STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

DIVISION 6

CONTRACT PROPOSAL

TIP NUMBER:	**B-5411**
FA NUMBER:	**BRZ-1318(13)**
WBS ELEMENT:	**45427.3FD1**
ROUTE:	**SR 1318 (River Rd)**
COUNTY:	**Bladen**
DESCRIPTION:	**Replace Bridge # 124 over Phillips Creek**
BID OPENING:	**September 24, 2014 at 10:00 AM**

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. BIDDERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOT WITHSTANDING THESE LIMITATIONS ON BIDDING, THE BIDDER WHO IS AWARDED ANY PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING, REGARDLESS OF FUNDING SOURCES. A NC GENERAL CONTRACTOR'S LICENSE, HIGHWAY CLASSIFICATION, IS REQUIRED.

_____

NAME OF BIDDER **N.C. CONTRACTOR'S LICENSE NUMBER**

_____

ADDRESS OF BIDDER

RETURN BIDS TO:

N. C. DEPARTMENT OF TRANSPORTATION
Attn: Tom Hay
558 Gillespie St., 28301
Fayetteville, NC

CONTENTS

INSTRUCTIONS TO BIDDERS

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

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

1. The bid sheet furnished by NCDOT with the proposal shall be used and shall not be altered in any manner. **DO NOT SEPARATE THE BID SHEET FROM THE PROPOSAL!**
2. All entries on the bid sheet, including signatures, shall be written in ink.
3. The Bidder shall submit a unit price for every item on the bid form. The unit prices for the various contract items shall be written in figures. *****Unit Prices shall be rounded off by the bidder to contain no more than FOUR decimal places.*****
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 SIX ENGINEER'S OFFICE AT 558 Gillespie St., 28301 (Delivery) Fayetteville, NC BY 10:00 AM ON SEPTEMBER 24 2014.**
12. The sealed bid must display the following statement on the front of the sealed envelope:

    ATTN: Tom Hay
    QUOTATION FOR REPLACEMENT OF BRIDGE #124
    PHILLIPS CREEK IN BLADEN COUNTY
    TO BE OPENED AT 10:00 AM, SEPTEMBER 24, 2014

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

    NC DEPARTMENT OF TRANSPORTATION
    ATTN: Tom Hay
    558 Gillespie St., 28301
    Fayetteville, NC

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 2012. The lowest responsible bidder will be notified that his bid has been accepted and that he has been awarded the contract. NCDOT reserves the right to reject all bids.

PROJECT SPECIAL PROVISIONS - GENERAL

DIVISION LET CONTRACT PREQUALIFICATION

(07-01-14) SPD 01-410

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

PRE-BID CONFERENCE:

All prospective bidders are to meet for the Pre-Bid Conference, at 10:00 AM, September 15, 2014. in the Division 6 Conference Room, 558 Gillespie St., 28301 Fayetteville, NC
This Conference will be conducted by Department personnel for the purpose of providing additional information about the project and to give Bidders an opportunity to ask any questions they may have.
Only bids received from Bidders who have attended and properly registered at the Pre-Bid Conference will be considered.
No questions concerning the project will be answered by any Department personnel at any time except at the Pre-Bid Conference.
Attendance at the Pre-Bid Conference will not meet the requirements of proper registration unless the individual attending has registered at the Conference in accordance with the following:
1. The individual signs his or her name on the official roster;
2. The individual writes in the name and address of the company he or she represents, and
3. Only one company is shown as being represented by the individual attending.
4. The individual is an officer or permanent employee of the firm they represent.

BIDS:

In accordance with GS 136-28.1(b), if the total bid amount of the contract exceeds $2,500,000.00, the bid will not be considered for award.

REJECTION OF BIDS:

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

CONTRACT PAYMENT AND PERFORMANCE BOND:

The provisions of Section 103-7 & 103-9 shall apply with the following additions:

Contract Payment Bonds and Contract Performance Bonds must be provided for all projects of $300,000.00 or more.

Revise the *Standard Specifications* as follows:
Page 1-25, 103-9 Failure to Furnish Contract Bonds

Replace Board of Transportation with Division Engineer.

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

OFFSITE DETOUR - NOTIFICATIONS

In order to have time to adequately reroute school buses, it will be required of the Project Contractor to contact the Bladen County School system at (910) 862-4136 at least one month prior to road closure.

The Project Contractor is required to contact Bladen County Emergency Services at (910) 862-6974 at least one month prior to road closure, in order for the agency to make the necessary temporary assignments to primary response units.

GENERAL REQUIREMENTS:

A. SCOPE OF WORK:

This work shall consist of furnishing and installing a 20'-1" X 12'-6" CAA Structural Plate Pipe Arch culvert with baffles and aluminum headwalls and wingwalls, removal of the existing structure; debris removal; supplemental clearing and grubbing; grading, excavation and embankment; guardrail; roadway base course and pavement; placement of rip rap; temporary erosion control; seeding and mulching; and all other incidental items necessary to complete the project as specified and shown on the plans.

Only the control points with a reference station and benchmark location shall be furnished on an initial one time basis. All other engineering, surveying, layout and measurements shall be the responsibility of the Contractor.

B. LOCATION AND DESCRIPTION:

The existing bridge is located on SR 1318 over Phillips Creek and consists of one span @ 47'-2". It has a prestressed concrete cored slab superstructure supported on a substructure, consisting of concrete caps on steel piles. The bridge deck has a clear roadway width of 24.8 feet. This bridge spans a 45' concrete spillway and is located at Station 15+43.05 –L-. The existing bridge and spillway are to be removed.

