LAWN TYPE APPEARANCE:

All areas adjacent to lawns must be hand finished as directed to give a lawn type appearance. Remove all trash, debris, and stones $\frac{3}{4}$ " and larger in diameter or other obstructions that could interfere with providing a smooth lawn type appearance. These areas shall be reseeded to match their original vegetative conditions, unless directed otherwise by the Field Operations Engineer.

SEED MIX, CRIMPING, AND GUARDRAIL SEED TO BE USED BY COUNTY						Native Seed Mix
	County	Seed Mix	Crimping	Guardrail Seed	Division	
1	Alamance	East	NO	Centipede	7	West
2	Alexander	West	NO	Hard Fescue/Bluegrass	12	West
3	Alleghany	West	NO	Hard Fescue/Bluegrass	11	West
4	Anson	East	NO	Centipede	10	West
5	Ashe	West	NO	Hard Fescue/Bluegrass	11	West
6	Avery	West	NO	Hard Fescue/Bluegrass	11	West
7	Beaufort	East	YES	Centipede	2	East
8	Bertie	East	YES	Centipede	1	East
9	Bladen	East	YES	Centipede	6	East
10	Brunswick	East	YES	Centipede	3	East
11	Buncombe	WestEd	NO	Hard Fescue/Bluegrass	13	West
12	Burke	WestEd	NO	Hard Fescue/Bluegrass	13	West
13	Cabarrus	West	NO	Hard Fescue/Bluegrass	10	West
14	Caldwell	West	NO	Hard Fescue/Bluegrass	11	West
15	Camden	East	YES	Centipede	1	East
16	Carteret	East	YES	Centipede	2	East
17	Caswell	West	NO	Hard Fescue/Bluegrass	7	West
18	Catawba	West	NO	Hard Fescue/Bluegrass	12	West
19	Chatham	East	YES	Centipede	8	West
20	Cherokee	WestEd	NO	Hard Fescue/Bluegrass	14	West
21	Chowan	East	YES	Centipede	1	East
22	Clay	WestEd	NO	Hard Fescue/Bluegrass	14	West
23	Cleveland	West	NO	Hard Fescue/Bluegrass	12	West
24	Columbus	East	YES	Centipede	6	East
25	Craven	East	YES	Centipede	2	East
26	Cumberland	East	YES	Centipede	6	East
27	Currituck	East	YES	Centipede	1	East
28	Dare	East	YES	Centipede	1	East
29	Davidson	West	NO	Hard Fescue/Bluegrass	9	West
30	Davie	West	NO	Hard Fescue/Bluegrass	9	West
31	Duplin	East	YES	Centipede	3	East
32	Durham	East	NO	Centipede	5	East
33	Edgecombe	East	YES	Centipede	4	East
34	Forsyth	West	NO	Hard Fescue/Bluegrass	9	West
35	Franklin	East	NO	Centipede	5	East
36	Gaston	West	NO	Hard Fescue/Bluegrass	12	West
37	Gates	East	YES	Centipede	1	East
38	Graham	WestEd	NO	Hard Fescue/Bluegrass	14	West
39	Granville	East	NO	Centipede	5	East
40	Greene	East	YES	Centipede	2	East
41	Guilford	East	NO	Centipede	7	West
42	Halifax	East	YES	Centipede	4	East
43	Harnett	East	YES	Centipede	6	East
44	Haywood	WestEd	NO	Hard Fescue/Bluegrass	14	West
45	Henderson	WestEd	NO	Hard Fescue/Bluegrass	14	West
46	Hertford	East	YES	Centipede	1	East
47	Hoke	East	YES	Centipede	8	West
48	Hyde	East	YES	Centipede	1	East
49	Iredell	West	NO	Hard Fescue/Bluegrass	12	West
50	Jackson	WestEd	NO	Hard Fescue/Bluegrass	14	West

SEED MIX, CRIMPING, AND GUARDRAIL SEED TO BE USED BY COUNTY						Native Seed Mix
	County	Seed Mix	Crimping	Guardrail Seed	Division	
51	Johnston	East	YES	Centipede	4	East
52	Jones	East	YES	Centipede	2	East
53	Lee	East	YES	Centipede	8	West
54	Lenoir	East	YES	Centipede	2	East
55	Lincoln	West	NO	Hard Fescue/Bluegrass	12	West
56	Macon	WestEd	NO	Hard Fescue/Bluegrass	14	West
57	Madison	WestEd	NO	Hard Fescue/Bluegrass	13	West
58	Martin	East	YES	Centipede	1	East
59	McDowell	WestEd	NO	Hard Fescue/Bluegrass	13	West
60	Mecklenburg	West	NO	Hard Fescue/Bluegrass	10	West
61	Mitchell	WestEd	NO	Hard Fescue/Bluegrass	13	West
62	Montgomery	East	YES	Centipede	8	West
63	Moore	East	YES	Centipede	8	West
64	Nash	East	YES	Centipede	4	East
65	New Hanover	East	YES	Centipede	3	East
66	Northampton	East	YES	Centipede	1	East
67	Onslow	East	YES	Centipede	3	East
68	Orange	East	NO	Centipede	7	West
69	Pamlico	East	YES	Centipede	2	East
70	Pasquotank	East	YES	Centipede	1	East
71	Pender	East	YES	Centipede	3	East
72	Perquimans	East	YES	Centipede	1	East
73	Person	East	NO	Centipede	5	East
74	Pitt	East	YES	Centipede	2	East
75	Polk	WestEd	NO	Hard Fescue/Bluegrass	14	West
76	Randolph	East	YES	Centipede	8	West
77	Richmond	East	YES	Centipede	8	West
78	Robeson	East	YES	Centipede	6	East
79	Rockingham	West	NO	Hard Fescue/Bluegrass	7	West
80	Rowan	West	NO	Hard Fescue/Bluegrass	9	West
81	Rutherford	WestEd	NO	Hard Fescue/Bluegrass	13	West
82	Sampson	East	YES	Centipede	3	East
83	Scotland	East	YES	Centipede	8	West
84	Stanly	West	NO	Hard Fescue/Bluegrass	10	West
85	Stokes	West	NO	Hard Fescue/Bluegrass	9	West
86	Surry	West	NO	Hard Fescue/Bluegrass	11	West
87	Swain	WestEd	NO	Hard Fescue/Bluegrass	14	West
88	Transylvania	WestEd	NO	Hard Fescue/Bluegrass	14	West
89	Tyrrell	East	YES	Centipede	1	East
90	Union	West	NO	Hard Fescue/Bluegrass	10	West
91	Vance	East	NO	Centipede	5	East
92	Wake	East	NO	Centipede	5	East
93	Warren	East	NO	Centipede	5	East
94	Washington	East	YES	Centipede	1	East
95	Watauga	West	NO	Hard Fescue/Bluegrass	11	West
96	Wayne	East	YES	Centipede	4	East
97	Wilkes	West	NO	Hard Fescue/Bluegrass	11	West
98	Wilson	East	YES	Centipede	4	East
99	Yadkin	West	NO	Hard Fescue/Bluegrass	11	West
100	Yancey	WestEd	NO	Hard Fescue/Bluegrass	13	West

Form ESC-11

COIR FIBER WATTLE:

Description

Coir Fiber Wattles are tubular products consisting of coir fibers (coconut fibers) encased in coir fiber netting. Coir Fiber Wattles are used on slopes or channels to intercept runoff and act as a velocity break. Coir Fiber Wattles are to be placed at locations shown on the plans or as directed. Installation shall follow the detail provided in the plans and as directed. Work includes furnishing materials, installation of coir fiber wattles, matting installation, and removing wattles.

Materials

Coir Fiber Wattle shall meet the following specifications:

100% Coir (Coconut) Fibers	
Minimum Diameter	12 in.
Minimum Density	3.5 lb/ft ³ +/- 10%
Net Material	Coir Fiber
Net Openings	2 in. x 2 in.
Net Strength	90 lbs.
Minimum Weight	2.6 lbs./ft. +/- 10%

Anchors: Stakes shall be used as anchors.

Wooden Stakes:

Provide hardwood stakes a minimum of 2-ft. long with a 2 in. x 2 in. nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving down into the underlying soil.

Matting shall meet the requirements of section 1060-8 of the *Standard Specifications*, or shall meet specifications provided elsewhere in this contract.

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

Construction Methods

Coir Fiber Wattles shall be secured to the soil by wire staples approximately every 1 linear foot and at the end of each section of wattle. A minimum of 4 stakes shall be installed on the downstream side of the wattle with a maximum spacing of 2 linear feet along the wattle, and according to the detail. Install a minimum of 2 stakes on the upstream side of the wattle according to the detail provided in the plans. Stakes shall be driven into the ground a minimum of 10 in. with no more than 2 in. projecting from the top of the wattle. Drive stakes at an angle according to the detail provided in the plans.

Only install coir fiber wattle(s) to a height in ditch so flow will not wash around wattle and scour ditch slopes and according to the detail provided in the plans and as directed. Overlap adjoining sections of wattles a minimum of 6 in.

Installation of matting shall be in accordance with the detail provided in the plans, and in accordance with section 1631-3(B) of the *Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

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

Measurement and Payment

Coir Fiber Wattles will be measured and paid for by the actual number of linear feet of wattles which are installed and accepted. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Coir Fiber Wattles*

Matting will be measured and paid for in accordance with section 1631-4 of the *Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

Payment will be made under:

Pay Item
Coir Fiber Wattle

Pay Unit
Linear Foot

TEMPORARY ROCK SILT CHECK TYPE A WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM):

Description

Temporary Rock Silt Checks Type A with Excelsior Matting and Polyacrylamide (PAM) are devices utilized in temporary and permanent ditches to reduce runoff velocity and incorporate PAM into the construction runoff to increase settling of sediment particles and reduce turbidity of runoff. Temporary Rock Silt Checks Type A with Excelsior Matting and PAM are to be placed at locations shown on the plans or as directed. Installation shall follow the detail provided in the plans and as directed. Work includes furnishing materials, installation of Temporary Rock Silt Checks Type A, matting installation, PAM application, and removing Temporary Rock Silt Checks Type A with Excelsior Matting and PAM.

Materials

Structural stone shall be class B stone that meets the requirements of Section 1042 of the Standard Specifications for Stone for Erosion Control, Class B.

Sediment control stone shall be #5 or #57 stone, which meets the requirements of Section 1005 of the Standard Specifications for these stone sizes.

Matting shall meet the requirements of Excelsior Matting in section 1060-8(B) of the *Standard Specifications*, or shall meet specifications provided elsewhere in this contract.

Polyacrylamide (PAM) shall be applied in powder form and shall be anionic or neutrally charged. Soil samples shall be obtained in areas where the Temporary Rock Silt Checks Type A with Excelsior Matting and PAM will be placed, and from offsite material used to construct the roadway, and analyzed for the appropriate PAM flocculant to be utilized with each Temporary Rock Silt Check Type A. The PAM product used shall be listed on the North Carolina Department of Environment and Natural Resources (NCDENR) Division of Water Quality (DWQ) web site as an approved PAM product for use in North Carolina.

Construction Methods

Temporary Rock Silt Checks Type A shall be installed in accordance with Section 1633-3(A) of the Standard Specifications, Roadway Standard Drawing No. 1633.01 and the detail provided in the plans.

Installation of matting shall be in accordance with the detail provided in the plans, and anchored by placing Class B stone on top of the matting at the upper and lower ends.

Apply PAM at a rate of 3.5 ounces over the center portion of the Temporary Rock Silt Checks Type A and matting where the water is going to flow over. PAM applications shall be done during construction activities and after every rainfall event that is equal to or exceeds 0.50 in.

The Contractor shall maintain the Temporary Rock Silt Checks Type A with Excelsior Matting and PAM until the project is accepted or until the Temporary Rock Silt Checks Type A with Excelsior Matting and PAM are removed, and shall remove and dispose of silt accumulations at the Temporary Rock Silt Checks Type A with Excelsior Matting and PAM when so directed in accordance with the requirements of Section 1630 of the *Standard Specifications*.

Measurement and Payment

Temporary Rock Silt Checks Type A will be measured and paid for in accordance with section 1633-5 of the *Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

Matting will be measured and paid for in accordance with section 1631-4 of the *Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

Polyacrylamide(PAM) will be measured and paid for by the actual weight in pounds of PAM applied to the Temporary Rock Silt Checks Type A. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to apply the *Polyacrylamide(PAM)*.

Payment will be made under:

Pay Item Pay	Unit
Polyacrylamide(PAM)	Pound

MINIMIZE REMOVAL OF VEGETATION

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

RESPONSE FOR EROSION CONTROL

8-9-06

SPI

Description

Furnish the labor, materials, tools and equipment necessary to move personnel, equipment, and supplies to the project necessary for the pursuit of any or all of the following work as shown herein, by an approved subcontractor.

SECTION	EROSION CONTROL ITEM	UNIT
1605	Temporary Silt Fence	LF
SP	Special Sediment Control Fence	LF/Ton
1615	Temporary Mulching	ACR
1620	Seed-Temporary Seeding	LB
1620	Fertilizer-Temporary Seeding	TN
1631	Matting for Erosion Control	SY
SP	Coir Fiber Mat	SY
SP	Coir Fiber Baffles	LF
SP	Permanent Soil Reinforcement Mat	SY
1660	Seeding and Mulching	ACR
1661	Seed-Repair Seeding	LB
1661	Fertilizer-Repair Seeding	TON
1662	Seed-Supplemental Seeding	LB
1665	Fertilizer Topdressing	TON
SP	Safety/Highly Visible Fencing	LF
SP	Response for Erosion Control	EA

Construction Methods

Provide an approved subcontractor who performs an erosion control action as described in Form 1675. Each erosion control action may include one or more of the above work items.

Measurement and Payment

Response for Erosion Control will be measured and paid for by counting the actual number of times the subcontractor moves onto the project, including borrow and waste sites, and satisfactorily completes an erosion control action described in Form 1675. The provisions of Article 104-5 of the *Standard Specifications* will not apply to this item of work.

The Erosion Control Contractor shall respond with adequate equipment, personnel, and supplies so as to begin work within 54 hours of the Engineer’s notification to the prime contractor.

Payment will be made under:

Pay Item	Pay Unit
Response for Erosion Control	Each

TEMPORARY SILT FENCE: **(10-19-10)**

Revise the 2006 *Standard Specifications* as follows:

Page 16-1, **Subarticle 1605-2(C) Filter Fabric**, replace the only sentence with the following:

Provide Type 3 Engineering Fabric meeting the requirements of Section 1056 of the *Standard Specifications*.

Page 16-2, **Article 1605-3 INSTALLATION**, replace the third sentence with the following:

Filter fabric may be used without woven wire fence backing in accordance with the following conditions:

Page 16-2, **Subarticle 1605-3(B)** Post spacing is inclined....., replace first item in list with the following:

- (1) Attach filter fabric to the post with wire or other acceptable methods.

SPECIALIZED HAND MOWING:

Description

This work consists of specialized hand mowing around or under fixed objects, including but not limited to guardrails, signs, barriers and slopes in a method acceptable to the Engineer.

Specialized hand mowing shall be completed with mechanically powered trimmers, string trimmers, hand operated rotary mowers, or self-propelled mowers of sufficient size and quality to perform the work timely and efficiently.

The quantity of mowing to be performed will be affected by the actual conditions that occur during the construction of the project. The quantity of mowing may be increased, decreased or eliminated entirely as directed. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

Measurement and Payment

Specialized Hand Mowing will be measured and paid for as the actual number of man hours worked while hand mowing along the surface of the ground, as directed. Where an area has been mowed more than once, as directed, separate measurement will be made each time the area is mowed.

Payment will be made under:

Pay Item Pay	Unit
Specialized Hand Mowing	MH

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.

EROSION, SILTATION, AND POLLUTION CONTROL

The Contractor shall exercise every reasonable precaution and take all necessary measures throughout the life of the project to prevent erosion, siltation, and pollution in accordance with Section 107-13 of the Standard Specifications. Silt fence and erosion control measures shall be installed in accordance with the plans for this project, Section

1605 of the Standard Specifications, and in locations directed by the Engineer or his representative.

SAFETY FENCE AND JURISDICTIONAL FLAGGING:

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 vegetation, culturally sensitive areas or water. The fence shall be installed prior to any land disturbing activities.

Interior boundaries for jurisdictional areas noted above shall be delineated by stakes and highly visible flagging.

Jurisdictional boundaries at staging areas, waste sites, or borrow pits, whether considered

Materials

(A) Safety Fencing

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.

(B) Boundary Flagging

Wooden stakes shall be 4 feet in length with a minimum nominal 3/4"x 1-3/4" cross section. The flagging shall be at least 1" in width. The flagging material shall be vinyl and shall be orange in color and highly visible.

Construction Methods

No additional clearing and grubbing is anticipated for the installation of this fence. The fence shall be erected to conform to the general contour of the ground.

(A) Safety Fencing

Posts shall be set at a maximum spacing of 10 ft., maintained in a vertical position and 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.

Place construction stakes to establish the location of the safety fence in accordance with Article 105-9 or Article 801-1 of the *Standard Specifications*. No direct pay will be made for the staking of the safety fence. All stakeouts for safety fence shall be considered incidental to the work being paid for as "Construction Surveying", except that where there is no pay item for construction surveying, all safety fence stakeout will be performed by state forces.

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.

(B) Boundary Flagging

Boundary flagging delineation of interior boundaries shall consist of wooden stakes on 25 feet maximum intervals with highly visible orange flagging attached. Stakes shall be installed a minimum of 6" into the ground. Interior boundaries may be staked on a tangent that runs parallel to buffer but must not encroach on the buffer at any location. Interior boundaries of hand clearing shall be identified with a different colored flagging to distinguish it from mechanized clearing.