NOTICE: The contractor is required to salvage in a satisfactory, workmanlike manner, the cored slabs (10 total) of the existing bridge, along with the guardrail posts and rails of the superstructure; then, load and transport said materials to the NCDOT Bladen County Maintenance Facility yard, located at: 5749 US 701 North, Elizabethtown, NC 28337. It is required of the Contractor to notify Mr. Ken Clark, PE (Bladen County Maintenance Engineer) at 910-862-3396, or Mr. Darren Pittman (Division Bridge Engineer) at 910-829-6345 during normal business hours, at least 48 hours, minimum, prior to delivery of the structure materials. The Department (NCDOT) will unload the salvaged materials upon delivery. This work shall be considered incidental to the Removal of Existing Structure at Station 15+43.05 -L-. No direct compensation will be made for this work.

The existing structure shall be replaced by a 20'-1" X 12'-6" Aluminum Structural Plate Pipe Arch culvert with baffles and aluminum headwalls and wingwalls at Station 16+80.00 -L-.

C. CONTRACT TIME AND LIQUIDATED DAMAGES:

The date of availability for this contract is November 3, 2014..

The completion date for this contract is the date that is June 26, 2015.

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

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

INTERMEDIATE CONTRACT TIME & LIQUIDATED DAMAGES

The date of availability for this intermediate time shall be the date the road (SR 1318) is closed.

The completion date of the intermediate shall be one hundred twenty (120) consecutive days to include the date the road is closed.

The liquidated damages for this intermediate time shall be One Thousand Dollars ($1,000.00) per day.

D. CONSTRUCTION METHODS:

The Contractor shall perform all construction activities in accordance with the applicable requirements of the NCDOT Standard Specifications for Roads and Structures dated July 2012, except as otherwise specified herein.

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

E. SITE INVESTIGATION AND REPRESENTATION

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

F. CONTROL OF EROSION, SILT AND POLLUTION

Control of erosion, siltation and pollution shall meet the requirements of section 107-12 of the Standard Specifications for Roads and Structures dated January 2012, 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 Resident Engineer, at least two to three weeks in advance of proposed utilization, for approval by the Department. Approval must be obtained before construction is started on the alternate plan.

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

G. MATERIALS AND TESTING

The Engineer reserves the right to perform all sampling and testing in Accordance with Section 106 of the Standard Specifications and the Department's "Material and Tests Manual". However, the Engineer may reduce the frequency of sampling and testing where he deems it appropriate for the project under construction. All material must be approved by the Engineer prior to being used.

H. INDEMNIFICATION

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

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

EMPLOYMENT:

(11-15-11) (Rev. 1-17-12) 108, 102 SP1 G184

Revise the *2012 Standard Specifications* as follows:

Page 1-20, Subarticle 102-15(O), delete and replace with the following:

(O) Failure to restrict a former Department employee as prohibited by Article 108-5.

Page 1-65, Article 108-5 Character of Workmen, Methods, and Equipment, line 32, delete all of line 32, the first sentence of the second paragraph and the first word of the second sentence of the second paragraph.

STATE HIGHWAY ADMINISTRATOR TITLE CHANGE:

(9-18-12) SP1 G185

Revise the *2012 Standard Specifications* as follows:

Replace all references to "State Highway Administrator" with "Chief Engineer".

MAINTENANCE OF THE PROJECT:

(11-20-07) (Rev. 1-17-12) 104-10 SP1 G125

Revise the *2012 Standard Specifications* as follows:

Page 1-35, Article 104-10 Maintenance of the Project, line 25, add the following after the first sentence of the first paragraph:

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

Page 1-35, Article 104-10 Maintenance of the Project, line 30, 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 1-35, Article 104-10 Maintenance of the Project, lines 42-44, replace the last sentence of the last 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.

SUBSURFACE INFORMATION:

(7-1-95) 450 SP1 G112 B

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

NO MAJOR CONTRACT ITEMS:

(2-19-02) (Rev 8-21-07) SP1 G31

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

NO SPECIALTY ITEMS:

(7-1-95) SP1 G34

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

FUEL PRICE ADJUSTMENT:

(11-15-05) (Rev. 1-17-12) 109-8 SP1 G43

Revise the *2012 Standard Specifications* as follows:

Page 1-83, Article 109-8, Fuel Price Adjustments, add the following:

The base index price for **DIESEL #2 FUEL** is $**2.9777** per gallon.

Where any of the following are included as pay items in the contract, they will be eligible for fuel price adjustment.

The pay items and the fuel factor used in calculating adjustments to be made will be as follows:

Description	**Units**	**Fuel Usage Factor Diesel**
Asphalt Concrete Base Course, Type B25.0B	Gal/Ton	2.90
Asphalt Concrete Intermediate Course, Type I9.0B	Gal/Ton	2.90
Asphalt Concrete Surface Course, Type S9.5B	Gal/Ton	2.90

DISADVANTAGED BUSINESS ENTERPRISE (DIVISIONS):

(10-16-07)(Rev.12-17-13) 102-15(J) 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.

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.

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.
http://connect.ncdot.gov/projects/construction/Construction%20Forms/DBE%20MBE%20WBE%20Replacement%20Request%20Form.pdf

SAF *Subcontract Approval Form* - Form required for approval to sublet the contract. http://connect.ncdot.gov/projects/construction/Construction%20Forms/Subcontract%20Approval%20Form%20Rev.%202012.zip

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

Letter of Intent - Form signed by the Contractor and the 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://connect.ncdot.gov/letting/LetCentral/Letter%20of%20Intent%20to%20Perform%20as%20a%20Subcontractor.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://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/08%20DBE%20Subcontractors%20(Federal).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://connect.ncdot.gov/business/SmallBusiness/Documents/DBE%20Subcontractor%20Quote%20Comparison%20Example.xls

DBE Goal

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

Disadvantaged Business Enterprises goal set at 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. Additional DBE subcontractor participation submitted at the time of bid will be used toward the Department's 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:

(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 DBE participation, they shall indicate this on the *Listing of DBE Subcontractors* by entering the word "None" or the number "0." This form shall be completed in its entirety. **Blank forms will not be deemed to represent zero participation**. Bids submitted that do not have 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.

(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,* entries on the *Listing of DBE Subcontractors* are not required, however any DBE participation that is achieved during the project shall be reported in accordance with requirements contained elsewhere in the special provision.

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 (No. of Copies) 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, written notices, use of verifiable electronic means 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.

(1) Where appropriate, break 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.

(2) Negotiate with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be sublet includes potential for DBE participation (2^{nd} and 3^{rd} tier subcontractors).

(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 the 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 102-15(J) of the *2012 Standard Specifications* may be cause to disqualify the Contractor.

CERTIFICATION FOR FEDERAL-AID CONTRACTS:

(3-21-90) SP1 G85

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

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, *Disclosure Form to Report Lobbying*, in accordance with its instructions.

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

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

DOMESTIC STEEL:

(4-16-13) 106 SP1 G120

Revise the *2012 Standard Specifications* as follows:

P**age 1-49, Subarticle 106-1(B) Domestic Steel, lines 2-7,** replace the first paragraph with the following:

All steel and iron products that are permanently incorporated into this project shall be produced in the United States except minimal amounts of foreign steel and iron products may be used provided the combined material cost of the items involved does not exceed 0.1% of the total amount bid for the entire project or $2,500, whichever is greater. If invoices showing the cost of the material are not provided, the amount of the bid item involving the foreign material will be used for calculations. This minimal amount of foreign produced steel and iron products permitted for use is not applicable to high strength fasteners. Domestically produced high strength fasteners are required.

U.S. DEPARTMENT OF TRANSPORTATION HOTLINE:

(11-22-94) 108-5 SP1 G100

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

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

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

SUBMISSION OF RECORDS - FEDERAL-AID PROJECTS:

(7-17-07) (8-21-12) 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 - Davis Bacon and Related Act Provisions are exempt from this contract.

GIFTS FROM VENDORS AND CONTRACTORS:

(12-15-09) SP1 G152

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

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

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

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

EROSION AND SEDIMENT CONTROL/STORMWATER CERTIFICATION:

(1-16-07) (Rev 9-18-12) 105-16, 225-2, 16 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 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 C*ease 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
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) (Rev. 3-20-13) 105-16, 230, 801 SP1 G181

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 *2012 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.gov/doh/operations/dp_chief_eng/roadside/fieldops/downloads/Files/TurbidityReductionOptionSheet.pdf 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.

PROJECT SPECIAL PROVISIONS – ROADWAY

CLEARING AND GRUBBING - METHOD II:

(9-17-02) (Rev. 1-17-12) 200 SP2 R02A

Perform clearing on this project to the limits established by Method "II" shown on Standard Drawing No. 200.02 of the *2012 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.

SHOULDER AND FILL SLOPE MATERIAL:

(5-21-02) 235, 560 SP2 R45 A

Description

Perform the required shoulder and slope construction for this project in accordance with the applicable requirements of Section 560 and Section 235 of the *2012 Standard Specifications*.

Measurement and Payment

Where the material has been obtained from an authorized stockpile or from a borrow source and *Borrow Excavation* is not included in the contract, no direct payment will be made for this work, as the cost of this work will be part of the work being paid at the contract lump sum price for *Grading.*

No additional payment shall be made for Borrow Excavation for this project, as this item shall be considered incidental to the lump sum price for *Grading*.

SELECT MATERIAL, CLASS III, TYPE 3:

(1-17-12) 1016, 1044 SP10 R05

Revise the *2012 Standard Specifications* as follows:

Page 10-39, Article 1016-3, CLASS III, add the following after line 14:

Type 3 Select Material

Type 3 select material is a natural or manufactured fine aggregate material meeting the following gradation requirements and as described in Sections 1005 and 1006:

Percentage of Total by Weight Passing							
3/8"	#4	#8	#16	#30	#50	#100	#200
100	95-100	65-100	35-95	15-75	5-35	0-25	0-8

Page 10-39, Article 1016-3, CLASS III, line 15, replace "either type" with "Type 1, Type 2 or Type 3".

Page 10-62, Article 1044-1, line 36, delete the sentence and replace with the following:

Subdrain fine aggregate shall meet Class III select material, Type 1 or Type 3.

Page 10-63, Article 1044-2, line 2, delete the sentence and replace with the following:

Subdrain coarse aggregate shall meet Class V select material.

#57 STONE:

7-18-06 SPI0 -1

Description

The Contractor shall place #57 stone in accordance with the details in the plans and the following provision.

Materials

Item	**Section**
# 57 Stone	1005

Construction Methods

The stone shall be placed and compacted as directed by the Engineer.