Boundary flagging delineation of interior boundaries will be placed in accordance with Article 105-9 or Article 801-1 of the *Standard Specifications*. No direct pay will be made for delineation of the interior boundaries. This delineation will be considered incidental to the work being paid for as *Construction Surveying*, except that where there is no pay item or construction surveying the cost of boundary flagging delineation shall be included in the unit prices bid for the various items in the contract. Installation for delineation of all jurisdictional boundaries at staging areas, waste sites, or borrow pits shall consist of wooden stakes on 25 feet maximum intervals with highly visible orange flagging attached. Stakes shall be installed a minimum of 6" into the ground. Additional flagging may be placed on overhanging vegetation to enhance visibility but does not substitute for installation of stakes.

Installation of boundary flagging for delineation of all jurisdictional boundaries at staging areas, waste sites, or borrow pits shall be performed in accordance with Subarticle 230-4(B)(3)(d) or Subarticle 802-2(F) of the *Standard Specifications*. No direct pay will be made for this delineation, as the cost of same shall be included in the unit prices bid for the various items in the contract.

The Contractor shall be required to maintain alternative stakes and highly visible flagging 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 as the actual number of linear feet of polyethylene or polypropylene fence installed in place and accepted. Such payment will be full compensation including but not limited to 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

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

1/4" Hardware Cloth will be measured and paid for in accordance with Article 1632-5 of the *Standard Specifications*.

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

STANDARD SPECIAL PROVISION

AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS

(5-20-08)

Z-2

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

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

Payment will be made on any contract terminated pursuant to the special provision in accordance with Article 108-13(E), of the *North Carolina Department of Transportation Standard Specifications for Roads and Structures*, dated July 1, 2006.

NCDOT GENERAL SEED SPECIFICATION FOR SEED QUALITY

(5-17-11)

Z-3

Seed shall be sampled and tested by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory. When said samples are collected, the vendor shall supply an independent laboratory report for each lot to be tested. Results from seed so sampled shall be final. Seed not meeting the specifications shall be rejected by the Department of Transportation and shall not be delivered to North Carolina Department of Transportation warehouses. If seed has been delivered it shall be available for pickup and replacement at the supplier's expense.

Any re-labeling required by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory, that would cause the label to reflect as otherwise specified herein shall be rejected by the North Carolina Department of Transportation.

Seed shall be free from seeds of the noxious weeds Johnsongrass, Balloonvine, Jimsonweed, Witchweed, Itchgrass, Serrated Tussock, Showy Crotalaria, Smooth Crotalaria, Sicklepod, Sandbur, Wild Onion, and Wild Garlic. Seed shall not be labeled with the above weed species on the seed analysis label. Tolerances as applied by the Association of Official Seed Analysts will NOT be allowed for the above noxious weeds except for Wild Onion and Wild Garlic.

Tolerances established by the Association of Official Seed Analysts will generally be recognized. However, for the purpose of figuring pure live seed, the found pure seed and found germination percentages as reported by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory will be used. Allowances, as established by the NCDOT, will be recognized for minimum pure live seed as listed on the following pages.

The specifications for restricted noxious weed seed refers to the number per pound as follows:

<u>Restricted Noxious Weed</u>	<u>Limitations per Lb. Of Seed</u>	<u>Restricted Noxious Weed</u>	<u>Limitations per Lb. of Seed</u>
Blessed Thistle	4 seeds	Cornflower(Ragged Robin)	27 seeds
Cocklebur	4 seeds	Texas Panicum	27 seeds
Spurred Anoda	4 seeds	Bracted Plantain	54 seeds
Velvetleaf	4 seeds	Buckhorn Plantain	54 seeds
Morning-glory	8 seeds	Broadleaf Dock	54 seeds
Corn Cockle	10 seeds	Curly Dock	54 seeds
Wild Radish	12 seeds	Dodder	54 seeds
Purple Nutsedge	27 seeds	Giant Foxtail	54 seeds
Yellow Nutsedge	27 seeds	Horsenettle	54 seeds
Canada Thistle	27 seeds	Quackgrass	54 seeds
Field Bindweed	27 seeds	Wild Mustard	54 seeds
Hedge Bindweed	27 seeds		

Seed of Pensacola Bahiagrass shall not contain more than 7% inert matter, Kentucky Bluegrass, Centipede and Fine or Hard Fescue shall not contain more than 5% inert matter whereas a maximum of 2% inert matter will be allowed on all other kinds of seed. In addition, all seed shall not contain more than 2% other crop seed nor more than 1% total weed seed. The germination rate as tested by the North Carolina Department of Agriculture shall not fall below 70%, which includes both dormant and hard seed. Seed shall be labeled with not more than 7%, 5% or 2% inert matter (according to above specifications), 2% other crop seed and 1% total weed seed.

Exceptions may be made for minimum pure live seed allowances when cases of seed variety shortages are verified. Pure live seed percentages will be applied in a verified shortage situation. Those purchase orders of deficient seed lots will be credited with the percentage that the seed is deficient.

FURTHER SPECIFICATIONS FOR EACH SEED GROUP ARE GIVEN BELOW:

Minimum 85% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 83% pure live seed will not be approved.

Sericea Lespedeza
Oats (seeds)

Minimum 80% pure live seed; maximum 1% total weed seed; maximum 2% total other crop; maximum 144 restricted noxious weed seed per pound. Seed less than 78% pure live seed will not be approved.

Tall Fescue (all approved varieties)	Bermudagrass
Kobe Lespedeza	Browntop Millet
Korean Lespedeza	German Millet – Strain R
Weeping Lovegrass	Clover – Red/White/Crimson
Carpetgrass	

Minimum 78% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 76% pure live seed will not be approved.

Common or Sweet Sundangrass

Minimum 76% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 74% pure live seed will not be approved.

Rye (grain; all varieties)
Kentucky Bluegrass (all approved varieties)
Hard Fescue (all approved varieties)
Shrub (bicolor) Lespedeza

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 noxious weed seed per pound. Seed less than 70% pure live seed will not be approved.

Centipedegrass	Japanese Millet
Crownvetch	Reed Canary Grass
Pensacola Bahiagrass	Zoysia
Creeping Red Fescue	

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 5% inert matter; maximum 144 restricted noxious weed seed per pound.

Barnyard Grass
Big Bluestem
Little Bluestem

Bristly Locust
Birdsfoot Trefoil
Indiangrass
Orchardgrass
Switchgrass
Yellow Blossom Sweet Clover

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 100**6** for 1005.

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

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

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

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

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

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

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

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

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

Page 10-200, Subarticle 1080-14(B), change reference to ASTM D33**59**

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.

END

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.

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”.

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 2560 24.2%

Cumberland 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 1520 18.3%

Gaston County

Mecklenburg County

Union County

Goals for Female

Participation in Each Trade

(Statewide) 6.9%

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 of 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 n or 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.

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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.

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

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

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

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

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

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

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

Records and Reports

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

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

Trainee Interviews

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

Trainee Wages

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

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

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

Achieving or Failing to Meet Training Goals

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

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

Measurement and Payment

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

TRAFFIC CONTROL PROVISIONS

TRAFFIC CONTROL

(10-21-08)

RWZ-1

Maintain traffic in accordance with Divisions 10, 11 and 12 of the *Standard Specifications* and the following provisions:

Use a lane closure (refer to the *Roadway Standard Drawings* Nos. 1101.02, 1101.11, 1110.02, 1130.01 and details for the Advance Work Zone signing in contract) or a slow-moving operation as shown in details of this contract. Use a moving operation only if the minimum speed maintained at all times is 3 mph with no stops that narrow or close a lane of travel. If the moving operation is progressing slower than 3 mph at any time, install a lane closure. Maintain the existing traffic pattern at all times, except in the immediate work zone where lane closures are allowed as determined by the Engineer.

Refer to Attached Details and the *Roadway Standard Drawings* Nos. 1101.02, 1101.03, 1101.04, 1101.05, 1101.11, 1110.01, 1110.02, 1115.01, 1130.01, 1135.01, 1145.01, 1150.01, 1165.01, 1170.01 and 1180.01 when closing a lane of travel in a stationary work zone such as pavement patching resurfacing, or pavement marking removal. Properly ballasted cones may be used instead of drums for lane closures during daylight hours. However, drums are required for the upstream taper portion of lane closures in all applications. The stationary work zone shall be a maximum of 3 miles in length at any given time unless otherwise directed by the Engineer. A pilot vehicle operation may be used in conjunction with flaggers and the appropriate pilot vehicle warning signing as directed by the Engineer. During periods of construction inactivity, return the traffic pattern to the existing alignment and remove or cover any work zone signs. When covering work zone signs, use an opaque material that prevents reading of the sign at night by a driver using high beam headlights. Use material, which does not damage the sign sheeting. Replace any obliterated markings as required by other sections of the *Standard Specifications* and the Engineer.

When personnel and equipment are working on the shoulder adjacent to an undivided facility and within 5 feet of an open travel lane, close the nearest open travel lane using the *Roadway Standard Drawings* No. 1101.02 unless the work area is protected by barrier or guardrail. When personnel and equipment are working on the shoulder, adjacent to a divided facility and within 10 feet of an open travel lane, close the nearest open travel lane using the *Roadway Standard Drawings* No. 1101.02 unless the work area is protected by barrier or guardrail. When personnel and equipment are working within a lane of travel of an undivided or divided facility, close the lane according to the traffic control plans, *Roadway Standard Drawings* or as directed by the Engineer. Conduct the work so that all personnel and equipment remain within the closed travel lane. Do not work simultaneously, on both sides of an open travel way, within the same location, on a two-lane, two-way road. Do not perform work involving heavy equipment within 15 feet of the edge of travel way when work is being performed behind a lane closure on the opposite side of the travel way. Perform work only when weather and visibility conditions allow safe operations as directed by the Engineer.

Do not exceed a difference of 2 inches in elevation between open lanes of traffic for nominal lifts of 1.5 inches. Install advance warning UNEVEN LANES signs (W8-11 at 48" X 48") 500 feet in advance and a minimum of once every half mile throughout the uneven area.

Backfill at a 6:1 slope up to the edge and elevation of existing pavement in areas adjacent to an open travel lane that has an edge of pavement drop-off as follows:

- (A) Drop-off that exceeds 2 inches on roadways with posted speed limits of 45 mph or greater
- (B) Drop-off that exceeds 3 inches on roadways with posted speed limit less than 45 mph.

Backfill the unacceptable drop-off with suitable compacted material, as approved by the Engineer, at no expense to the Department. This work is not considered part of shoulder reconstruction.

When utilizing a slow-moving operation for such items as pavement marking placement, pavement marker installation and pesticide spraying, the slow moving operation caravan shall consist, as a minimum, of the vehicles and devices shown on the Moving Operation Caravan Detail(s) herein. Traffic cones may be used when necessary to provide additional protection of wet pavement markings. Ballast all traffic cones so they will not be blown over by traffic.

Submit a written sequence of operation for all maps to the Engineer at the first pre-construction meeting for approval by the Engineer. A pproved sequence can not be altered without written permission of the Engineer.

Notify the Engineer **and the traffic engineer** 48 hours before milling or resurfacing will interfere with the existing Signal Loops. Loops may need to be placed in milled surface before resurfacing occurs. Coordinate all signal loop operations with the Engineer.

Notify the Engineer 15 consecutive calendar days before resurfacing a bridge or its approaches. Patch and make repairs to bridge surface and its approaches before resurfacing occurs. Coordinate all operations on the bridge and its approaches with the Engineer.

Notify the Engineer 48 hours before resurfacing the areas of existing pavement that require patching. Patch these areas before resurfacing occurs. Allow full depth asphalt patching to cool to the point of supporting traffic without displacement or rutting before reopening closed lane. Coordinate the resurfacing operations of the patched areas with the Engineer.

During a resurfacing only operation, bring all newly resurfaced lanes to the same elevation within 72 hours.

For partial or wheel track milling operations on two-way, two-lane facilities, mill and pave back by the end of each work day. For partial or wheel track milling operations on

multi-lane facilities, the lane being milled may be left closed and paved back within 72 hours.

The following options are acceptable during Resurfacing and milling operations on two-way, two-lane facilities when the entire roadway or entire lane is to be milled:

- (A) Mill a single lane and pave back by the end of each work day.
- (B) Mill the entire width of roadway and pave back within 72 hours.

The following options are available during Resurfacing and milling operations on multi-lane facilities when all lanes or a single lane in one direction are to be milled:

- (A) Mill the entire width of pavement for all lanes to be milled in any direction daily and pave back within 72 hours.
- (B) Mill a single lane and pave back by the end of each work day.
- (C) Mill a single lane, leave a lane closure in and pave back within 72 hours.

When resurfacing facilities with ramps, resurface the ramp and gore area of the ramp as directed by the Engineer. A transverse joint shall be placed on the ramp at the terminal point of the gore. Newly resurfaced lanes on the main roadway and the ramp shall be at the same elevation where traffic merges.

Slope the pavement at the beginning and ending of the daily milling operation as directed by the Engineer. Sweep and remove all milled material from the roadway as soon as the daily milling operation is completed. Continue milling operations until the particular section of roadway being milled is complete. Remove any existing pavement adjacent to the milled area that has been damaged, and replace with patch material as directed by the Engineer.

Maintain vehicular access in accordance with Section 1101-13 of the *Standard Specifications* using suitable backfill material approved by the Engineer.

Operate equipment and conduct operations in the same direction as the flow of traffic. Do not cross medians with equipment, except at properly designated interchanges.

Review and record the existing pavement markings and markers prior to resurfacing. Use the record of existing pavement markings and markers in conjunction with the *Roadway Standard Drawings* to re-establish the proposed pavement markings and markers unless otherwise directed by the Engineer.

Provide appropriate lighting in accordance with Section 1413 of the *Standard Specifications*.

Remove existing pavement markers in preparation for paving. Repair any pavement damage due to existing pavement marker removal prior to the end of the work day. Dispose of existing pavement markers as directed by the Engineer. No direct payment will be made for this work, as it will be incidental to the paving operation.

Payment will be made for the traffic control items that have been included in the contract. No direct payment will be made for providing other traffic control as required herein, as the cost of same will be considered incidental to the work being paid for under those various traffic control items that have been included. Where the Contractor maintains traffic as required herein but no specific pay items have been included in the contract, all associated costs will be considered incidental to the work being paid for under the various items in the contract.

WORK ZONE SIGNING

(10-21-08)

RWZ-3

Description

Install and maintain signing in accordance with Divisions 11 and 12 of the *Standard Specifications*, the *Roadway Standard Drawings* and the following provisions:

Furnish, install, maintain, and remove advance warning work zone signs and any required lane closure signing.

Furnish, install, and maintain general work zone warning signs for resurfacing and milling such as ROUGH ROAD (W8-8 at 48" X 48") (for milling only), UNEVEN LANES (W8-11 at 48" X 48"), LOW SHOULDER (W8-9 at 48" X 48"), LOW / SOFT SHOULDER (DOT No. 16-79860 at 48" X 48"), UNMARKED PAVEMENT AHEAD (DOT No. 116087130 at 48" X 48") and DO NOT PASS (R4-1 at 24" X 30"). When construction is completed in any area of the project, relocate signs to the next work site, as directed by the Engineer. Remove these signs at the completion of the project.

All work zone signs may be portable.

Construction Methods

(A) General

Install all warning work zone signs before beginning work on a particular map. If signs are installed three days prior to the beginning of work on a particular map, cover the signs until the work begins. Install each work zone warning sign separately and not on the same post or stand with any other sign except where an advisory speed plate or directional arrow is used.

(B) Advance Warning Work Zone Signs

Install advance warning work zone signs (see attached Details and the *Roadway Standard Drawings* Nos. 1101.02 and 1110.01 and advance signing details) prior to beginning of work and remove upon final completion of the project. If there is a period of construction inactivity longer than two weeks, remove or cover advance warning work zone signs. Uncover advance warning work zone signs no more than 3 days before work resumes. All other operations could be suspended upon failure to comply with the above requirements. Such suspended operations would not be resumed until the above requirements are fulfilled.

(C) Lane Closure Work Zone Signs

Install any required lane closure signing needed during the life of the project in accordance with the *Roadway Standard Drawings* Nos. 1101.02, 1101.11 and 1110.02.

(D) General Work Zone Warning Signs

Install general work zone warning signs for resurfacing and milling such as ROUGH ROAD (W8-8 at 48" X 48") (for milling only), UNEVEN LANES (W8-11 at 48" X 48"), LOW SHOULDER (W8-9 at 48" X 48") and LOW / SOFT SHOULDER (W8-9B at 48" X 48") at 1 mile intervals starting at a minimum of 500 feet in advance of the condition for both directions of travel (undivided roadways only) and at any other points determined by the Engineer.

Install the LOW SHOULDER (W8-9 at 48" X 48") or LOW / SOFT SHOULDER (DOT No. 16-79860 at 48" X 48") signs prior to any resurfacing in an area where shoulder construction will be performed.

Install general work zone warning signs such as UNMARKED PAVEMENT AHEAD (DOT No. 116087130 at 48" X 48") and DO NOT PASS (R4-1 at 24" X 30") alternately at 1/2 mile intervals starting at a minimum of 500 feet in advance of the condition for both directions of travel (undivided roadways only) and at any other points determined by the Engineer. Install signs prior to the obliteration of any pavement markings.

Measurement and Payment

Payment will be made for the work zone signing items that have been included in the contract. No direct payment will be made for providing other work zone signing as required herein, as the cost of same will be considered incidental to the work being paid for under those various work zone signing items that have been included. Where the Contractor provides work zone signing as required herein but no specific pay items have been included in the contract, all associated costs will be considered incidental to the work being paid for under the various items in the contract.