Measurement and Payment

#57 Stone will be measured and paid in tons that are completed and accepted. The stone will be measured by being weighed in trucks on certified platform scales or other certified weighing devices. The price and payment will be full compensation for furnishing, hauling, placing, and all incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
#57 Stone	Ton

INCIDENTAL STONE BASE:

(7-1-95) (Rev.8-21-12) 545 SP5 R28R

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 Section 545 of the *2012 Standard Specifications.*

Measurement and Payment

Incidental Stone Base will be measured and paid in accordance with Article 545-6 of the *2012 Standard Specifications*.

FLOWABLE FILL:

(9-17-02) (Rev 1-17-12) 300, 340, 450, 1000, 1530, 1540, 1550 SP3 R30

Description

This work consists of all work necessary to place flowable fill in accordance with these provisions, the plans, and as directed.

Materials

Refer to Division 10 of the *2012 Standard Specifications*.

Item	**Section**
Flowable Fill	1000-6

Construction Methods

Discharge flowable fill material directly from the truck into the space to be filled, or by other approved methods. The mix may be placed full depth or in lifts as site conditions dictate.

Measurement and Payment

At locations where flowable fill is called for on the plans and a pay item for flowable fill is included in the contract, *Flowable Fill* will be measured in cubic yards and paid as the actual number of cubic yards that have been satisfactorily placed and accepted. Such price and payment will be full compensation for all work covered by this provision including, but not limited to, the mix design, furnishing, hauling, placing and containing the flowable fill.

Payment will be made under:

Pay Item	**Pay Unit**
Flowable Fill	Cubic Yard

IMPERVIOUS DIKE:

Description

This work consists of furnishing, installing, maintaining, and removing an *Impervious Dike* for the purpose of diverting normal stream flow around the construction site. The Contractor shall construct an impervious dike in such a manner approved by the Engineer. The impervious dike shall not permit seepage of water into the construction site or contribute to siltation of the stream. The impervious dike shall be constructed of an acceptable material in the locations noted on the plans or as directed.

Materials

Acceptable materials shall include but not be limited to steel sheet piles, Aqua Barriers, sandbags, and/or the placement of an acceptable size stone lined with polypropylene or other impervious geotextile.

Earth material shall not be used to construct an impervious dike when it is in direct contact with the stream unless vegetation can be established before contact with the stream takes place.

Measurement and Payment

Impervious Dike will be measured and paid as the actual number of linear feet of impervious dike(s) constructed, measured in place from end to end of each separate installation that has been completed and accepted. Such price and payment will be full compensation for all work including but not limited to furnishing materials, construction, maintenance, and removal of the impervious dike.

Payment will be made under:

Pay Item	Pay Unit
Impervious Dike	Linear Foot

FLOW DIVERSION – BYPASS PUMPING

Purpose

A bypass pump and an impervious dike divert the flow of the watercourse from the inlet of the pipe to the outlet of the pipe. This is a water-to-water operation and care should be taken that the discharge is at a low flow rate, to minimize turbidity at the outlet of the bypass pipe and/or to minimize eroding the channel.

Conditions Where Practice Applies

When another type of diversion is not physically possible or practical.
When the repair or construction activities will not require pumping for an extended period of time.

Conditions Where Practice Does Not Apply

When the discharge location can not be adequately stabilized
When ponding of the stream, to adequately submerge the pump suction line, is not allowed or not practical.
When the normal flow of the stream cannot be handled by the typical bypass pump.

Construction

Step 1 – Set up bypass pump and temporary piping. Place outlet of temporary pipe to minimize erosion at discharge site or provide temporary energy dissipation measures. Firmly anchor pump and piping.

Step 2 – Construct outlet protection if needed.

Step 3 – Construct impervious dike upstream of work area to impound water for bypass pump intake. Use a floating intake for pumps where possible.

Step 4 – Construct other impervious dike(s) required to isolate work area. Stated work will include all material, labor and equipment needed to satisfy the OSHA safety standards and also to satisfy the guidelines of the project environmental permits. A copy of the environmental permits shall be onsite during construction activities.

Step 5 – Check operation of pump and piping system Step 4 –

Step 6 – Upon completion of construction, remove impervious dike, bypass pump, and temporary pipe.

> **Note:** A general layout sketch for Bypass Pumping may be found within the NCDOT manual "Best Management Practices for Construction and Maintenance Activities", found at: **http://www.ncdot.org/doh/operations/BMP_manual/** .

Maintenance

- Routinely inspect bypass pump and temporary piping to ensure proper operation.
- Inspect impervious dike for leaks and repair any damage.
- Inspect discharge point for erosion and water turbidity. The Contractor's work shall be halted if the turbidity reaches in excess of 50 NTUs. The Contractor shall not resume work until corrections are made.
- Ensure flow is adequately diverted through pipe.

Measurement and Payment

Flow Diversion – Bypass Pumping will be not be measured, but the process and procedure shall be in accordance with the information and standard general layout sketch so noted above and shall be recognized as a LUMP SUM payment unit. Such price and payment will be full compensation for all work including but not limited to furnishing materials, construction, operation, maintenance, and removal of the bypass pumping system.

Payment will be made under:

Pay Item	Pay Unit
Generic Erosion Control Item - Bypass Pumping	Lump Sum

MATERIALS:

(2-21-12) (Rev. 3-19-13) 1000, 1005, 1078, 1080, 1081, 1087, 1092 SP10 R01

Revise the *2012 Standard Specifications* as follows:

Page 10-23, Table 1005-1, AGGREGATE GRADATION-COARSE AGGREGATE, replace with the following:

TABLE 1005-1
AGGREGATE GRADATION - COARSE AGGREGATE

Std. Size #	Percentage of Total by Weight Passing											Remarks
	2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#10	#16	#40	#200	
4	100	90-100	20-55	0-15	-	0-5	-	-	-	-	-	A	Asphalt Plant Mix
467M	100	95-100	-	35-70	-	0-30	0-5	-	-	-	-	A	Asphalt Plant Mix
5	-	100	90-100	20-55	0-10	0-5	-	-	-	-	-	A	AST, Sediment Control Stone
57	-	100	95-100	-	25-60	-	0-10	0-5	-	-	-	A	AST, Str. Concrete, Shoulder Drain, Sediment Control Stone
57M	-	100	95-100	-	25-45	-	0-10	0-5	-	-	-	A	AST, Concrete Pavement
6M	-	-	100	90-100	20-55	0-20	0-8	-	-	-	-	A	AST
67	-	-	100	90-100	-	20-55	0-10	0-5	-	-	-	A	AST, Str. Concrete, Asphalt Plant Mix
78M	-	-	-	100	98-100	75-100	20-45	0-15	-	-	-	A	Asphalt Plant Mix, AST, Str. Conc, Weep Hole Drains
14M	-	-	-	-	-	100	35-70	5-20	-	0-8	-	A	Asphalt Plant Mix, AST, Weep Hole Drains, Str. Concrete
9	-	-	-	-	-	100	85-100	10-40	-	0-10	-	A	AST
ABC	-	100	75-97	-	55-80	-	35-55	-	25-45	-	14-30	4-12[B]	Aggregate Base Course, Aggregate Stabilization
ABC (M)	-	100	75-100	-	45-79	-	20-40	-	0-25	-	-	0-12[B]	Maintenance Stabilization
Light-weight[C]	-	-	-	-	-	80-100	5-40	0-20	-	0-10	-	0-2.5	AST

A. See Subarticle 1005-4(A).
B. See Subarticle 1005-4(B).
C. For Lightweight Aggregate used in Structural Concrete, see Subarticle 1014-2(E)(6).

Page 10-126, Table 1078-1, REQUIREMENTS FOR CONCRETE, replace with the following:

TABLE 1078-1 REQUIREMENTS FOR CONCRETE		
Property	**28 Day Design Compressive Strength 6,000 psi or less**	**28 Day Design Compressive Strength greater than 6,000 psi**
Maximum Water/Cementitious Material Ratio	0.45	0.40
Maximum Slump without HRWR	3.5"	3.5"
Maximum Slump with HRWR	8"	8"
Air Content (upon discharge into forms)	5 + 2%	5 + 2%

Page 10-151, Article 1080-4 Inspection and Sampling, lines 18-22, replace (B), (C) and (D) with the following:

(B) At least 3 panels prepared as specified in 5.5.10 of AASHTO M 300, Bullet Hole Immersion Test.

(C) At least 3 panels of 4"x6"x1/4" for the Elcometer Adhesion Pull Off Test, ASTM D4541.

(D) A certified test report from an approved independent testing laboratory for the Salt Fog Resistance Test, Cyclic Weathering Resistance Test, and Bullet Hole Immersion Test as specified in AASHTO M 300.

(E) A certified test report from an approved independent testing laboratory that the product has been tested for slip coefficient and meets AASHTO M253, Class B.

Page 10-162, Subarticle 1081-1(A) Classifications, lines 4-7, delete the second and third sentences of the description for Type 3A.

Page 10-162, Subarticle 1081-1(B) Requirements, lines 26-30, replace the second paragraph with the following:

For epoxy resin systems used for embedding dowel bars, threaded rods, rebar, anchor bolts and other fixtures in hardened concrete, the manufacturer shall submit test results showing that the bonding system will obtain 125% of the specified required yield strength of the fixture. Furnish certification that, for the particular bolt grade, diameter and embedment depth required, the anchor system will not fail by adhesive failure and that there is no movement of the anchor bolt. For certification and anchorage, use 3,000 psi as the minimum Portland cement concrete compressive strength used in this test. Use adhesives that meet Section 1081.

List the properties of the adhesive on the container and include density, minimum and maximum temperature application, setting time, shelf life, pot life, shear strength and compressive strength.

Page 10-169, Subarticle 1081-3(G) Anchor Bolt Adhesives, delete this subarticle.

Page 10-179, Subarticle 1087-4(A) Composition, lines 39-41, replace the third paragraph with the following:

All intermixed and drop-on glass beads shall not contain more than 75 ppm arsenic or 200 ppm lead.

Page 10-180, Subarticle 1087-4(B) Physical Characteristics, line 8, replace the second paragraph with the following:

All intermixed and drop-on glass beads shall comply with NCGS § 136-30.2 and 23 USC § 109(r).

Page 10-181, Subarticle 1087-7(A) Intermixed and Drop-on Glass Beads, line 24, add the following after the first paragraph:

Use X-ray Fluorescence for the normal sampling procedure for intermixed and drop-on beads, without crushing, to check for any levels of arsenic and lead. If any arsenic or lead is detected, the sample shall be crushed and repeat the test using X-ray Fluorescence. If the X-ray Fluorescence test shows more than a LOD of 5 ppm, test the beads using United States Environmental Protection Agency Method 6010B, 6010C or 3052 for no more than 75 ppm arsenic or 200 ppm lead.