TIME LIMITATION FOR PAVEMENT MARKINGS AND MARKERS ON NEWLY RESURFACED AREAS

(12-18-07) (Rev. 08-17-10)

RWZ-4

Markings: Two-Lane, Two-Way Facilities

For all two-lane, two-way facilities, place all edge lines and other symbols within 30 calendar days after they have been obliterated by the resurfacing operation.

Markings: All Facilities

The observation period for pavement markings on a specific map are subject to all requirements as specified in the Project Special Provision entitled "PAVEMENT MARKING LINES" contained elsewhere in the contract and begins with the satisfactory completion of all pavement markings required on that specific map.

Any portion of stop bars that are obliterated at intersections of a multilane roadway and all its approaches shall be replaced by the end of each work day prior to opening the lane to traffic. Any portion of stop bars that are obliterated at 2-lane 2-way roadway intersections shall be replaced by the end of 5th calendar day.

Prior to opening the lane(s) to traffic, all pavement markings that are obliterated by milling should be replaced as specified in Subarticle 1205-3(D) Time Limitations for Replacement of the *Standard Specifications* or as stated herein.

Final pavement marking applications of paint shall be placed in 2 applications of 15 mils wet each. Each application of paint pavement marking lines will be measured and paid for as the actual number of linear feet of pavement marking lines that have been satisfactorily placed and accepted by the Engineer.

Markers: All Facilities

Install permanent pavement markers within 60 calendar days after completing the resurfacing on each map.

ROADWAY STANDARD DRAWINGS FOR PAVEMENT MARKINGS AND MARKERS

(7-18-06)

RWZ-5

Use the following in conjunction with the *Standard Specifications*:

Standard Pavement Markings	<i>Roadway Standard Drawings:</i> 1205.01, 1205.02, 1205.03, 1205.04, 1205.05, 1205.06, 1205.07, 1205.08, 1205.09, 1205.10, 1205.11, 1205.12
Raised Pavement Markers	<i>Roadway Standard Drawings:</i> 1205.12, 1250.01, 1251.01
Snowplowable Pavement Markers	<i>Roadway Standard Drawings:</i> 1250.01, 1253.01

GEOTECHNICAL SPECIAL PROVISION

SEGMENTAL GRAVITY RETAINING WALLS

(9-21-10)

1.0 GENERAL

A. Description

A segmental gravity retaining wall consists of segmental retaining wall (SRW) units with an aggregate footing and is typically constructed in accordance with a standard segmental gravity retaining wall drawing (Standard Drawing No. 453.02 or 453.03). Design and construct segmental gravity retaining walls based on actual elevations and dimensions in accordance with the contract and accepted submittals. For this provision, “block wall” refers to a segmental gravity retaining wall and “blocks” refer to SRW units.

B. Standard Block Walls

A standard block wall is defined as a segmental gravity retaining wall constructed in accordance with a standard segmental gravity retaining wall drawing. SRW units for standard block walls are approved for either 2 or 4 ft (0.6 or 1.2 m) maximum design heights where the design height is as shown on the plans. Obtain the list of approved SRW Units with maximum design heights from:

www.ncdot.org/doh/preconstruct/highway/geotech/seggravwalls

2.0 SUBMITTALS

A. Block Wall Construction Submittal

The plans typically show a plan view, typical sections, details, notes and an elevation or profile view (wall envelope) for each block wall. Before beginning block wall design or construction, survey existing ground elevations at the wall face and other elevations in the vicinity of block walls as needed. Based on these elevations, finished grades and actual block wall dimensions and details, submit wall envelopes for review and acceptance. Use the accepted wall envelopes for design and construction.

B. Block Wall Design Submittal

If the plans do not include a standard segmental gravity retaining wall drawing, submit 11 hard copies of working drawings and 3 hard copies of design calculations and an electronic copy (PDF on CD or DVD) of each for the block wall design submittal. Provide the submittal at least 30 calendar days before beginning block wall construction. Do not begin block wall construction until the design submittal is accepted.

Design block walls in accordance with the plans and Article 11.11 of the *AASHTO LRFD Bridge Design Specifications* unless otherwise required. Also,

design block walls to meet minimum clearances and maximum wall batter shown on the plans. Do not locate blocks or footings beyond right-of-way or easement lines.

Use no. 57 stone for aggregate footings beneath blocks. Use 10 inch (250 mm) thick footings that are continuous at steps and extend a minimum of 6" (150 mm) in front of and 9" (225 mm) behind the bottom row of blocks. Unless required otherwise on the plans, embed bottom of footings a minimum of 18" (450 mm) below where finished grade intersects the front face of block walls. When a note on plans requires a drain pipe, use a 4" (100 mm) dia. continuous perforated pipe in the no. 57 stone at the back of footings.

Fill block core spaces with no. 57 stone, if applicable. Assume a unit weight of 100 pcf (15.7 kN/m³) for stone. Also, fill between and behind blocks with no. 57 stone for a horizontal distance of at least 12" (300 mm). Place separation fabric between no. 57 stone and backfill or natural ground. Also, place separation fabric between no. 57 stone and overlying fill or pavement section with the exception of when concrete pavement is placed directly on the stone.

Use SRW cap units at top of walls. Step top of walls as shown on the plans and double stack SRW cap units at steps such that cap blocks are continuous at steps. Attach cap blocks with adhesive and extend top of walls a minimum of 4" (100 mm) above where finished grade intersects the back of block walls. When single faced precast concrete barriers are required in front of block walls, fill between barriers and wall faces with no. 57 stone.

Submit working drawings and design calculations for review and acceptance in accordance with Article 105-2 of the *Standard Specifications*. Submit working drawings showing plan views, wall profiles with required resistances, typical sections, separation fabric locations and details of footings, blocks, etc. If necessary, include details on working drawings for obstructions extending through walls. Submit design calculations for each wall section with different surcharge loads, geometry or material parameters. When using a software program for design, provide a hand calculation verifying the analysis of the tallest wall section. Have block walls designed, detailed and sealed by a Professional Engineer registered in North Carolina.

3.0 MATERIALS

A. Segmental Retaining Wall (SRW) Units

Provide certifications in accordance with Article 106-3 of the *Standard Specifications*. Provide Type 1 Certified Mill Test Reports or Type 4 Certified Test Reports for all block properties with the exception of durability. When a note on plans requires freeze-thaw durable blocks, provide Type 2 Typical Certified Mill Test Reports or Type 5 Typical Certified Test Reports for durability.

Do not mix blocks from different vendors on the same block wall. Use approved SRW units for standard block walls. For details and dimensions of approved SRW units, see the website shown elsewhere in this provision.

Unless required otherwise on the plans, provide blocks with a minimum depth (front face to back face) of 12" (300 mm), a vertical straight face and a concrete gray color with no tints, dyes or pigments. Before beginning block production, obtain approval of sample blocks of the size, type, face and color proposed for the project.

Load, transport, unload and store blocks such that they are kept clean and free of damage. Damaged blocks with excessive discoloration, chips or cracks as determined by the Engineer will be rejected. Label each pallet of blocks with the information listed in Article 1077-13 of the *Standard Specifications*. Do not transport blocks away from the casting yard until the concrete strength reaches 4000 psi (27.6 MPa) and a period of at least 5 days elapses after casting unless otherwise approved.

Use blocks meeting the requirements of Section 1040 of the *Standard Specifications* and ASTM C1372 with the exception of absorption, compressive strength and unit height requirements. Test blocks in accordance with ASTM C140 with the exception of the number of units in a lot. For testing blocks, a lot is defined as 5000 units or a single day's production, whichever is less, and at least 6 blocks are required per lot.

Provide blocks with a maximum absorption of 5%. For standard block walls, provide blocks with a unit height within 1/16 inch (2 mm) of the dimension for the approved SRW unit. For all other block walls, provide blocks with a unit height within 1/16 inch (2 mm) of the dimension shown in the accepted submittals.

A minimum compressive strength of 4000 psi (27.6 MPa) at 28 days is required for blocks with the exception of freeze-thaw durable blocks. When a note on plans requires freeze-thaw durable blocks, a minimum compressive strength of 5500 psi (37.9 MPa) at 28 days is required.

Test freeze-thaw durable blocks in accordance with ASTM C1262. Test specimens in water. Freeze-thaw durable blocks are acceptable if the weight loss of each of 4 of the 5 specimens after 150 cycles does not exceed 1% of its initial weight.

B. SRW Cap Units

Use cap blocks meeting the requirements of the SRW units above with the exception of the minimum block depth. Use cap blocks with a minimum depth (front face to back face) of 8" (200 mm).

C. No. 57 Stone

Use standard size no. 57 stone meeting the requirements of Class VI Select Material in accordance with Section 1016 of the *Standard Specifications*.

D. Wall Drainage Systems

Wall drainage systems consist of perforated polyvinyl chloride (PVC) plastic pipes and outlet components. Use pipe and outlet materials meeting the requirements of subsurface drainage materials in accordance with Section 1044 of the *Standard Specifications*.

E. Separation Fabrics

Use separation fabrics meeting the requirements of Type 2 Engineering Fabric in accordance with Section 1056 of the *Standard Specifications*.

F. Adhesive

Provide adhesive in accordance with the block vendor's recommendations. Store adhesive in accordance with the manufacturer's instructions.

G. Joint Materials

Use joint materials in accordance with Section 1028 of the *Standard Specifications*.

4.0 CONSTRUCTION METHODS

Control drainage during construction in the vicinity of block walls. Direct run off away from block walls, no. 57 stone and backfill. Contain and maintain stone and backfill and protect material from erosion.

Perform all necessary clearing and grubbing in accordance with Section 200 of the *Standard Specifications*. Excavate as necessary for block walls in accordance with the plans and accepted submittals. Notify the Engineer when foundation excavation is complete. Do not place no. 57 stone for footings until obtaining approval of the excavation depth and foundation material. If a drain pipe is required, construct wall drainage systems as shown on the plans and accepted submittals and in accordance with Section 815 of the *Standard Specifications*. Provide drain pipes with positive drainage towards outlets. Compact no. 57 stone with a vibratory compactor to the satisfaction of the Engineer.

Place blocks with no negative wall batter (wall face leaning forward) such that the final position is as shown on the plans and accepted submittals. Stagger vertical block joints to create a running bond when possible unless shown otherwise on the plans and accepted submittals. Place blocks with a maximum joint width of 1/2 inch (13 mm). Construct block walls with a horizontal tolerance of 3/4 inch (19 mm) when measured with a 10 ft (3 m) straight edge and a vertical tolerance within 2 degrees of the wall batter shown on the plans and accepted submittals.

Place no. 57 stone between and behind blocks in 8 to 10 inch (200 to 250 mm) thick lifts. Compact stone with hand operated compaction equipment. Overlap separation fabric a minimum of 18" (450 mm) at seams. Backfill for wall construction behind no. 57 stone in accordance with Article 410-8 of the *Standard Specifications*.

Place cap blocks as shown on the plans and accepted submittals. Set cap blocks with a 1/2 to 1-1/2 inch (13 to 38 mm) overhang. Do not install cap blocks if the surface to receive caps is wet or frozen or the air temperature measured at the wall in the shade away from artificial heat is below 40°F (4°C). Before applying adhesive, clean the surface the caps will adhere to and ensure it is dry and free of oil, grease, dust and debris. Attach cap blocks using adhesive in accordance with the manufacturer's instructions.

Seal joints above and behind block walls between blocks and ditches with joint sealer.

5.0 MEASUREMENT AND PAYMENT

Segmental Gravity Retaining Walls will be measured and paid for in square feet (meters). Block walls will be measured as the exposed face area with the wall height equal to the difference between the top and bottom of wall elevation. The top of wall elevation is defined as the top of cap blocks. The bottom of wall elevation is as shown on the plans and no payment will be made for portions of block walls below bottom of wall elevations.

The contract unit price for *Segmental Gravity Retaining Walls* will be full compensation for providing design, submittals, labor, tools, equipment and block wall materials, excavating, backfilling, hauling and removing excavated materials and providing footings, blocks, no. 57 stone, wall drainage systems, fabrics, cap blocks and any incidentals necessary to design and construct block walls in accordance with this provision.

The contract unit price for *Segmental Gravity Retaining Walls* does not include the cost for fences, handrails, ditches, guardrail and barriers associated with block walls as payment for these items will be made elsewhere in the contract.

Payment will be made under:

Pay Item	Pay Unit
Segmental Gravity Retaining Walls	Square Foot (Meter)

**Project Special Provisions
Structure**

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Bucky Charles Hunt
9/27/11

PROJECT SPECIAL PROVISIONS **STRUCTURE**

PROJECT BD-5112I

CATAWBA COUNTY

FALSEWORK AND FORMWORK

(4-1-11)

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.

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

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.

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 on concrete girders with thin top flanges. 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.

When staged construction of the bridge deck is required, detail falsework and forms for screed and fluid concrete loads to be independent of any previous deck pour components when the mid-span girder deflection due to deck weight is greater than $\frac{3}{4}$ ".

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.

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)		

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.

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.

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.

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.

SUBMITTAL OF WORKING DRAWINGS

(4-1-11)

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. Either the Structure Design Unit or the Geotechnical Engineering Unit or both units will jointly 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, Structure Design Unit contacts or the Geotechnical Engineering Unit contacts 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 Structure Design Unit, use the following addresses:

Via US mail:

Mr. G. R. Perfetti, P. E.
State Bridge Design Engineer
North Carolina Department
of Transportation
Structure Design Unit
1581 Mail Service Center
Raleigh, NC 27699-1581

Attention: Mr. P. D. Lambert, P. E.

Via other delivery service:

Mr. G. R. Perfetti, P. E.
State Bridge Design Engineer
North Carolina Department
of Transportation
Structure Design Unit
1000 Birch Ridge Drive
Raleigh, NC 27610

Attention: Mr. P. D. Lambert, P. E.

Submittals may also be made via email.

Send submittals to:

plambert@ncdot.gov (Paul Lambert)

Send an additional e-copy of the submittal to the following address:

jgaitner@ncdot.gov (James Gaither)

For submittals to the Geotechnical Engineering Unit, use the following addresses:

For projects in Divisions 1-7, use the following Eastern Regional Office address:

Via US mail:

Mr. K. J. Kim, Ph. D., P. E.
Eastern Regional Geotechnical
Manager
North Carolina Department
of Transportation
Geotechnical Engineering Unit
Eastern Regional Office
1570 Mail Service Center
Raleigh, NC 27699-1570

Via other delivery service:

Mr. K. J. Kim, Ph. D., P. E.
Eastern Regional Geotechnical
Manager
North Carolina Department
of Transportation
Geotechnical Engineering Unit
Eastern Regional Office
3301 Jones Sausage Road, Suite 100
Garner, NC 27529

For projects in Divisions 8-14, use the following Western Regional Office address:

Via US mail:

Mr. John Pilipchuk, L. G., P. E.
Western Regional Geotechnical
Manager
North Carolina Department
of Transportation
Geotechnical Engineering Unit
Western Regional Office
5253 Z Max Boulevard
Harrisburg, NC 28075

Via other delivery service:

Mr. John Pilipchuk, L. G., P. E.
Western Region Geotechnical
Manager
North Carolina Department
of Transportation
Geotechnical Engineering Unit
Western Regional Office
5253 Z Max Boulevard
Harrisburg, NC 28075

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:

Paul Lambert
(919) 250 – 4041
(919) 250 – 4082 facsimile
plambert@ncdot.gov

Secondary Structures Contacts:

James Gaither (919) 250 – 4042
David Stark (919) 250 – 4044

Eastern Regional Geotechnical Contact (Divisions 1-7):

K. J. Kim
(919) 662 – 4710
(919) 662 – 3095 facsimile
kkim@ncdot.gov

Western Regional Geotechnical Contact (Divisions 8-14):

John Pilipchuk
(704) 455 – 8902
(704) 455 – 8912 facsimile
jpilipchuk@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 Structure Design Unit and/or the Geotechnical Engineering Unit.

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

Unless otherwise required, submit one set of supporting calculations to either the Structure Design Unit or the Geotechnical Engineering Unit unless both units require submittal copies in which case submit a set of supporting calculations to each unit. Provide additional copies of any submittal as directed.