Page 10-204, Subarticle 1092-2(A) Performance and Test Requirements, replace **Table 1092-3 Minimum Coefficient of Retroreflection for NC Grade A** with the following:

TABLE 1092-3
MINIMUM COEFFICIENT OF RETROREFLECTION FOR NC GRADE A
(Candelas Per Lux Per Square Meter)

Observation Angle, degrees	Entrance Angle, degrees	White	Yellow	Green	Red	Blue	Fluorescent Yellow Green	Fluorescent Yellow
0.2	-4.0	525	395	52	95	30	420	315
0.2	30.0	215	162	22	43	10	170	130
0.5	-4.0	310	230	31	56	18	245	185
0.5	30.0	135	100	14	27	6	110	81
1.0	-4.0	**120**	60	8	16	3.6	64	48
1.0	30.0	45	34	4.5	9	2	36	27

ASPHALT PAVEMENTS - SUPERPAVE:

(6-19-12) (Rev. 10-15-13) 605, 609, 610, 650 SP6 R01

Revise the *2012 Standard Specifications* as follows:

Page 6-3, Article 605-7 APPLICATION RATES AND TEMPERATURES, replace this article, including Table 601-1, with the following:

Apply tack coat uniformly across the existing surface at target application rates shown in Table 605-1.

TABLE 605-1
APPLICATION RATES FOR TACK COAT

Existing Surface	Target Rate (gal/sy)
	Emulsified Asphalt
New Asphalt	0.04 ± 0.01
Oxidized or Milled Asphalt	0.06 ± 0.01
Concrete	0.08 ± 0.01

Apply tack coat at a temperature within the ranges shown in Table 605-2. Tack coat shall not be overheated during storage, transport or at application.

TABLE 605-2
APPLICATION TEMPERATURE FOR TACK COAT

Asphalt Material	Temperature Range
Asphalt Binder, Grade PG 64-22	350 - 400°F
Emulsified Asphalt, Grade RS-1H	130 - 160°F
Emulsified Asphalt, Grade CRS-1	130 - 160°F
Emulsified Asphalt, Grade CRS-1H	130 - 160°F
Emulsified Asphalt, Grade HFMS-1	130 - 160°F
Emulsified Asphalt, Grade CRS-2	130 - 160°F

Page 6-7, Article 609-3 FIELD VERIFICATION OF MIXTURE AND JOB MIX FORMULA ADJUSTMENTS, lines 35-37, delete the second sentence of the second paragraph.

Page 6-18, Article 610-1 DESCRIPTION, lines 40-41, delete the last sentence of the last paragraph.

Page 6-19, Subarticle 610-3(A) Mix Design-General, line 5, add the following as the first paragraph:

Warm mix asphalt (WMA) is allowed for use at the Contractor's option in accordance with the NCDOT Approved Products List for WMA Technologies available at:

https://connect.ncdot.gov/resources/Materials/MaterialsResources/WMA%20Approved%20Lists.pdf

Page 6-21, Subarticle 610-3(C) Job Mix Formula (JMF), replace Table 610-1 with the following:

TABLE 610-1
DESIGN MIXING TEMPERATURE AT THE ASPHALT PLANT[A]

Binder Grade	HMA JMF Temperature	WMA JMF Temperature Range
PG 64-22	300ºF	225 - 275ºF
PG 70-22	315ºF	240 - 290ºF
PG 76-22	335ºF	260 - 310ºF

A. The mix temperature, when checked in the truck at the roadway, shall be within plus 15º and minus 25º of the temperature specified on the JMF.

Page 6-21, Subarticle 610-3(C) Job Mix Formula (JMF), lines 4-6, delete first sentence of the second paragraph. Line 7, in the second sentence of the second paragraph, replace "275ºF" with "275ºF or greater."

Page 6-22, Article 610-4 WEATHER, TEMPERATURE AND SEASONAL LIMITATIONS FOR PRODUCING AND PLACING ASPHALT MIXTURES, lines 15-17, replace the second sentence of the first paragraph with the following:

Do not place asphalt material when the air or surface temperatures, measured at the location of the paving operation away from artificial heat, do not meet Table 610-5.

Page 6-23, Article 610-4 WEATHER, TEMPERATURE AND SEASONAL LIMITATIONS FOR PRODUCING AND PLACING ASPHALT MIXTURES, replace Table 610-5 with the following:

TABLE 610-5
PLACEMENT TEMPERATURES FOR ASPHALT

Asphalt Concrete Mix Type	Minimum Surface and Air Temperature
B25.0B, C	35°F
I19.0B, C, D	35°F
SF9.5A, S9.5B	40°F
S9.5C, S12.5C	45°F
S9.5D, S12.5D	50°F

Page 6-26, Article 610-7 HAULING OF ASPHALT MIXTURE, lines 22-23, in the fourth sentence of the first paragraph replace "so as to overlap the top of the truck bed and" with "to".

Page 6-41, Subrticle 650-3(B) Mix Design Criteria, replace Table 650-1 with the following:

TABLE 650-1
OGAFC GRADATION CRITERIA

Grading Requirements	Total Percent Passing		
Sieve Size (mm)	*Type FC-1*	*Type FC-1 Modified*	*Type FC-2 Modified*
19.0	-	-	100
12.5	100	100	**80** - 100
9.50	75 – 100	75 - 100	55 - **80**
4.75	25 – 45	25 - 45	15 - **30**
2.36	5 – 15	5 - 15	5 - **15**
0.075	1.0 - 3.0	1.0 - 3.0	2.0 - 4.0

ASPHALT PLANT MIXTURES:

(7-1-95) SP6 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.