STRUCTURE SUBMITTALS

Submittal	Copies Required by Structure Design Unit	Copies Required by Geotechnical Engineering Unit	Contract Reference Requiring Submittal ¹
Arch Culvert Falsework	5	0	Plan Note, SN Sheet & “Falsework and Formwork”
Box Culvert Falsework ⁷	5	0	Plan Note, SN Sheet & “Falsework and Formwork”
Cofferdams	6	2	Article 410-4
Evazote Joint Seals ⁶	9	0	“Evazote Joint Seals”
Expansion Joint Seals (hold down plate type with base angle)	9	0	“Expansion Joint Seals”
Expansion Joint Seals (modular)	2, then 9	0	“Modular Expansion Joint Seals”
Expansion Joint Seals (strip seals)	9	0	“Strip Seals”
Falsework & Forms ² (substructure)	8	0	Article 420-3 & “Falsework and Formwork”
Falsework & Forms (superstructure)	8	0	Article 420-3 & “Falsework and Formwork”
Girder Erection over Railroad	5	0	Railroad Provisions
Maintenance and Protection of Traffic Beneath Proposed Structure	8	0	“Maintenance and Protection of Traffic Beneath Proposed Structure at Station ____”
Metal Bridge Railing	8	0	Plan Note
Metal Stay-in-Place Forms	8	0	Article 420-3

Metalwork for Elastomeric Bearings ^{4,5}	7	0	Article 1072-10
Miscellaneous Metalwork ^{4,5}	7	0	Article 1072-10
Optional Disc Bearings ⁴	8	0	“Optional Disc Bearings”
Overhead Signs	13	0	Article 903-3(C) & Applicable Provisions
Placement of Equipment on Structures (cranes, etc.)	7	0	Article 420-20
Pot Bearings ⁴	8	0	“Pot Bearings”
Precast Concrete Box Culverts	2, then 1 reproducible	0	“Optional Precast Reinforced Concrete Box Culvert at Station ____”
Precast Retaining Wall Panels	10	1	Article 1077-2
Prestressed Concrete Cored Slab (detensioning sequences) ³	6	0	Article 1078-11
Prestressed Concrete Deck Panels	6 and 1 reproducible	0	Article 420-3
Prestressed Concrete Girder (strand elongation and detensioning sequences)	6	0	Articles 1078-8 and 1078-11
Removal of Existing Structure over Railroad	5	0	Railroad Provisions
Revised Bridge Deck Plans (adaptation to prestressed deck panels)	2, then 1 reproducible	0	Article 420-3
Revised Bridge Deck Plans (adaptation to modular expansion joint seals)	2, then 1 reproducible	0	“Modular Expansion Joint Seals”
Sound Barrier Wall Casting Plans	10	0	Article 1077-2 & “Sound Barrier Wall”
Sound Barrier Wall Steel Fabrication Plans ⁵	7	0	Article 1072-10 & “Sound Barrier Wall”

Structural Steel ⁴	2, then 7	0	Article 1072-10
Temporary Detour Structures	10	2	Article 400-3 & “Construction, Maintenance and Removal of Temporary Structure at Station _____”
TFE Expansion Bearings ⁴	8	0	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.

GEOTECHNICAL SUBMITTALS

Submittal	Copies Required by Geotechnical Engineering Unit	Copies Required by Structure Design Unit	Contract Reference Requiring Submittal ¹
Drilled Pier Construction Plans ²	1	0	“Drilled Piers”
Crosshole Sonic Logging (CSL) Reports ²	1	0	“Crosshole Sonic Logging” & “Drilled Piers”
Pile Driving Equipment Data Form ^{2,3}	1	0	Article 450-5 & “Piles”
Pile Driving Analyzer (PDA) Reports ²	1	0	“Pile Driving Analyzer” & “Piles”
Retaining Walls ⁴	8	2	Applicable Provisions
Contractor Designed Shoring ⁴	7	2	“Temporary Shoring”, “Anchored Temporary Shoring” & “Temporary Soil Nail Walls”

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 refer to the *Standard Specifications*.
2. Submit one hard copy of submittal to the Resident or Bridge Maintenance Engineer. Submit a second copy of submittal electronically (PDF via email) or by facsimile, US mail or other delivery service to the Geotechnical Engineering Unit. Electronic submission is preferred.
3. Download Pile Driving Equipment Data Form from the following link:
www.ncdot.org/doh/preconstruct/highway/geotech/formdet/
See second page of form for submittal instructions.
4. Electronic copies of submittal are required. See referenced provision.

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.

GROUT FOR STRUCTURES

(7-12-07)

1.0 DESCRIPTION

This special provision addresses grout for use in structures, including continuous flight auger (CFA) piles, micropiles, soil nail and anchored retaining walls and backfilling crosshole sonic logging (CSL) tubes or grout pockets, shear keys, dowel holes and recesses for cored slabs and box beams. This provision does not apply to grout placed in post-tensioning ducts for bridge beams, girders, or decks. Provide grout composed of portland

cement, water and at the Contractor's option, fine aggregate and/or pozzolan. If necessary, use set controlling admixtures. Proportion, mix and place grout in accordance with the plans, the applicable section of the *Standard Specifications* or special provision for the application and this provision.

2.0 MATERIALS

Refer to Division 10 of the *Standard Specifications*:

Item	Article
Portland Cement	1024-1
Water	1024-4
Fine Aggregate	1014-1
Fly Ash	1024-5
Ground Granulated Blast Furnace Slag	1024-6
Admixtures	1024-3

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

3.0 REQUIREMENTS

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

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

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

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

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

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

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

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

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

4.0 SAMPLING AND PLACEMENT

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

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

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

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

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

5.0 MISCELLANEOUS

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

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"
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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"
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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

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.

VERTICAL CONCRETE BARRIER RAIL

(1-27-10)

Use Vertical Concrete Barrier Rail in accordance with the concrete barrier rail provisions of Section 460 of the Standard Specifications. Replace references to “concrete barrier rail” with “vertical concrete barrier rail.”

Payment will be made under:

Vertical Concrete Barrier Rail.....Linear Feet (Meter)

DRILLED PIERS

(7-19-11)

6.0 DESCRIPTION

Construct drilled piers consisting of cast-in-place reinforced concrete cylindrical sections in excavated holes typically stabilized with casings or slurry. Provide permanent casings, standard penetration tests, integrity testing and assistance with the shaft inspection device as noted on the plans. Construct drilled piers with the required resistances and dimensions in accordance with the contract and accepted submittals. Use a prequalified Drilled Pier Contractor to construct drilled piers.

Define “excavation” and “hole” as a drilled pier excavation and “pier” as a drilled pier. Define “rock” as a continuous intact natural material in which the penetration rate with a rock auger is less than 2" (50 mm) per 5 minutes of drilling at full crowd force. This definition excludes discontinuous loose natural materials such as boulders and man-made materials such as concrete, steel, timber, etc. and is not for measurement and payment purposes. See Section 7.0 of this provision for measurement and payment of drilled piers.

7.0 MATERIALS

Refer to Division 10 of the *Standard Specifications*:

Item	Section
Portland Cement Concrete, Class Drilled Pier	1000
Reinforcing Steel	1070

Use standard size No. 78M coarse aggregate for Drilled Pier concrete.

Provide Type 3 material certifications in accordance with Article 106-3 of the *Standard Specifications* for permanent casings and roller, chair, steel pipe and cap materials. Store steel materials on blocking at least 12" (300 mm) above the ground and protect it at all times from damage; and when placing in the work make sure it is free from dirt, dust, loose mill scale, loose rust, paint, oil or other foreign materials. Load, transport, unload and store drilled pier materials so materials are kept clean and free of damage.

A. Steel Casing

Define “casing” as a temporary or permanent casing. Use smooth non-corrugated clean watertight steel casings of ample strength to withstand handling and installation stresses and pressures imposed by concrete, earth, backfill and fluids.

1. Temporary Casings

Provide temporary casings with nominal wall thicknesses of at least 0.375" (9 mm) and outside diameters equal to or larger than the design pier diameters for which casings are used.

2. Permanent Casings

Use permanent casings with yield strengths of at least 36 ksi (250 MPa) and nominal wall thicknesses that meet the following requirements.

MINIMUM PERMANENT CASING WALL THICKNESS

Casing Diameter	Nominal Wall Thickness
< 48" (1220 mm)	0.375" (9 mm)
48" (1220 mm) - 78" (1982 mm)	0.500" (12 mm)
> 78" (1982 mm)	0.625" (16 mm)

Provide permanent casings with outside diameters equal to the design pier diameters for which casings are used unless larger diameter permanent casings are approved.

B. Slurry

Define “slurry” as bentonite or polymer slurry. Mix bentonite clay or synthetic polymer with water to form bentonite or polymer slurry.

1. Bentonite Slurry

Provide bentonite slurry that meets the following requirements.

BENTONITE SLURRY REQUIREMENTS¹

Property	ANSI/API RP ² 13B-1	Requirement
Density ³ (Mud Weight)	Section 4	64.3 – 72.0 lb/cf (1030-1153 kg/m ³)
Viscosity	Section 6.2 Marsh Funnel	28 – 50 sec/qt (sec/0.95 l)
Sand Content	Section 9	≤ 4 % ⁴
		≤ 2 % ⁵
pH	Section 11 Glass Electrode pH Meter ⁶	8 – 11

- ¹Slurry temperature of at least 40°F (4.4°C) required
- ²American National Standards Institute/American Petroleum Institute Recommended Practice
- ³Increase density requirements by 2 lb/cf (32 kg/m³) in saltwater
- ⁴In tanks before pumping slurry into excavations
- ⁵In excavations immediately before placing concrete
- ⁶pH paper is also acceptable for measuring pH

2. Polymer Slurry

Use a polymer slurry product approved by the Department. Value engineering proposals for other polymer slurry products will not be considered. A list of approved polymer slurry products is available from:

www.ncdot.org/doh/preconstruct/highway/geotech/leftmenu/Polymer.html

Provide polymer slurry that meets the following requirements.

POLYMER SLURRY REQUIREMENTS¹

Property	ANSI/API RP ² 13B-1	Requirement
Density ³ (Mud Weight)	Section 4	≤ 64 lb/cf (1025 kg/m ³)
Viscosity	Section 6.2 Marsh Funnel	32 – 135 sec/qt (sec/0.95 l)
Sand Content	Section 9	≤ 0.5 % ^{4,5}
pH	Section 11 Glass Electrode pH Meter ⁶	8 – 11.5

- ¹Slurry temperature of at least 40°F (4.4°C) required
- ²American National Standards Institute/American Petroleum Institute Recommended Practice
- ³Increase density requirements by 2 lb/cf (32 kg/m³) in saltwater
- ⁴In tanks before pumping slurry into excavations
- ⁵In excavations immediately before placing concrete
- ⁶pH paper is also acceptable for measuring pH

C. Rollers and Chairs

Use rollers and chairs that are non-metallic and resistant to corrosion and degradation. Provide rollers with the necessary dimensions to maintain the minimum required concrete cover shown on the plans and center rebar cages within excavations. Use chairs of sufficient strength to support rebar cages in excavations and of the size necessary to raise cages off bottom of holes to maintain the minimum required distance shown on the plans.

D. Steel Pipes and Caps

Use schedule 40 black steel pipes for access tubes for crosshole sonic logging (CSL). Provide CSL tubes with an inside diameter of at least 1.5" (38 mm). Use CSL tubes with a round, regular inside diameter free of defects and obstructions, including any pipe joints, in order to permit free, unobstructed passage of probes for CSL testing.

Provide watertight CSL tubes free of corrosion with clean internal and external faces to ensure a good bond between concrete and tubes. Fit CSL tubes with watertight plastic caps on the bottom and removable caps on top.

E. Grout

Use nonshrink grout in accordance with the contract.

8.0 PRECONSTRUCTION REQUIREMENTS

A. Drilled Pier Construction Plan Submittal

Submit the proposed drilled pier construction plan for all drilled piers for acceptance. Provide 2 copies of this plan at least 30 days before starting drilled pier construction. Do not begin drilled pier construction until a construction plan is accepted. Provide detailed project specific information in the drilled pier construction plan that includes the following:

1. Overall description and sequence of drilled pier construction;
2. List and sizes of equipment including cranes, drill rigs, vibratory and downhole hammers, Kelly bars, augers, core barrels, casings (diameters, thicknesses and lengths), cleanout buckets, air lifts, pumps, slurry equipment, tremies, pump pipes and other equipment;
3. Procedures for casing installation and temporary casing removal including how telescoping temporary casings will be removed;
4. If applicable, details of slurry testing and use including intended purpose, product information and additives, manufacturer's recommendations for use, name and contact information for slurry manufacturer's technical representative, mixing and handling procedures and how slurry level will be maintained above the highest piezometric head;
5. Methods for drilling and cleaning holes including how cores will be removed and drilling spoils and slurry will be handled and disposed of;
6. Details of CSL tubes, caps and joints including pipe size and how tubes will be attached to reinforcing steel;
7. Procedures for lifting and setting reinforcing steel including how rebar cages will be supported and centralized;
8. Procedures for placing concrete including how tremies and pump pipes will be controlled and contaminated concrete will be contained;
9. Concrete mix design that meets Section 1000 of the *Standard Specifications*;

10. Approved packaged grout or grout mix design that meets the *Grout for Structures* provision;
11. CSL Consultant including Field and Project Engineer; and
12. Other information shown on the plans or requested by the Engineer.

If alternate construction procedures are proposed or necessary, a revised drilled pier construction plan submittal may be required. If the work deviates from the accepted submittal without prior approval, the Engineer may suspend drilled pier construction until a revised plan is accepted.

B. Preconstruction Meeting

Before starting drilled pier construction, hold a preconstruction meeting to discuss the installation, monitoring and inspection of the drilled piers. Schedule this meeting after all drilled pier submittals have been accepted and the Drilled Pier Contractor has mobilized to the site. The Resident or Bridge Maintenance Engineer, Bridge Construction Engineer, Geotechnical Operations Engineer, Contractor and Drilled Pier Contractor Superintendent will attend this preconstruction meeting.

9.0 CONSTRUCTION METHODS

Do not excavate holes, install piles or allow equipment loads or vibrations within 20 ft (6 m) of completed piers until 16 hours after Drilled Pier concrete reaches initial set.

When drilling from a barge, use a fixed template that maintains hole position and alignment during drilled pier construction. Do not use floating templates or templates attached to barges.

Check for correct drilled pier alignment and location before beginning drilling. Check plumbness of Kelly bars before beginning and frequently during drilling.

Provide drilled piers with the minimum required diameters shown on the plans except for piers constructed with permanent casings and slurry or permanent casings to rock. For these situations, the pier diameter may be 2" (50 mm) less than the design pier diameter shown on the plans.

Install drilled piers with tip elevations no higher than shown on the plans or approved by the Engineer. Provide piers with the minimum required tip resistance and, when noted on the plans, penetration into rock.

A. Excavation

Excavate holes with equipment of the sizes required to construct drilled piers. Use equipment and methods accepted in the drilled pier construction plan or approved by the Engineer. Inform the Engineer of any deviations from the accepted plan.

Use drill rigs with sufficient capacity to drill through soil, rock, boulders, timbers, man-made objects and any other materials encountered and drill 20 ft (6 m) deeper or 20% longer than the maximum drilled pier length shown on the plans, whichever is greater. Drilling below pier tip elevations shown on the plans may be required to attain sufficient resistance.

Do not use blasting to advance drilled pier excavations. Blasting for core removal is only permitted when approved by the Engineer. Contain and dispose of drilling spoils and waste concrete as directed and in accordance with Section 802 of the *Standard Specifications*. Drilling spoils consist of all materials and fluids removed from excavations.

Stabilize excavations with only casings or slurry and casings except, as approved by the Engineer, portions of excavations in rock. Use casings or slurry in rock if unstable material is anticipated or encountered. Stabilize excavations from beginning of drilling through concrete placement. If excavations become unstable, the Engineer may suspend drilling and require a revised drilled pier construction plan. If it becomes necessary to replace a casing during drilling, backfill the excavation, insert a larger casing around the casing to be replaced or stabilize the excavation with slurry before removing the casing.

When noted on the plans, do not dewater drilled pier excavations. Otherwise, if excavations are in rock, dewater excavations to the satisfaction of the Engineer.

B. Casings

Provide temporary casings to stabilize holes and protect personnel entering excavations. Permanent casings may be required as noted on the plans. Install permanent casings with tip elevations no deeper than shown on the plans or approved by the Engineer. Additional drilled pier length and reinforcing steel may be required if permanent casings are installed below elevations noted on the plans.

Install casings in continuous sections. Overlap telescoping casings at least 24" (600 mm). Remove casings and portions of permanent casings above the ground line or top of piers, whichever is higher, after placing concrete. Do not cut off permanent casings until Drilled Pier concrete attains a compressive strength of at least 3,000 psi (20.7 MPa).

When using slurry construction without permanent casings, temporary casings at least 10 ft (3 m) long are required at top of excavations. Maintain top of casings at least 12" (300 mm) above the ground line.

C. Slurry Construction

Unless noted otherwise on the plans, slurry construction or polymer slurry is at the Contractor's option.

Use slurry and additives to stabilize holes in accordance with the manufacturer's recommendations. Provide a technical representative employed by the slurry manufacturer to assist and guide the Drilled Pier Contractor onsite during the construction of the first drilled pier. If problems are encountered during drilled pier construction, the Engineer may require the technical representative to return to the site.

Provide documentation that mixing water is suitable for slurry. Use slurry equipment that is sufficient for mixing, agitating, circulating and storing slurry. Thoroughly premix slurry with water in tanks before pumping into excavations. Allow bentonite slurry to hydrate at least 24 hours in tanks before use.

Pump slurry into excavations before encountering water. Maintain slurry level at least 5 ft (1.5 m) or one pier diameter, whichever is greater, above the highest piezometric head along the drilled pier length. The highest piezometric head is anticipated to be the static water or groundwater elevation. However, the Drilled Pier Contractor is responsible for determining the highest piezometric head for each pier.

Maintain the required slurry properties at all times except for sand content. Desand or replace slurry as needed to meet the required sand content in tanks before pumping slurry into excavations and in excavations immediately before placing concrete.

1. Time

Agitate bentonite slurry in holes at least every 4 hours. If this 4 hour time limit is exceeded, the Engineer may require holes to be overreamed at least 1" (25 mm) and no more than 3" (75 mm) below casings. Overream holes with grooving tools, overreaming buckets or other approved methods.

Construct drilled piers so the maximum time slurry is in contact with uncased portions of holes from drilling through concrete placement does not exceed 36 hours. If this 36 hour time limit is exceeded, the Engineer may require the hole diameter to be enlarged at least 6" (150 mm). If the enlarged hole diameter is greater than the permanent casing diameter, replace casing with a larger permanent casing with an outside diameter equal to the diameter of the enlarged hole.

2. Slurry Testing

Define a "sample set" as slurry samples collected from mid-height and within 2 ft (0.6 m) of the bottom of slurry tanks or holes. Take a sample set from slurry tanks to test slurry before beginning drilling. Do not pump slurry into excavations until both slurry samples from tanks meet the required slurry properties. Take sample sets from excavations to test slurry at least every 4 hours and immediately before placing concrete. Do not place concrete until both slurry samples from an excavation meet the required slurry properties. If any slurry test results do not meet the requirements, the Engineer may suspend drilling until both samples from a sample set meet the required slurry properties.

Sign, date and submit slurry test reports upon completion of each pier. The Department reserves the right to perform comparison slurry tests at any time.

3. Disposal

Comply with all Federal, State and local regulations, as well as the project permits and commitments, when disposing of slurry and drilling spoils mixed with slurry. Contain slurry and drilling spoils and keep out of water at all times.

D. Cleaning and Inspection

Provide clean holes with level bottoms so elevations within bottom of holes do not vary by more than 12" (300 mm). Remove soft and loose material from bottom of holes using methods accepted in the drilled pier construction plan or approved by the Engineer. When bottom of holes are not hand cleaned, remove sediment from holes with cleanout buckets, air lifts or pumps.

After cleaning is complete, provide all equipment, personnel and assistance required for the Engineer to visually inspect holes from above or by entering excavations. Remove all cleaning and drilling equipment from holes during inspections and do not interfere with inspections.

1. Tip Resistance

If the Engineer determines that the material below an excavation does not provide the minimum required tip resistance, increase the drilled pier length and lengthen reinforcing steel as directed. One of the following methods may be required to check the conditions and continuity of material below excavations.

a. Test Hole

If excavations are in rock, drill a 1.5" (38 mm) diameter test hole at least 6 ft (1.8 m) below bottom of holes for the Engineer to determine the continuity of rock below holes.

b. Standard Penetration Test

Standard penetration tests (SPT) may be required as noted on the plans. When required, drive a split-barrel sampler 18" (450 mm) below bottom of holes or to refusal in accordance with ASTM D1586. Perform SPT in holes at least 12" (300 mm) away from casing walls and support drill rods so rods remain vertical and straight. Report the number of blows applied in each 6" (150 mm) increment and provide recovered samples to the Engineer. The Engineer will determine the standard penetration resistance required.

2. Bottom Cleanliness

Holes are clean if at least 50% of bottom of holes has less than 0.5" (13 mm) of sediment and no portions of bottom of holes have more than 1.5" (38 mm) of sediment. If bottom of holes does not meet this cleanliness criteria, remove sediment from holes until the Engineer determines holes are clean. One or more of the following methods may be required to inspect the bottom cleanliness of holes.

a. Steel Probe

If drilled pier excavations are not dewatered or as directed, provide a #10 (#32) rebar steel probe that is 24" (600 mm) long with a flat tip on one end and a non-stretch cable connected to the other end. Provide a cable long enough to lower the steel probe to the bottom of holes for the Engineer to determine the amount of sediment in holes.

b. Shaft Inspection Device

The Engineer may use the shaft inspection device (SID) as noted on the plans. The Engineer provides the SID and personnel to operate it. Notify the Engineer at least 2 days before finishing holes that will be inspected with the SID.

Assist the Engineer in handling the SID and associated equipment and supporting the SID during inspections. Provide working areas large enough for the SID, associated equipment and SID personnel within reach of the SID cables and clear view of holes being inspected. If necessary, provide a secure location to store the SID and associated equipment onsite overnight.

Approximately one hour is required to inspect a hole with the SID after the SID and associated equipment are set up. The Engineer will use the SID to measure the amount of sediment at 5 locations around the bottom of holes.

E. Reinforcing Steel and Concrete

Assemble rebar cages consisting of bar and spiral reinforcing steel shown on the plans. Securely cross tie reinforcing steel at each intersection with double wire. Attach a chair under each reinforcing bar and rollers near the top and bottom of rebar cages and every 10 ft (3 m) along cages in between. The number of rollers required at each location along rebar cages is one roller per foot (0.3 meter) of design pier diameter with at least 4 rollers per location. Space rollers equally around rebar cages at each location. Attach rollers so rollers are supported across 2 adjacent reinforcing bars and will freely rotate when rebar cages are lowered into excavations.

If CSL tubes are required, securely attach CSL tubes to spiral reinforcing steel on the inside of rebar cages with at least 3" (75 mm) clearance to reinforcing bars. Extend CSL tubes from 6" (150 mm) above pier tip elevations to at least 2 ft (0.6 m) above the ground line or top of permanent casings, whichever is greater. The number of CSL tubes required for each drilled pier is one tube per foot (0.3 m) of design pier diameter

with at least 4 tubes per pier. Space CSL tubes equally around rebar cages so distances between tubes measured around spiral reinforcing steel are uniform. Install CSL tubes as straight and parallel to each other as possible. Fit caps on top and bottom of CSL tubes.

After the Engineer determines that the material below excavations provides the minimum required tip resistance and holes are clean, place rebar cages and then concrete in excavations. Do not rack or distort rebar cages and CSL tubes when lifting and handling cages. Set rebar cages directly on bottom of holes or, as approved by the Engineer, hang cages from permanent casings. When hanging rebar cages, leave devices supporting cages in place until Drilled Pier concrete attains a compressive strength of at least 3,000 psi (20.7 MPa).

Do not delay placing cages or concrete unless excavations are cased to rock or otherwise approved. If delays occur, the Engineer may require removal of rebar cages to reinspect bottom cleanliness of holes. If bottom of holes does not meet the cleanliness criteria described above, remove sediment from holes until the Engineer determines holes are clean before resetting rebar cages.

After placing rebar cages with CSL tubes, remove top caps, fill tubes with clean water and reinstall caps before placing concrete. Check for correct cage position before placing concrete and keep rebar cages plumb during concrete placement. Maintain cage position so rebar cages do not move vertically more than 6" (150 mm) and columns or footings have the minimum required concrete cover shown on the plans.

Remove all temporary casings during concrete placement. Do not twist, move or otherwise disturb temporary casings until the concrete depth inside casings is at least 10 ft (3 m) or half the head, whichever is greater, above the bottom of casing being disturbed. Define "head" as the difference between the highest piezometric head along the drilled pier length and the static water elevation inside the excavation.

When removing temporary casings, maintain the required concrete depth above the bottom of casing being removed except when the concrete level is at or above top of piers. Sustain sufficient concrete depths to overcome pressures imposed by earth, backfill and fluids. As temporary casings are withdrawn, ensure fluids trapped behind casings is displaced upward and discharged out of excavations without contaminating or displacing concrete.

Pour concrete in excavations to form uniform jointless monolithic drilled piers. Do not trap soil, air, fluids or other contaminants in concrete. Place concrete in accordance with Subarticle 1000-4(E) for Class AA and A concrete. Remove contaminated concrete from top of piers at time of concrete placement.

Inform the Engineer of the volume of concrete placed for each pier. For piers constructed with slurry or as directed, record a graphical plot of depth versus theoretical and actual concrete volumes.

Dry or wet placement of concrete is at the Contractor's option for piers constructed with only casings if the water inflow rate into excavations is less than 6" (150 mm) per half hour after removing any pumps from holes. Wet placement of concrete is required for all other drilled pier construction.

1. Dry Placement

If holes are filling with water for dry placement of concrete, dewater excavations as much as possible before placing concrete. For drilled piers less than 80 ft (24 m) long, pour concrete down the center of excavations so concrete does not hit reinforcing steel or excavation sidewalls. For piers longer than 80 ft (24 m), place concrete with a tremie or pump pipe down the center of excavations so length of free fall is less than 80 ft (24 m).

2. Wet Placement

For wet placement of concrete, maintain static water or slurry levels in holes before placing concrete. Place concrete through steel tremies or pump pipes. Use tremies with watertight joints and a diameter of at least 10" (250 mm). Pump concrete in accordance with Article 420-5 of the *Standard Specifications*. Use approved devices to prevent contaminating concrete when tremies or pump pipes are initially placed in excavations. Extend tremies or pump pipes into concrete at least 5 ft (1.5 m) at all times except when the concrete is initially placed.

When the concrete level reaches the static water elevation inside the excavation, dry placement of concrete is permitted. Before changing to dry placement, pump water or slurry out of holes and remove contaminated concrete from the exposed concrete surface.

10.0 INTEGRITY TESTING

Define "integrity testing" as crosshole sonic logging (CSL) and pile integrity testing (PIT). Integrity testing may be required as noted on the plans. The Engineer will determine how many and which drilled piers require integrity testing. Do not test piers until Drilled Pier concrete cures for at least 7 days and attains a compressive strength of at least 3,000 psi (20.7 MPa).

A. Crosshole Sonic Logging

If CSL testing is required, use a prequalified CSL Consultant to perform CSL testing and provide CSL reports. Use a CSL Operator approved as a Field Engineer (key person) for the CSL Consultant. Provide CSL reports sealed by an engineer approved as a Project Engineer (key person) for the same CSL Consultant.

1. CSL Testing

Perform CSL testing in accordance with ASTM D6760. If probes for CSL testing will not pass through to the bottom of CSL tubes, the Engineer may require coring

to replace inaccessible tubes. Do not begin coring until core hole size and locations are approved. Core at least 1.5" (38 mm) diameter holes the full length of piers. Upon completion of coring, fill holes with clean water and cover to keep out debris. Perform CSL testing in core holes instead of inaccessible tubes.

For piers with 4 or 5 CSL tubes, test all tube pairs. For piers with 6 or more CSL tubes, test all adjacent tube pairs around spiral reinforcing steel and at least 50% of remaining tube pairs selected by the Engineer. Record CSL data at depth intervals of 2.5" (65 mm) or less from the bottom of CSL tubes to top of piers.

2. CSL Reports

Submit 2 copies of each CSL report within 7 days of completing CSL testing. Include the following in CSL reports:

a. Title Sheet

Department's TIP number and WBS element number

Project description

County

Bridge station number

Pier location

Personnel

Report date

b. Introduction

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

d. Pier Details

Pier and casing diameters, lengths and elevations

Drilled Pier concrete compressive strength

Installation methods including use of casings, slurry, pumps, tremies, dry or wet placement of concrete, etc.

e. CSL Results

Logs with plots of signal arrival times and energy vs. depth for all tube pairs tested

f. Summary/Conclusions

Table of velocity reductions with corresponding locations (tube pair and depth) for all tube pairs tested

List of suspected anomalies with corresponding locations (tube pair(s) and depth range)

g. Attachments

Boring log(s)

Field inspection forms and concrete curves (from Engineer)

CSL tube locations, elevations, lengths and identifications

CSL hardware model and software version information

PDF copy of all CSL data

B. Pile Integrity Testing

If required, the Engineer will perform PIT. Provide access to and prepare top of piers for PIT as directed. See ASTM D5882 for PIT details.

C. Further Investigation

Define “further investigation” as any additional testing, excavation or coring following initial integrity testing. Based on concrete placement and initial integrity testing results, the Engineer will determine if drilled piers are questionable and require further investigation within 7 days of receiving CSL reports or completing PIT. For initial CSL testing, the Engineer will typically determine whether further investigation is required based on the following criteria.

Velocity Reductions	Further Investigation Required?
< 20 %	No
20 – 30 %	As Determined by the Engineer
> 30 %	Yes

If further investigation is necessary, the Engineer will typically require one or more of the following methods to investigate questionable piers.

1. CSL Testing

If required, use CSL testing as described above to retest questionable piers and as directed, perform testing with probes vertically offset in CSL tubes. CSL offset data will typically be required for all locations (tube pair and depth) with velocity reductions greater than 30% and at other locations as directed. Record offset data at depths, intervals and angles needed to completely delineate anomalies.

Provide CSL reports as described above. When CSL offset data is required, perform tomographic analysis and provide 3 dimensional color coded tomographic images of piers showing locations and sizes of anomalies.

2. Excavation

If required, excavate around questionable piers and remove permanent casing as needed to expose Drilled Pier concrete. Do not damage piers when excavating or removing casings. The Engineer will determine the portions of piers to expose.

3. Coring

If required, core questionable piers and provide PQ size cores that meet ASTM D2113. The Engineer will determine the number, location and depth of core holes required. Handle, log and store concrete cores in accordance with ASTM D5079. Provide cores to the Engineer for evaluation and testing. Sign, date and submit core logs upon completion of each core hole.

D. Defective Piers

For questionable piers that are exposed or cored, the Engineer will determine if piers are defective based on the results of excavation or coring. For questionable piers that are not exposed or cored, the Engineer will determine if piers are defective based on the results of CSL testing. Questionable piers with only CSL testing will be considered defective if any velocity reductions between any tube pairs are greater than 30%.

11.0 DRILLED PIER ACCEPTANCE

Drilled pier acceptance is based in part on the following criteria.

1. Temporary casings and drilling tools are removed from the drilled pier excavation or the Engineer determines that a stuck temporary casing may remain in the excavation.
2. Drilled Pier concrete is properly placed and does not have any evidence of segregation, intrusions, contamination, structural damage or inadequate consolidation (honeycombing).
3. Center of pier is within 3" (75 mm) of plan location and 2% of plumb. Top of pier is within 1" (25 mm) above and 3" (75 mm) below the elevation shown on the plans or approved by the Engineer.
4. Rebar cage is properly placed and top and center of cage is within tolerances for center of pier. Tip of permanent casing does not extend below the elevation noted on the plans or approved by the Engineer.
5. Drilled pier is not defective or the Engineer determines the defective pier is satisfactory. A pier will be considered defective based on Section 5.0 of this provision.

Do not grout CSL tubes or core holes, backfill around a pier or perform any work on a drilled pier until the Engineer accepts the pier. If the Engineer determines a pier is unacceptable, remediation is required. Remediation may include, but is not limited to grouting, removing part or all of unacceptable piers, modifying pier designs or providing

replacement or additional piers or piles. Submit working drawings and design calculations for acceptance in accordance with Article 105-2 of the *Standard Specifications*. Ensure remediation submittals are designed, detailed and sealed by an engineer licensed by the State of North Carolina. Do not begin remediation work until remediation plans are approved. When repairing unacceptable piers, perform post repair testing to gauge success of the repair. No extension of completion date or time will be allowed for remediation of unacceptable drilled piers and post repair testing.

12.0 MEASUREMENT AND PAYMENT

____ *Dia. Drilled Piers in Soil*, ____ *Dia. Drilled Piers Not in Soil* and ____ *Dia. Drill Piers* will be measured and paid in linear feet (meters). Acceptable drilled piers will be measured as the difference between the specified top of pier and pier tip elevations or revised elevations approved by the Engineer.

For bents with a not in soil pay item shown on the plans, drilled piers will be paid as ____ *Dia. Drilled Piers in Soil* and ____ *Dia. Drilled Piers Not in Soil*. Define “not in soil” as material with a rock auger penetration rate of less than 2" (50 mm) per 5 minutes of drilling at full crowd force. When 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 at the contract unit price for ____ *Dia. Drilled Piers Not in Soil*. Seams, voids and weathered rock greater than 3 ft (1 m) thick will be paid at the contract unit price for ____ *Dia. Drilled Piers in Soil* where not in soil is no longer encountered. For bents with a not in soil pay item shown on the plans, drilled piers through air or water will be paid at the contract unit price for ____ *Dia. Drilled Piers in Soil*.

For bents without a not in soil pay item shown on the plans, drilled piers will be paid as ____ *Dia. Drill Piers*. The contract unit price for ____ *Dia. Drilled Piers* will be full compensation for drilling through any materials encountered.

The contract unit prices for ____ *Dia. Drilled Piers in Soil*, ____ *Dia. Drilled Piers Not in Soil* and ____ *Dia. Drill Piers* will also be full compensation for spoils and slurry containment and disposal, slurry construction including a slurry manufacturer representative and overreaming and enlarging piers and any concrete removal, miscellaneous grading and excavation. No additional payment will be made for excess Drilled Pier concrete due to caving or sloughing holes or telescoping casings.

Reinforcing steel will be measured and paid in accordance with Article 425-6 of the *Standard Specifications*.

Permanent Steel Casing for ____ Dia. Drilled Pier will be measured and paid in linear feet (meters). Permanent casings will only be paid for when required by the Engineer or shown on the plans. Permanent casings will be measured as the difference between the ground line or specified top of pier elevation, whichever is higher, and the specified permanent casing tip elevation or revised elevation approved by the Engineer. If a permanent casing cannot be installed to the tip elevation shown on the plans, up to 3 ft (1 m) of casing cut-off

will be paid at the contract unit price for *Permanent Steel Casing for ____ Dia. Drilled Pier*.

SID Inspections will be measured and paid in units of each. *SID Inspections* will be measured as one per pier. The contract unit price for *SID Inspections* will be full compensation for inspecting holes with the SID the first time. No additional payment will be made for subsequent inspections of the same hole.

The Contractor is responsible for any damage to the SID equipment due to the Contractor's fault or negligence. Replace any damaged equipment at no additional cost to the Department.

SPT Testing will be measured and paid in units of each. *SPT Testing* will be measured as the number of standard penetration tests performed.

CSL Testing will be measured and paid in units of each. *CSL Testing* will be measured as one per pier. The contract unit price for *CSL Testing* will be full compensation for performing initial CSL testing and providing CSL reports. Subsequent CSL testing of and CSL reports for the same pier will be considered further investigation. No separate payment will be made for CSL tubes. CSL tubes including coring for inaccessible tubes and grouting will be incidental to the contract unit prices for drilled piers.

No payment will be made for stuck temporary casings that cannot be removed from drilled pier excavations or additional drilled pier length and reinforcing steel required due to temporary casings that remain in excavations. No payment will be made for PIT. No payment will be made for further investigation of defective piers. Further investigation of piers that are not defective will be paid as extra work in accordance with Article 104-7 of the *Standard Specifications*. No payment will be made for remediation of unacceptable drilled piers or post repair testing.