ASPHALT BINDER CONTENT OF ASPHALT PLANT MIXES:

(11-21-00) (Rev. 7-17-12) 609 SP6 R15

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

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

The actual asphalt binder content will be established during construction by the Engineer within the limits established in the *2012 Standard Specifications.*

PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:

(11-21-00) SP6 R25

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

The base price index for asphalt binder for plant mix is **$611.92** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on August 1, 2014.

ASPHALT PAVER - FIXED STRING LINE:

(10-21-03) (Rev. 1-17-12) 610 SP6 R06A

A fixed string line is required on this project.

FINAL SURFACE TESTING NOT REQUIRED:

(5-18-04) (Rev. 5-15-12) 610 SP6 R45

Final surface testing is not required on this project.

GUARDRAIL ANCHOR UNITS, TYPE 350:

(4-20-04) (Rev. 8-16-11) 862 SP8 R65

Description

Furnish and install guardrail anchor units in accordance with the details in the plans, the applicable requirements of Section 862 of the *2012 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) as manufactured by:

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

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

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

Prior to installation the Contractor shall submit to the Engineer:

(A) FHWA acceptance letter for each guardrail anchor unit certifying it meets the requirements of NCHRP Report 350, Test Level 3, in accordance with Article 106-2 of the *2012 Standard Specifications*.

(B) Certified working drawings and assembling instructions from the manufacturer for each guardrail anchor unit in accordance with Article 105-2 of the *2012 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 Article 1088-3 of the *2012 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 Article 862-6 of the *2012 Standard Specifications*.

Payment will be made under:

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

STABILIZATION REQUIREMENTS:

(11-4-11) S-2

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. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

SEEDING AND MULCHING: (East Crimp)

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

All Roadway Areas

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

Waste and Borrow Locations

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

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

Approved Tall Fescue Cultivars

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

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

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

All areas seeded and mulched shall be tacked with asphalt. **Crimping of straw in lieu of asphalt tack shall not be allowed on this project.**

RESPONSE FOR EROSION CONTROL:

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.

Payment will be made under:

Pay Item	Pay Unit
Response for Erosion Control	Each

MINIMIZE REMOVAL OF VEGETATION:

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

STOCKPILE AREAS:

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

ACCESS AND HAUL ROADS:

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

WASTE AND BORROW SOURCES:

Payment for temporary erosion control measures, except those made necessary by the Contractor's own negligence or for his own convenience, will be paid for at the appropriate contract unit price for the devices or measures utilized in borrow sources and waste areas.

No additional payment will be made for erosion control devices or permanent seeding and mulching in any commercial borrow or waste pit. All erosion and sediment control practices that may be required on a commercial borrow or waste site will be done at the Contractor's expense.

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 outside or interior boundaries shall be delineated by stakes and highly visible flagging.

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 geotextile 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 geotextile 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	**Pay Unit**
Safety Fence	Linear Foot

WATTLE:

(10-19-10) (Rev. 1-17-12) 1060,1630,1631 T1

Description

Wattles are tubular products consisting of excelsior fibers encased in synthetic netting. Wattles are used on slopes or channels to intercept runoff and act as a velocity break. 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 wattles, matting installation, and removing wattles.

Materials

Wattle shall meet the following specifications:

100% Curled Wood(Excelsior) Fibers	
Minimum Diameter	12 in.
Minimum Density	2.5 lb/ft^3 +/- 10%
Net Material	Synthetic
Net Openings	1 in. x 1 in.
Net Configuration	Totally Encased
Minimum Weight	20 lb. +/- 10% per 10 ft. length

Stakes shall be used as anchors.

Provide hardwood stakes a minimum of 2-ft. long with a 2" x 2" 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 Article 1060-8 of the *2012 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

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" with no more than 2" projecting from the top of the wattle. Drive stakes at an angle according to the detail provided in the plans.

Only install 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".

Installation of matting shall be in accordance with the detail provided in the plans, and in accordance with Article 1631-3 of the *2012 Standard Specifications,* or in accordance with specifications provided elsewhere in this contract.

The Contractor shall maintain the 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 *2012 Standard Specifications.*

Measurement and Payment

Wattle 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 *Wattle.*

Matting will be measured and paid for in accordance with Article 1631-4 of the *2012 Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

Payment will be made under:

Pay Item	**Pay Unit**
Coir Fiber Wattle	Linear Foot

SILT FENCE COIR FIBER WATTLE BREAK:
(Coir Fiber Wattle)

Description

Silt Fence Coir Fiber Wattle Breaks are tubular products consisting of coir fibers (coconut fibers) encased in coir fiber netting and used in conjunction with Temporary Silt Fence at toe of fills to intercept runoff. Silt Fence Coir Fiber Wattle Breaks 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, maintenance and removing Silt Fence Coir Fiber Wattle Breaks.

Materials

Coir Fiber Wattle shall meet the following specifications:

100% Coir (Coconut) Fibers	
Minimum Diameter	12 in.
Minimum Length	10 ft.
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.

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

A trench shall be excavated the entire length of the coir fiber wattle with a depth of 1 to 2 inches for the wattle to be placed. Silt Fence Coir Fiber Wattle Breaks shall be secured to the soil by wire staples approximately every 1 linear foot and at the end of each wattle. A minimum of 4 stakes shall be installed on the downslope side of the wattle with a maximum spacing of 2 linear feet, and according to the detail. Install a minimum of 2 stakes on the upslope side of the Silt Fence Coir Fiber Wattle Break 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.

Install Temporary Silt Fence in accordance with section 1605 of the *Standard Specifications* and overlap each downslope side of silt fence wattle break by 6 in.