Payment will be made under:

Pay Item	Pay Unit
____ Dia. Drilled Piers in Soil	Linear Foot (Meter)
____ Dia. Drilled Piers Not in Soil	Linear Foot (Meter)
____ Dia. Drilled Piers	Linear Foot (Meter)
Permanent Steel Casing for ____ Dia. Drilled Piers	Linear Foot (Meter)
SID Inspections	Each
SPT Testing	Each
CSL Testing	Each

PILES

(3-5-10)

Revise the *Standard Specifications* as follows:

Page 4-71, Delete Section 450 **BEARING PILES** and replace it with the following:

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 $\frac{1}{4}$ 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 restrike 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

_____ *Prestressed Concrete Piles*, _____ *Steel Piles* and _____ *Galvanized 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 _____ *Prestressed Concrete Piles*, _____ *Steel Piles* and _____ *Galvanized Steel Piles* 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 _____ *Prestressed Concrete Piles* and _____ *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 _____ *Prestressed Concrete Piles*, _____ *Steel Piles* and _____ *Galvanized Steel Piles*.

For prestressed concrete piles that are built up, the build-up will be measured and paid for at the contract unit price for _____ *Prestressed Concrete Piles*. Steel pile tips are not included in the measurement of prestressed concrete piles. No separate payment will be made for steel pile tips or splicers and any associated hardware or welding. Steel pile tips and steel pile splicers will be considered incidental to the contract unit price for _____ *Prestressed Concrete 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 _____ *Prestressed Concrete Piles*, _____ *Steel Piles* and _____ *Galvanized 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 _____ *Prestressed Concrete Piles*, _____ *Steel Piles* and _____ *Galvanized 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	Pay Unit
_____ Prestressed Concrete Piles	Linear Foot (Meter)
_____ Steel Piles	Linear Foot (Meter)
_____ Galvanized Steel Piles	Linear Foot (Meter)
Steel Pile Points	Each
Pipe Pile Plates	Each
Predrilling for Piles	Linear Foot (Meter)
Pile Redrives	Each
Pile Excavation in Soil	Linear Foot (Meter)
Pile Excavation Not in Soil	Linear Foot (Meter)
PDA Testing	Each
PDA Assistance	Each

NATIONWIDE PERMIT 3
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
FINAL NOTICE OF ISSUANCE AND MODIFICATION OF NATIONWIDE PERMITS
FEDERAL REGISTER
AUTHORIZED MARCH 19, 2007

Maintenance. (a) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable, structure, or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. This NWP authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the district engineer, provided the permittee can demonstrate funding, contract, or other similar delays.

(b) This NWP also authorizes the removal of accumulated sediments and debris in the vicinity of and within existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.) and the placement of new or additional riprap to protect the structure. The removal of sediment is limited to the minimum necessary to restore the waterway in the immediate vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend further than 200 feet in any direction from the structure. This 200 foot limit does not apply to maintenance dredging to remove accumulated sediments blocking or restricting outfall and intake structures or to maintenance dredging to remove accumulated sediments from canals associated with outfall and intake structures. All dredged or excavated materials must be deposited and retained in an upland area unless otherwise specifically approved by the district engineer under separate authorization. The placement of riprap must be the minimum necessary to protect the structure or to ensure the safety of the structure. Any bank stabilization measures not directly associated with the structure will require a separate authorization from the district engineer.

(c) This NWP also authorizes temporary structures, fills, and work necessary to conduct the maintenance activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

(d) This NWP does not authorize maintenance dredging for the primary purpose of navigation or beach restoration. This NWP does not authorize new stream channelization or stream relocation projects.

Notification: For activities authorized by paragraph (b) of this NWP, the permittee must submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 27). Where maintenance dredging is proposed, the pre-construction notification must include information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals. (Sections 10 and 404)

Note: This NWP authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the Clean Water Act Section 404(f) exemption for maintenance.

NATIONWIDE PERMIT CONDITIONS

The following General Conditions must be followed in order for any authorization by a NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. Endangered Species. (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized

under any NWP which “may affect” a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have “no effect” on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal “takes” of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at <http://www.fws.gov/> and <http://www.noaa.gov/fisheries.html> respectively.

18. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State

Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NHPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NHPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NHPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

20. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWP. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWP.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

21. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

22. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

23. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

24. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

25. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:
“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate

the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

26. Compliance Certification. Each permittee who received an NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

- (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;
- (b) A statement that any required mitigation was completed in accordance with the permit conditions; and
- (c) The signature of the permittee certifying the completion of the work and mitigation.

27. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

- (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
- (2) Forty-five calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is “no effect” on listed species or “no potential to cause effects” on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained.

Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

(5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

(e) District Engineer's Decision: In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment

(after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

28. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

FURTHER INFORMATION

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

DEFINITIONS

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration, establishment (creation), enhancement, or preservation of aquatic resources for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a

decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or

flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through

which surface and subsurface hydrology connects waterbodies with their adjacent uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 20.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete project: The term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete project must have independent utility (see definition). For linear projects, a “single and complete project” is all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States that, during a year with normal patterns of precipitation, has water flowing or standing above ground to the extent that an ordinary high water mark (OHWM) or other indicators of jurisdiction can be determined, as well as any wetland area (see 33 CFR 328.3(b)). If a jurisdictional wetland is adjacent--meaning bordering, contiguous, or neighboring--to a jurisdictional waterbody displaying an OHWM or other indicators of jurisdiction, that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of "waterbodies" include streams, rivers, lakes, ponds, and wetlands.

REGIONAL CONDITIONS FOR NATIONWIDE PERMITS IN THE WILMINGTON DISTRICT

1. Excluded Waters

The Corps has identified waters that will be excluded from the use of all NWP's during certain timeframes. These waters are:

1.1. Anadromous Fish Spawning Areas

Waters of the United States identified by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas are excluded during the period between February 15 and June 30, without prior written approval from NCDMF or NCWRC and the Corps.

1.2. Trout Waters Moratorium

Waters of the United States in the twenty-five designated trout counties of North Carolina are excluded during the period between October 15 and April 15 without prior written approval from the NCWRC. (see Section I. b. 7. for a list of the twenty-five trout counties).

1.3. Sturgeon Spawning Areas

Waters of the United States designated as sturgeon spawning areas are excluded during the period between February 1 and June 30, without prior written approval from the National Marine Fisheries Service (NMFS).

2. Waters Requiring Additional Notification

The Corps has identified waters that will be subject to additional notification requirements for activities authorized by all NWP's. These waters are:

2.1. Western NC Counties that Drain to Designated Critical Habitat

Waters of the U.S. that requires a Pre-Construction Notification pursuant to General Condition 27 (PCN) and located in the sixteen counties listed below, applicants must provide a copy of the PCN to the US Fish and Wildlife Service, 160 Zillicoa Street, Asheville, North Carolina 28805. This PCN must be sent concurrently to the US Fish and Wildlife Service and the Corps Asheville Regulatory Field Office. Please see General Condition 17 for specific notification requirements related to Federally Endangered Species and the following website for information on the location of designated critical habitat.

Counties with tributaries that drain to designated critical habitat that require notification to the Asheville US Fish and Wildlife Service: Avery, Cherokee, Forsyth, Graham, Haywood,

Henderson, Jackson, Macon Mecklenburg, Mitchell, Stokes, Surry, Swain, Transylvania, Union and Yancey.

Website and office addresses for Endangered Species Act Information:

The Wilmington District has developed the following website for applicants which provide guidelines on how to review linked websites and maps in order to fulfill NWP general condition 17 requirements.

<http://www.saw.usace.army.mil/wetlands/ESA>

Applicants who do not have internet access may contact the appropriate US Fish and Wildlife Service offices or the US Army Corps of Engineers office listed below.

US Fish and Wildlife Service
Asheville Field Office
160 Zillicoa Street
Asheville, NC 28801
Telephone: (828) 258-3939

Asheville US Fish and Wildlife Service Office counties: All counties west of and including Anson, Stanly, Davidson, Forsyth and Stokes Counties

US Fish and Wildlife Service
Raleigh Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
Telephone: (919) 856-4520

Raleigh US Fish and Wildlife Service Office counties: all counties east of and including Richmond, Montgomery, Randolph, Guilford, and Rockingham Counties.

2.2. Special Designation Waters

Prior to the use of any NWP in any of the following North Carolina identified waters and contiguous wetlands, applicants must comply with Nationwide Permit General Condition 27 (PCN). The North Carolina waters and contiguous wetlands that require additional notification requirements are:

“Outstanding Resource Waters” (ORW) and “High Quality Waters” (HQW) (as designated by the North Carolina Environmental Management Commission), or
“Inland Primary Nursery Areas” (IPNA) (as designated by the North Carolina Wildlife Resources Commission), or “Contiguous Wetlands” (as defined by the North Carolina Environmental Management Commission), or “Primary Nursery Areas” (PNA) (as designated by the North Carolina Marine Fisheries Commission).

2.3. Coastal Area Management Act (CAMA) Areas of Environmental Concern

Non-Federal applicants for any NWP in a designated "Area of Environmental Concern" (AEC) in the twenty (20) counties of Eastern North Carolina covered by the North Carolina Coastal Area Management Act (CAMA), must also obtain the required CAMA permit. Construction activities for non-Federal projects may not commence until a copy of the approved CAMA permit is furnished to the appropriate Wilmington District Regulatory Field Office (Wilmington Field Office – P.O. Box 1890, Wilmington, NC 28402 or Washington Field Office – P.O. Box 1000, Washington, NC 27889).

2.4. Barrier Islands

Prior to the use of any NWP on a barrier island of North Carolina, applicants must comply with Nationwide Permit General Condition 27 (PCN).

2.5. Mountain or Piedmont Bogs

Prior to the use of any NWP in a "Mountain or Piedmont Bog" of North Carolina, applicants shall comply with Nationwide Permit General Condition 27 (PCN).

Note: The following wetland community types identified in the N.C. Natural Heritage Program document, "Classification of Natural communities of North Carolina (Michael P. Schafale and Alan S. Weakley, 1990), are subject to this regional condition.

Mountain Bogs	Piedmont Bogs
Swamp Forest-Bog Complex	Upland depression Swamp Forest
Swamp Forest-Bog Complex (Spruce Subtype)	
Southern Appalachian Bog (Northern Subtype)	
Southern Appalachian Bog (Southern Subtype)	
Southern Appalachian Fen	

2.6. Animal Waste Facilities

Prior to use of any NWP for construction of animal waste facilities in waters of the US, including wetlands, applicants shall comply with Nationwide Permit General Condition 27 (PCN).

2.7. Trout Waters

Prior to any discharge of dredge or fill material into streams or waterbodies within the twenty-five (25) designated trout counties of North Carolina, the applicant shall comply with

Nationwide Permit General Condition 27 (PCN). The applicant shall also provide a copy of the notification to the appropriate NCWRC office to facilitate the determination of any potential impacts to designated Trout Waters. Notification to the Corps of Engineers will include a statement with the name of the NCWRC biologist contacted, the date of the notification, the location of work, a delineation of wetlands, a discussion of alternatives to working in the mountain trout waters, why alternatives were not selected, and a plan to provide compensatory mitigation for all unavoidable adverse impacts to mountain trout waters.

NCWRC and NC Trout Counties

Mr. Ron Linville			
Western Piedmont Region Coordinator	Alleghany	Caldwell	Watauga
3855 Idlewild Road	Ashe	Mitchell	Wilkes
Kernersville, NC 27284-9180	Avery	Stokes	
Telephone: (336) 769-9453	Burke	Surry	

Mr. Dave McHenry			
Mountain Region Coordinator	Buncombe	Henderson	Polk
20830 Great Smoky Mtn. Expressway	Cherokee	Jackson	Rutherford
Waynesville, NC 28786	Clay	Macon	Swain
Telephone: (828) 452-2546	Graham	Madison	Transylvania
Fax: (828) 452-7772	Haywood	McDowell	Yancey

3. List of Corps Regional Conditions for All Nationwide Permits

The following conditions apply to all Nationwide Permits in the Wilmington District:

3.1. Limitation of Loss of Perennial Stream Bed

NWPs may not be used for activities that may result in the loss or degradation of greater than 300 total linear feet of perennial streams. The NWPs may not be used for activities that may result in the loss or degradation of greater than 300 total linear feet of ephemeral and intermittent streams that exhibit important aquatic function(s)* Loss of stream includes the linear feet of stream bed that is filled, excavated, or flooded by the proposed activity. The District Commander can waive the 300 linear foot limit for ephemeral and intermittent streams on a case-by-case basis if he determines that the proposed activity will result in minimal individual and cumulative adverse impacts to the aquatic environment. Waivers for the loss of ephemeral and intermittent streams must be in writing. This waiver only applies to the 300 linear feet threshold for NWPs. Mitigation may still be required for impacts to ephemeral and intermittent streams, on a case-by-case basis, depending on the impacts to the aquatic environment of the proposed project. [*Note: The Corps uses the Stream Quality Assessment Worksheet, located with Permit Information on the Regulatory Program Web Site, to aid in the determination of aquatic function within the intermittent stream channel.]

3.2. Mitigation for Loss of Stream Bed Exceeding 150 Feet.

For any NWP that results in a loss of more than 150 linear feet of perennial and/or ephemeral/intermittent stream, the applicant shall provide a mitigation proposal to compensate for the loss of aquatic function associated with the proposed activity. For stream losses less than 150 linear feet, that require a PCN, the District Commander may determine, on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effect on the aquatic environment.

3.3. Pre-construction Notification for Loss of Streambed Exceeding 150 Feet.

Prior to use of any NWP for any activity which impacts more than 150 total linear feet of perennial stream or ephemeral/ intermittent stream, the applicant must comply with Nationwide Permit General Condition 27 (PCN). This applies to NWPs that do not have specific notification requirements. If a NWP has specific notification requirements, the requirements of the NWP should be followed.

3.4. Restriction on Use of Live Concrete

For all NWPs which allow the use of concrete as a building material, measures will be taken to prevent live or fresh concrete, including bags of uncured concrete, from coming into contact with waters of the state until the concrete has hardened.

3.5. Requirements for Using Riprap for Bank Stabilization

For all NWPs that allow for the use of riprap material for bank stabilization, the following measures shall be applied:

3.5.1. Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters.

3.5.2. The placement of riprap shall be limited to the areas depicted on submitted work plan drawings.

3.5.3. The riprap material shall be clean and free from loose dirt or any pollutant except in trace quantities that would not have an adverse environmental effect.

3.5.4. It shall be of a size sufficient to prevent its movement from the authorized alignment by natural forces under normal conditions.

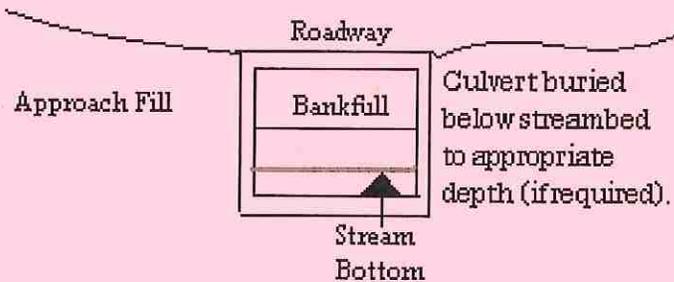
3.5.5. The riprap material shall consist of clean rock or masonry material such as, but not limited to, granite, marl, or broken concrete.

3.5.6. A waiver from the specifications in this Regional Condition may be requested in writing. The waiver will only be issued if it can be demonstrated that the impacts of complying with this Regional condition would result in greater adverse impacts to the aquatic environment.

3.6. Safe Passage Requirements for Culvert Placement

For all NWP's that involve the construction/installation of culverts, measures will be included in the construction/installation that will promote the safe passage of fish and other aquatic organisms. The dimension, pattern, and profile of the stream above and below a pipe or culvert should not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed opening should be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow should be determined from gage data, if available. In the absence of such data, bankfull flow can be used as a comparable level.

In the twenty (20) counties of North Carolina designated as coastal counties by the Coastal Area Management Act (CAMA): All pipe and culvert bottoms shall be buried at least one foot below normal bed elevation when they are placed within the Public Trust Area of Environmental Concern (AEC) and/or the Estuarine Waters AEC as designated by CAMA, and/or all streams appearing as blue lines on United States Geological Survey (USGS) quad sheets.



In all other counties: Culverts greater than 48 inches in diameter will be buried at least one foot below the bed of the stream. Culverts 48 inches in diameter or less shall be buried or placed on the stream bed as practicable and appropriate to maintain aquatic passage, and every effort shall be made to maintain the existing channel slope. The bottom of the culvert must be placed at a depth below the natural stream bottom to provide for passage during drought or low flow conditions.

Destabilizing the channel and head cutting upstream should be considered in the placement of the culvert.

A waiver from the depth specifications in this condition may be requested in writing. The waiver will be issued if it can be demonstrated that the proposal would result in the least impacts to the aquatic environment.

All counties: Culverts placed in wetlands do not have to be buried.

3.7. Notification to NCDENR Shellfish Sanitation Section

Applicants shall notify the NCDENR Shellfish Sanitation Section prior to dredging in or removing sediment from an area closed to shell fishing where the effluent may be released to an area open for shell fishing or swimming in order to avoid contamination from the disposal area and cause a temporary shellfish closure to be made. Such notification shall also be provided to the appropriate Corps of Engineers Regulatory Field Office. Any disposal of sand to the ocean beach should occur between November 1 and April 30 when recreational usage is low. Only clean sand should be used and no dredged sand from closed shell fishing areas may be used. If beach disposal were to occur at times other than stated above or if sand from a closed shell fishing area is to be used, a swimming advisory shall be posted, and a press release shall be issued.

3.8. Preservation of Submerged Aquatic Vegetation

Adverse impacts to Submerged Aquatic Vegetation (SAV) are not authorized by any NWP within any of the twenty coastal counties defined by North Carolina's Coastal Area Management Act of 1974 (CAMA).

NC DIVISION OF WATER QUALITY - GENERAL CERTIFICATION CONDITIONS

For the most recent General Certification conditions, call the NC Division of Water Quality, Wetlands/401 Certification Unit at (919) 733-1786 or access the following website:
<http://h2o.enr.state.nc.us/ncwetlands/certs.html>

NC DIVISION OF COASTAL MANAGEMENT - STATE CONSISTENCY

In a letter dated May 7, 2007, the North Carolina Division of Coastal Management found this NWP consistent with the North Carolina Coastal Zone Management Program. Updates on CAMA Consistency for NC can be found on the NC DCM web site at:
<http://dcm2.enr.state.nc.us/Permits/consist.htm>

EASTERN BAND OF THE CHEROKEE INDIANS TRIBAL WATER QUALITY CERTIFICATIONS

In a letter dated May 8, 2007, US EPA, on behalf of the Eastern Band of Cherokee Indians, provided Tribal General Conditions for Nationwide Permits on Cherokee Indian Reservation. These Tribal General Conditions are located on the Corps website at:
<http://www.saw.usace.army.mil/WETLANDS/NWP2007/EBCI-certs.html>

Citations:

2007 Nationwide Permits Public Notice for Final Issue Date: March 15, 2007

Correction Notice for Nationwide Permits, Federal Register / Vol. 72, No. 88 / Tuesday, May 8, 2007 / Notices p.26082

2007 SAW Regional Conditions – Authorized June 1, 2007

This and other information can be found on the Corps web site at:
<http://www.saw.usace.army.mil/WETLANDS/NWP2007/nationwide-permits.html>

Water Quality Certification N°. 3687

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

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

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

Activities meeting any one (1) of the following thresholds or circumstances require written approval for a 401 Water Quality Certification from the Division of Water Quality (the "Division"):

- a. Impacts equal or greater than 40 linear feet of additional permanent stream impact at an existing stream crossing location, or
- b. Temporary or permanent impacts equal to or exceeding: one-third (1/3) acre of wetlands East of Interstate-95, or one-tenth (1/10) of acre of wetlands West of Interstate-95; or
- c. Any impact associated with a Notice of Violation or an enforcement action initiated by the Division and/or the Division of Land Resources; or
- d. Projects with any impacts to streams, wetlands, and/or waters that have received a Notice of Violation from the Division and/or Division of Land Resources; or
- e. Any impacts to streams and/or buffers in the Neuse, Tar-Pamlico, Randleman and Catawba River Basins (or any other basins with Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless* the activities are listed as "EXEMPT" from these Rules.

In accordance with North Carolina General Statute Section 143-215.3D(e), written approval for a 401 Water Quality General Certification must include the appropriate fee. If a project also requires a CAMA Permit, then one payment to both agencies shall be submitted and will be the higher of the two fees.

Activities included in this General Certification and below the thresholds listed above *do not* require written approval from the Division of Water Quality as long as they comply with the Conditions of Certification listed below. If any of these Conditions cannot be met, written approval from the Division is required.

Water Quality Certification N^o. 3687

Conditions of Certification:

1. No Impacts Beyond Those Authorized for this General Certification

No waste, spoil, solids, or fill of any kind shall occur in wetlands, waters, or riparian areas beyond the thresholds established for use of this General Certification, or beyond the footprint of the impacts authorized in the written approval, including incidental impacts. All construction activities, including the design, installation, operation, and maintenance of sediment and erosion control Best Management Practices, shall be performed so that no violations of state water quality standards, statutes, or rules occur.

2. Standard Erosion and Sediment Control Practices

Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices:

- a. Design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
- b. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
- c. Reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.
- d. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times, except for publicly funded linear transportation projects when materials can be accessed offsite in a timely manner.
- e. If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), Trout (Tr), SA, WS-I, WS-II, High Quality (HQW), or Outstanding Resource (ORW) waters, then the sediment and erosion control requirements contained within *Design Standards in Sensitive Watersheds* (15A NCAC 04B .0124) supercede all other sediment and erosion control requirements.

3. No Sediment and Erosion Control Measures in Wetlands or Waters

Sediment and erosion control measures should not be placed in wetlands or waters outside of the permitted impact areas without prior approval from the Division. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, then the design and placement of temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or stream beds or banks, adjacent to or upstream and down stream of the above structures. All sediment and erosion control devices shall be removed and the natural grade restored within two (2) months of the date that the Division of Land Resources or locally delegated program has released the project.

4. Construction Stormwater Permit NCG010000

Upon the approval of an Erosion and Sedimentation Control Plan issued by the Division of Land Resources (DLR) or a DLR delegated local erosion and sedimentation control program, an NPDES General stormwater permit (NCG010000) administered by the Division is automatically issued to the project. This General Permit allows stormwater to be discharged during land disturbing construction activities as stipulated by conditions in the permit. If the

Water Quality Certification N^o. 3687

activity is covered by this permit [applicable to construction projects that disturb one (1) or more acres], full compliance with permit conditions including the sedimentation control plan, self-monitoring, record keeping and reporting requirements are required. A copy of this permit and monitoring report forms may be found at http://h2o.enr.state.nc.us/su/Forms_Documents.htm.

NCDOT shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their individual NPDES (NCS000250) stormwater permit.

5. Work in the Dry

All work in or adjacent to stream waters shall be conducted in a dry work area. Approved best management practices from the most current version of the NC Sediment and Erosion Control Manual, or the NC DOT Construction and Maintenance Activities Manual, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water. Exceptions to this condition require submittal to, and approval by, the Division.

6. Construction Moratoriums and Coordination

If activities must occur during periods of high biological activity (i.e. sea turtle or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities. This condition can be waived through written concurrence on a case by case basis upon reasonable justification.

All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) to protect trout, anadromous fish, larval/post-larval fishes and crustaceans, or other aquatic species of concern shall be obeyed. This condition can be waived through written concurrence on a case by case basis upon reasonable justification.

Work within the twenty-five (25) designated trout counties or identified state or federal endangered or threatened species habitat shall be coordinated with the appropriate WRC, USFWS, NMFS personnel.

7. Riparian Area Protection Rules (Buffer Rules)

Activities located in the protected 50-foot wide riparian areas (whether jurisdictional wetlands or not) within the Neuse, Tar-Pamlico, Randleman, Catawba (or any other basin with buffer rules), shall be limited to "uses" identified within and constructed in accordance with 15A NCAC 2B .0233, .0259, .0250, and .0243, and shall be located, designed, constructed, and maintained to have minimal disturbance to protect water quality to the maximum extent practicable through the use of best management practices. All riparian area protection rule requirements, including diffuse flow requirements, must be met.

8. Water Supply Watershed Buffers

The 100-foot wide (high-density development) or the 30-foot wide vegetative buffer (all other development) must be maintained adjacent to all perennial waters except for allowances as provided in the Water Supply Watershed Protection Rules [15A NCAC 2B .0212 through .0215].

Water Quality Certification N°. 3687

9. Placement of Culverts and Other Structures in Waters and Wetlands

The application must include construction plans with cross-sectional details in order to indicate that the current stability of the stream will be maintained or enhanced (i.e., not result in head cuts).

Culverts required for this project shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. Existing stream dimensions (including the cross section dimensions, pattern, and longitudinal profile) must be maintained above and below locations of each culvert. Placement of culverts and other structures in waters, streams, and wetlands must be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life, unless otherwise justified and approved by the Division.

Installation of culverts in wetlands must ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. Additionally, when roadways, causeways or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges must be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

Any rip rap required for normal pipe burial and stabilization shall be buried such that the original stream elevation is restored and maintained.

The establishment of native, woody vegetation and other soft stream bank stabilization techniques must be used where practicable instead of rip-rap or other bank hardening methods.

10. If concrete is used during the construction, then a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete should not be discharged to surface waters due to the potential for elevated pH and possible aquatic life/fish kills.
11. Applications for riprap groins proposed in accordance with 15A NCAC 07H .1401 (NC Division of Coastal Management General Permit for construction of Wooden and Riprap Groins in Estuarine and Public Trust Waters) must meet all the specific conditions for design and construction specified in 15A NCAC 07H .1405.

12. Temporary Fills and/or Access Roads

All temporary fill and culverts shall be removed and the impacted area returned to the original grade, including each stream's original cross sectional dimensions, plan form pattern, and longitudinal bed and bed profile after construction is complete or within two (2) months of the establishment of the crossing, whichever is sooner, and the various sites shall be stabilized with natural woody vegetation (except for the maintenance areas of permanent utility crossings) and restored to prevent erosion. If the crossings are not completely removed and restored as described above within the specified time above, then written approval from the Division must be obtained to modify this condition.

Water Quality Certification N^o. 3687

13. For activities requiring written approval, additional site-specific conditions may be added to the approval letter in order to ensure compliance with all applicable water quality and effluent standards.

14. Certificate of Completion

When written authorization is required for use of this certification, upon completion of all permitted impacts included within the approval and any subsequent modifications, the applicant shall be required to return the certificate of completion attached to the approval. One copy of the certificate shall be sent to the DWQ Central Office in Raleigh at 1650 Mail Service Center, Raleigh, NC, 27699-1650.

15. If an environmental document is required under NEPA or SEPA, then this General Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse.
16. This General Certification shall expire three (3) years from the date of issuance of the written approval or on the same day as the expiration date of these corresponding Nationwide and Regional General Permits. In accordance with General Statute 136-44.7B, certifications issued to the NCDOT shall expire only upon expiration of the federal 404 Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this Certification. If the construction process for approved activities will overlap the expiration and renewal date of the corresponding 404 Permit and the Corps allows for continued use of the 404 Permit, then the General Certification shall also remain in effect without requiring re-application and re-approval to use this Certification for the specific impacts already approved.
17. The applicant/permittee and their authorized agents shall conduct all activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act), and any other appropriate requirements of State and Federal Law. If the Division determines that such standards or laws are not being met, including failure to sustain a designated or achieved use, or that State or Federal law is being violated, or that further conditions are necessary to assure compliance, then the Division may reevaluate and modify this General Water Quality Certification.

Non-compliance with or violation of the conditions herein set forth by a specific fill project shall result in revocation of this General Certification for the project and may result in criminal and/or civil penalties.

The Director of the North Carolina Division of Water Quality may require submission of a formal application for Individual Certification for any project in this category of activity if it is determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or degrade the waters so that existing uses of the wetland or downstream waters are precluded.

Public hearings may be held for specific applications or group of applications prior to a Certification decision if deemed in the public's best interest by the Director of the North Carolina Division of Water Quality.

Water Quality Certification N°. 3687

Effective date: November 1, 2007

DIVISION OF WATER QUALITY

By



Coleen H. Sullins

Director

History Note: Water Quality Certification Number 3687 replaces Water Quality Certification Number 3376 issued on March 18, 2002, Water Quality Certification Number 3494 issued December 31, 2004, and Water Quality Certification Number 3624 issued March 2007. This General Certification is rescinded when the Corps of Engineers re-authorizes any of these Nationwide or Regional Permits or when deemed appropriate by the Director of the Division of Water Quality.

GEOTECHNICAL ATTACHMENT

The following geotechnical report is for information only and is not a part of this contract. This information is for investigation only and no accuracy is implied or guaranteed. No claim will be allowed as a result of the use of this information.



C. B. Rittle
GEOTECHNICAL APR 10 2003

BD - 5112I

WBS 45358.1.9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MIKE F. EASLEY
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

LYNDO TIPPETT
SECRETARY

March 28, 2003

STATE PROJECT: 5.7952
I.D. : Maintenance
COUNTY: Catawba
DESCRIPTION: Bridge No. 229 on SR 1809 Love Road over Hagan Fork
Tributary
SUBJECT: Geotechnical Report - Bridge Foundation Investigation

SITE DESCRIPTION AND GEOLOGY

The site is in central Catawba County about two miles west of the town of Claremont. Geologically, it is in the Inner Piedmont Belt just west of the shear boundary separating Kings Mountain and Inner Piedmont rock types. The rock is mapped as Biotite Gneiss, in agreement with observed lithologies.

The Geotechnical Unit was asked to provide foundation data for a proposed 1@40' cored slab bridge centered at Station 10+11.2, on 115° skew. We performed four test borings, roughly at the corners of the proposed bridge. Elevations are tied to the T.B.M: "Nail in 12" Pine, 29' Rt. Of Sta. 9+34 (Assumed Elev. = 100.0)", as depicted on the NCDOT Hydraulics report dated 11/02, signed and sealed on 1-30-03.

The existing roadway (SR 1809, Love Road) is an 18' BST. The stream crossed is Hagan Fork Tributary. It is a small stream; at the time of our investigation it flowed about four feet wide and 2 inches deep. It was constricted by an old footing in the creek under the existing bridge. There is a confluence of two smaller streams some 20' upstream. The left hand tributary is constrained by a small rock wall; the right hand tributary flows through a 42" RCP under a residential driveway about 80' upstream. Apparent rock outcrops are visible in and around the stream, but the test borings, especially for End Bent Two, did not agree with the apparent rock elevations.

FOUNDATION SUMMARY

End Bent One

The borings penetrated 2' to 7' of very soft sandy clay (roadway fill), overlying residual soil. The residual soil consists of soft sandy silt (A-4) over medium dense silty

sand (A-2-4), grading to rock. Hard rock was encountered between 12' and 14' depth. The borings were collared near the existing roadway grade elevation. Top of rock elevation was 83.7' (left) and 82.5' (right). One core run was performed in boring EB1-A to verify rock quality. The sample obtained was fresh, hard mica gneiss. The logged REC = 87% and RQD = 81% is probably conservative. We think the lost recovery was probably good rock left at the bottom of the hole by the retriever.

Groundwater was near 8' depth in both borings (Elev. 88').

End Bent Two

The EB2 borings were somewhat problematic, especially on the left side. Roadway fill overlies a thin (1-2') alluvial sand layer, then 12 to 16' of residual soil. However, the EB2-A boring encountered two seams requiring coring equipment to penetrate. The upper seam was interpreted as a small boulder at the base of the fill. The lower seam was a quartz rich seam in mica gneiss. We recovered 0.4' feet of hard rock, essentially pure quartz. The residual soil strata in both borings had variability in consistency that appeared to result from the layered nature of the mica gneiss source rock. The final top of rock/weathered rock elevations are 70.2' left and 75.0' right. A small quantity of rock core was obtained at the bottom of boring EB2-B. It is described as: mica gneiss, moderately severe weathering, moderately hard, close fracture spacing, REC = 80%, RQD = 57%.

Groundwater was near 6' depth (Elev. 89').

GEOLOGIC FOUNDATION RECOMMENDATIONS

End Bent One:

Strip footings could be placed on rock near elevation 84' left to 82' right. Driven piles would penetrate to essentially the same elevation.

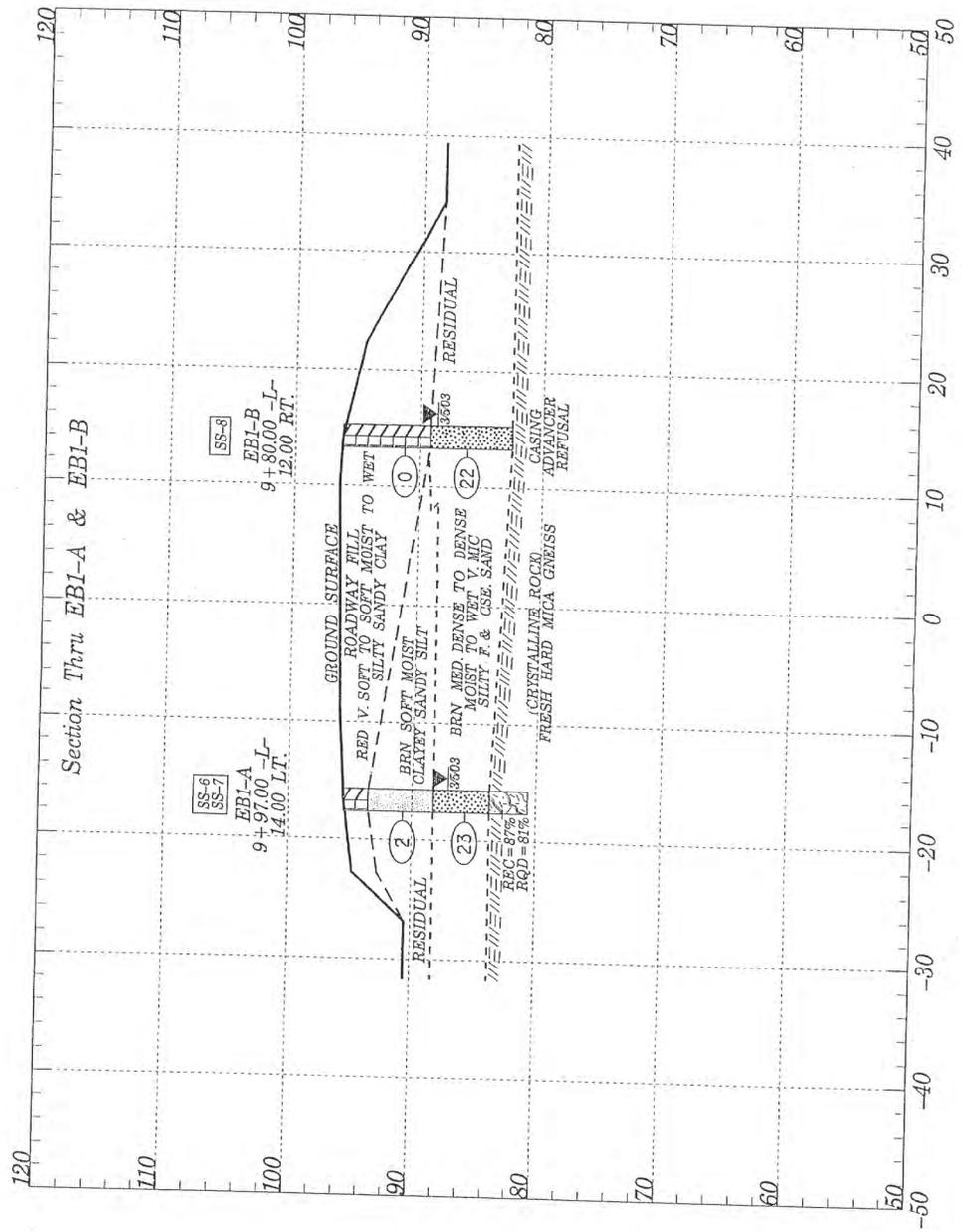
End Bent Two:

A footing might be founded at elevation 82' left (although weaker materials occur below), but the highest feasible elevation on the right side is 77'. This is about 10' below the stream elevation. A pile bent or footing on piles may be a better option. The average pile tip elevation would be near 75'.

Clint Little



Area Engineering Geologist



**State of North Carolina
Department of Transportation
Subcontractor Payment Information**

Submit with Invoice To: Mr. Steve Rackley, Division Bridge Engineer
North Carolina Department of Transportation
P.O. Box 47
Shelby, NC 28151-0047

Firm Invoice No. Reference _____
 NCDOT PO / Contract Number _____
 WBS No. (State Project No.) _____
 Date of Invoice _____
 Signed _____

Invoice Line Item Reference	Payer Name	Payer Federal Tax Id	Subcontractor / Subconsultant / Material Supplier Name	Subcontractor / Subconsultant / Material Supplier Federal Tax Id	Amount Paid To Subcontractor / Subconsultant / Material Supplier This Invoice	Date Paid To Subcontractor / Subconsultant / Material Supplier This Invoice
_____	_____	_____	_____	_____	_____	_____
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_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

Total Amount Paid to Subcontractor Firms \$ _____

NOTE: - These documents are scanned into our Fiscal program. Please do not highlight or shade the figures.

I certify that this information accurately reflects actual payments made and the dates the payments were made to Subcontractors/Subconsultants/Material Suppliers on the above referenced project.

Signature _____

Title _____

LISTING OF DBE SUBCONTRACTORS

Firm Name and Address		Item No.	Item Description	* Agreed upon Unit Price	** Dollar Volume of Item
Name					
Address					
Name					
Address					
Name					
Address					
Name					
Address					
Name					
Address					

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

Firm Name and Address		Item No.	Item Description	* Agreed upon Unit Price	** Dollar Volume of Item
Name					
Address					
Name					
Address					
Name					
Address					
Name					
Address					
Name					
Address					

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

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

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

** - *If firm is a Material Supplier Only, show Dollar Volume as 60% of Agreed Upon Amount from Letter of Intent. If firm is a Manufacturer, show Dollar Volume as 100% of Agreed Upon Amount from Letter of Intent.*

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.

Contract No. _____

Rev. 7-12-10

County _____

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

CORPORATION

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

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

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

SIGNATURE OF CONTRACTOR

Full name of Corporation

Address as Prequalified

Attest _____
Secretary/Assistant Secretary
Select appropriate title

By _____
President/Vice President/Assistant Vice President
Select appropriate title

Print or type Signer's name

Print or type Signer's name

CORPORATE SEAL

AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the

_____ day of _____ 20__.

NOTARY SEAL

Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

Contract No. _____

Rev. 7-12-10

County _____

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

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

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

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

SIGNATURE OF CONTRACTOR

_____ Full Name of Partnership

_____ Address as Prequalified

_____ By _____
Signature of Witness Signature of Partner

_____ Print or type Signer's name

_____ Print or type Signer's name

AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the _____ day of _____ 20__.

NOTARY SEAL

_____ Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

Contract No. _____

Rev. 7-12-10

County _____

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

LIMITED LIABILITY COMPANY

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

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

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

SIGNATURE OF CONTRACTOR

Full Name of Firm

Address as Prequalified

Signature of Manager

Signature of Witness

Individually

Print or type Signer's name

Print or type Signer's Name

AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the _____
_____ day of _____ 20__.

NOTARY SEAL

Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

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

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

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

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

SIGNATURE OF CONTRACTOR

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

(1) _____
Name of Joint Venture

(2) _____
Name of Contractor

Address as Prequalified

Signature of Witness or Attest By Signature of Contractor

Print or type Signer's name Print or type Signer's name

If Corporation, affix Corporate Seal and

(3) _____
Name of Contractor

Address as Prequalified

Signature of Witness or Attest By Signature of Contractor

Print or type Signer's name Print or type Signer's name

If Corporation, affix Corporate Seal and

(4) _____
Name of Contractor (for 3 Joint Venture only)

Address as Prequalified

Signature of Witness or Attest By Signature of Contractor

Print or type Signer's name Print or type Signer's name

If Corporation, affix Corporate Seal

NOTARY SEAL

Affidavit must be notarized for Line (2)

Subscribed and sworn to before me this _____ day of _____ 20____

Signature of Notary Public
of _____ County
State of _____
My Commission Expires: _____

NOTARY SEAL

Affidavit must be notarized for Line (3)

Subscribed and sworn to before me this _____ day of _____ 20____

Signature of Notary Public
of _____ County
State of _____
My Commission Expires: _____

NOTARY SEAL

Affidavit must be notarized for Line (4)

Subscribed and sworn to before me this _____ day of _____ 20____

Signature of Notary Public
of _____ County
State of _____
My Commission Expires: _____

Contract No. _____

Rev. 7-12-10

County _____

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

INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME

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

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

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

SIGNATURE OF CONTRACTOR

Name of Contractor

_____ Individual name

Trading and doing business as

_____ Full name of Firm

_____ Address as Prequalified

_____ Signature of Witness

_____ Signature of Contractor, Individually

_____ Print or type Signer's name

_____ Print or type Signer's name

AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the

NOTARY SEAL

_____ day of _____ 20__.

_____ Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

Contract No. _____

Rev. 7-12-10

County _____

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

INDIVIDUAL DOING BUSINESS IN HIS OWN NAME

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

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

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

SIGNATURE OF CONTRACTOR

Name of Contractor _____
Print or type Individual name

Address as Prequalified

Signature of Contractor, Individually

Print or type Signer's Name

Signature of Witness

Print or type Signer's name

AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the _____ day of _____ 20__.

NOTARY SEAL

Signature of Notary Public

of _____ County

State of _____

My Commission Expires: _____

DEBARMENT CERTIFICATION

Conditions for certification:

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

DEBARMENT CERTIFICATION

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

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

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

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

Check here if an explanation is attached to this certification.



LETTER OF INTENT TO PERFORM AS A SUBCONTRACTOR

CONTRACT:

NAME OF BIDDER:

The undersigned intends to perform work in connection with the above contract upon execution of the bid and subsequent award of contract by the Board of Transportation as:

Name of MBE/WBE/DBE Subcontractor _____

Address _____

City _____ State _____ Zip _____

Please check all that apply:

Minority Business Enterprise (MBE) _____

Women Business Enterprise (WBE) _____

Disadvantaged Business Enterprise (DBE) _____

The MBE /WBE /DBE status of the above named subcontractor is certified by the North Carolina Department of Transportation. The above named subcontractor is prepared to perform the described work listed on the attached MBE/WBE/DBE Commitment Items sheet, in connection with the above contract upon execution of the bid and subsequent award of contract by the Board of Transportation. The above named subcontractor is prepared to perform the described work at the estimated Commitment Total for Subcontractor Price identified on the MBE/WBE/DBE Commitment Items sheet and amount indicated below.

Commitment Total based on estimated Unit Prices and Quantities on the "attached" MBE/WBE/DBE Commitment Items sheet. Amount \$ _____

The above named bidder and subcontractor mutually accepts the Commitment Total estimated for the Unit Prices and Quantities. This commitment total is based on estimated quantities only and most likely will vary up or down as the project is completed. Final compensation will be based on actual quantities of work performed and accepted during the pursuance of work. The above listed amount represents the entire dollar amount quoted based on these estimated quantities. No conversations, verbal agreements, and/or other forms of non-written representations shall serve to add, delete, or modify the terms as stated.

This document shall not serve in any manner as an actual subcontract between the two parties. A separate subcontractor agreement will describe in detail the contractual obligations of the bidder and the MBE/WBE/DBE subcontractor.

Affirmation

The above named MBE/ WBE/ DBE subcontractor affirms that it will perform the portion(s) of the contract for the estimated dollar value as stated above.

Name of MBE/ WBE/ DBE Subcontractor

Name of Bidder

Signature / Title

Signature / Title

Date

Date

County : Catawba

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
ROADWAY ITEMS						
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.	
0003	0030000000-N	SP	BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (13+84)	Lump Sum	L.S.	
0004	0043000000-N	226	GRADING	Lump Sum	L.S.	
0005	0318000000-E	SP	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	20 TON		
0006	0320000000-E	SP	FOUNDATION CONDITIONING FABRIC	50 SY		
0007	0343000000-E	SP	15" SIDE DRAIN PIPE	42 LF		
0008	0372000000-E	SP	18" RC PIPE CULVERTS, CLASS III	27 LF		
0009	0448300000-E	SP	18" RC PIPE CULVERTS, CLASS IV	39 LF		
0010	0588000000-E	SP	18" CS PIPE CULVERTS, 0.064" THICK	13 LF		
0011	0636000000-E	SP	*** CS PIPE ELBOWS, ***** THICK (18", 0.064")	2 EA		
0012	1220000000-E	545	INCIDENTAL STONE BASE	83 TON		
0013	1489000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0B	253 TON		
0014	1498000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B	155 TON		
0015	1519000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	262 TON		
0016	1560000000-E	620	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	35 TON		
0017	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	3 EA		
0018	2366000000-N	840	FRAME WITH TWO GRATES, STD 840.24	1 EA		

County : Catawba

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0019	2367000000-N	840	FRAME WITH TWO GRATES, STD 840.29	2 EA		
0020	2556000000-E	846	SHOULDER BERM GUTTER	26 LF		
0021	2612000000-E	848	6" CONCRETE DRIVEWAY	131 SY		
0022	3030000000-E	862	STEEL BM GUARDRAIL	125 LF		
0023	3150000000-N	862	ADDITIONAL GUARDRAIL POSTS	5 EA		
0024	3165000000-N	SP	GUARDRAIL ANCHOR UNITS, TYPE ***** (350-TL-2)	4 EA		
0025	3215000000-N	862	GUARDRAIL ANCHOR UNITS, TYPE III	4 EA		
0026	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	374 SF		
0027	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	121 SF		
0028	4445000000-E	1145	BARRICADES (TYPE III)	96 LF		
0029	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	4,240 LF		
0030	6000000000-E	1605	TEMPORARY SILT FENCE	800 LF		
0031	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	35 TON		
0032	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	140 TON		
0033	6012000000-E	1610	SEDIMENT CONTROL STONE	70 TON		
0034	6015000000-E	1615	TEMPORARY MULCHING	1 ACR		
0035	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	50 LB		
0036	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEED- ING	0.2 TON		

County : Catawba

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0037	6024000000-E	1622	TEMPORARY SLOPE DRAINS	50 LF		
0038	6027000000-N	1622	INLET PROTECTION AT TEMPORARY SLOPE DRAINS	2 EA		
0039	6029000000-E	SP	SAFETY FENCE	300 LF		
0040	6030000000-E	1630	SILT EXCAVATION	25 CY		
0041	6036000000-E	1631	MATTING FOR EROSION CONTROL	735 SY		
0042	6042000000-E	1632	1/4" HARDWARE CLOTH	90 LF		
0043	6071012000-E	SP	COIR FIBER WATTLE	5 LF		
0044	6071020000-E	SP	POLYACRYLAMIDE (PAM)	20 LB		
0045	6084000000-E	1660	SEEDING & MULCHING	1 ACR		
0046	6087000000-E	1660	MOWING	1 ACR		
0047	6090000000-E	1661	SEED FOR REPAIR SEEDING	50 LB		
0048	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	0.25 TON		
0049	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	50 LB		
0050	6108000000-E	1665	FERTILIZER TOPDRESSING	0.25 TON		
0051	6114000000-N	SP	SPECIALIZED HAND MOWING	10 HR		
0052	6117000000-N	SP	RESPONSE FOR EROSION CONTROL	5 EA		
0053	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (13+84)	Lump Sum	L.S.	
0054	8105520000-E	SP	3'-0" DIA DRILLED PIERS IN SOIL	25.5 LF		
0055	8105620000-E	SP	3'-0" DIA DRILLED PIERS NOT IN SOIL	21 LF		

County : Catawba

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0056	8111200000-E	SP	PERMANENT STEEL CASING FOR 3'-0" DIA DRILLED PIER	25.5 LF		
0057	8115000000-N	SP	CROSSHOLE SONIC LOGGING	1 EA		
0058	8121000000-N	412	UNCLASSIFIED STRUCTURE EXCAVA- TION AT STATION ***** (13+84)	Lump Sum	L.S.	
0059	8182000000-E	420	CLASS A CONCRETE (BRIDGE)	43.5 CY		
0060	8210000000-N	422	BRIDGE APPROACH SLABS, STATION ***** (13+84)	Lump Sum	L.S.	
0061	8217000000-E	425	REINFORCING STEEL (BRIDGE)	10,943 LB		
0062	8238000000-E	425	SPIRAL COLUMN REINFORCING STEEL (BRIDGE)	981 LB		
0063	8364000000-E	SP	HP12X53 STEEL PILES	180 LF		
0064	8505000000-E	SP	VERTICAL CONCRETE BARRIER RAIL	180.58 LF		
0065	8594000000-E	876	RIP RAP, CLASS B	6 TON		
0066	8608000000-E	876	RIP RAP CLASS II (2'-0" THICK)	185 TON		
0067	8622000000-E	876	FILTER FABRIC FOR DRAINAGE	225 SY		
0068	8657000000-N	430	ELASTOMERIC BEARINGS	Lump Sum	L.S.	
0069	8762000000-E	430	3'-0" X 1'-9" PRESTRESSED CONC CORED SLABS	270 LF		
0070	8763000000-E	430	3'-0" X 2'-0" PRESTRESSED CONC CORED SLABS	540 LF		
0071	8802030000-E	SP	SEGMENTAL GRAVITY RETAINING WALLS	441 SF		



TOTAL BID FOR PROJECT: _____

CONTRACTOR _____

ADDRESS _____

Federal Identification Number _____ Contractors License Number _____

Authorized Agent _____ Title _____

Signature _____ Date _____

Witness _____ Title _____

Signature _____ Date _____

CORPORATE SEAL

Contract No. _____
County _____

Rev. 4-19-11

STATE OF NORTH CAROLINA

BID BOND

Principal: _____
Name of Principal Contractor

Surety: _____
Name of Surety

Contract Number: _____ County: _____

Date of Bid: _____

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL CONTRACTOR (hereafter, PRINCIPAL) and SURETY above named, are held and firmly bound unto the Department of Transportation in the full and just sum of five (5) percent of the total amount bid by the Principal for the project stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

NOW, THEREFORE, the condition of this obligation is: the Principal shall not withdraw its bid within sixty (60) days after the opening of the bids, or within such other time period as may be provided in the proposal, and if the Board of Transportation shall award a contract to the Principal, the Principal shall, within fourteen (14) calendar days after written notice of award is received by him, provide bonds with good and sufficient surety, as required for the faithful performance of the contract and for the protection of all persons supplying labor, material, and equipment for the prosecution of the work. In the event the Principal requests permission to withdraw his bid due to mistake in accordance with the provisions of Article 103-3 of the *Standard Specifications for Roads and Structures*, the conditions and obligations of this Bid Bond shall remain in full force and effect until the Department of Transportation makes a final determination to either allow the bid to be withdrawn or to proceed with award of the contract. In the event a determination is made to award the contract, the Principal shall have fourteen (14) calendar days to comply with the requirements set forth above. In the event the Principal withdraws its bid after bids are opened except as provided in Article 103-3, or after award of the contract has been made fails to execute such additional documents as may be required and to provide the required bonds within the time period specified above, then the amount of the bid bond shall be immediately paid to the Department of Transportation as liquidated damages.

IN TESTIMONY WHEREOF, the Principal and Surety have caused these presents to be duly signed and sealed.

This the _____ day of _____, 20 _____

Surety

By _____
General Agent or Attorney-in-Fact Signature

Seal of Surety

Print or type Signer's Name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

CORPORATION

SIGNATURE OF CONTRACTOR (Principal)

Full name of Corporation

Address as prequalified

By _____
Signature of **President, Vice President, Assistant Vice President**
Select appropriate title

Print or type Signer's name

Affix Corporate Seal

Attest _____
Signature of **Secretary, Assistant Secretary**
Select appropriate title

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

LIMITED LIABILITY COMPANY

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Full name of Firm

Address as prequalified

**Signature of Member/
Manager/Authorized Agent**

Individually

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Individual Name

Trading and doing business as

Full name of Firm

Address as prequalified

Signature of Contractor

Individually

Print or type Signer's name

Signature of Witness

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

INDIVIDUAL DOING BUSINESS IN HIS OWN NAME

SIGNATURE OF CONTRACTOR (Principal)

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

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

PARTNERSHIP

SIGNATURE OF CONTRACTOR (Principal)

Full name of Partnership

Address as prequalified

By _____
Signature of Partner

Print or type Signer's name

Signature of Witness

Print or type Signer's name