The Contractor shall maintain the Silt Fence Coir Fiber Wattle Breaks until the project is accepted or until the Silt Fence Coir Fiber Wattle Breaks are removed, and shall remove and dispose of silt accumulations at the Silt Fence Coir Fiber Wattle Breaks when so directed in accordance with the requirements of Section 1630 of the *Standard Specifications.*

Measurement and Payment

Silt Fence Coir Fiber Wattle Break will be measured and paid for by the actual number of linear feet of Silt Fence Coir Fiber Wattle Breaks 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 *Silt Fence*

Coir Fiber Wattle Break.

Payment will be made under:

Pay Item	**Pay Unit**
Coir Fiber Wattle	Linear Foot

STREET SIGNS AND MARKERS AND ROUTE MARKERS:

(7-1-95) 900 SP9 R02

Move any existing street signs, markers, and route markers out of the construction limits of the project and install the street signs and markers and route markers so that they will be visible to the traveling public if there is sufficient right of way for these signs and markers outside of the construction limits.

Near the completion of the project and when so directed by the Engineer, move the signs and markers and install them in their proper location in regard to the finished pavement of the project.

Stockpile any signs or markers that cannot be relocated due to lack of right of way, or any signs and markers that will no longer be applicable after the construction of the project, at locations directed by the Engineer for removal by others.

The Contractor shall be responsible to the owners for any damage to any street signs and markers or route markers during the above described operations.

No direct payment will be made for relocating, reinstalling, and/or stockpiling the street signs and markers and route markers as such work shall be considered incidental to other work being paid for by the various items in the contract.

TWELVE MONTH GUARANTEE:

(7-15-03) 108 SP1 G145

(A) The Contractor shall guarantee materials and workmanship against latent and patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve months following the date of final acceptance of the work for maintenance and shall replace such defective materials and workmanship without cost to the Department. The Contractor will not be responsible for damage due to faulty design, normal wear and tear, for negligence on the part of the Department, and/or for use in excess of the design.

(B) Where items of equipment or material carry a manufacturer's guarantee for any period in excess of twelve months, then the manufacturer's guarantee shall apply for that particular piece of equipment or material. The Department's first remedy shall be through the manufacturer although the Contractor is responsible for invoking the warranted repair work with the manufacturer. The Contractor's responsibility shall be limited to the term of the manufacturer's guarantee. NCDOT would be afforded the same warranty as provided by the Manufacturer.

This guarantee provision shall be invoked only for major components of work in which the Contractor would be wholly responsible for under the terms of the contract. Examples would include pavement structures, bridge components, and sign structures. This provision will not be

used as a mechanism to force the Contractor to return to the project to make repairs or perform additional work that the Department would normally compensate the Contractor for. In addition, routine maintenance activities (i.e. mowing grass, debris removal, ruts in earth shoulders,) are not parts of this guarantee.

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

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

TRAFFIC CONTROL:
(01-17-12) RWZ-1

NOTICE: The Contractor shall notify the project Resident Engineer of the Department of Transportation no less than one (1) month prior to the date that the road is to be closed, to allow the Department sufficient time to install a Temporary Changeable Message Sign(s) stating the road is going to be closed, 10 days prior to its actual closure.

Maintain traffic in accordance with Divisions 10, 11 and 12 of the *2012 Standard Specifications* and the following provisions:

Install Work Zone Advance Warning Signs in accordance with Standard Drawing No. 1101.01 of the *2012 Roadway Standard Drawings* prior to beginning any other work. Use a lane closure or slow moving operation to complete the work, as necessary, unless otherwise indicated (refer to Standard Drawing No. 1101.02, 1101.11, 1110.01, 1110.02 and 1130.01 of the *2012 Roadway Standard Drawings*. 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 Standard Drawing No. 1101.01, 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 of the *2012 Roadway Standard Drawings* 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 *2012 Standard Specifications* and the Engineer.

When personnel and/or 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 Standard Drawing No. 1101.02 of the *2012 Roadway Standard Drawings* unless the work area is protected by barrier or guardrail. When personnel and/or 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 Standard Drawing No. 1101.02 of the *2012 Roadway Standard Drawings* unless the work area is protected by barrier or guardrail. When personnel and/or equipment are working within a lane of travel of an undivided or divided facility, close the lane according to the traffic control plans, *2012 Roadway Standard Drawings* or as directed by the Engineer. Conduct the work so that all personnel and/or 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 Details as shown on Standard Drawing No. 1101.02, sheets 11, 12 and 13 of the *2012 Roadway Standard Drawings*. 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.

Failure to comply with the following requirements will result in a suspension of all other operations:

1. Before working on ANY MAP, the Contractor shall submit a written construction sequence for traffic control and construction lighting for ALL MAPS to the Engineer at the first pre-construction meeting and the sequence must be approved before closing a lane of traffic. The Contractor and Engineer will coordinate with the Traffic Management Unit at 919-773-2800 or Traffic Services for additional traffic control guidance, as necessary.
2. Coordinate the installation of items required by the contract documents and resurfacing operations such that these operations are completed in the order as agreed upon with the Engineer at the first pre-construction meeting. Refer to the Provisions, Typicals and Details unless otherwise directed by the Engineer.
3. Once the Contractor has started work at a location, the Contractor should prosecute the work in a continuous and uninterrupted manner from the time he begins the work until completion and final acceptance unless determined otherwise by the Engineer.
4. Obtain written approval of the Engineer before working in more than one location or setting up additional lane closures.
5. Mainline pavement shall not be left milled, unmarked or uneven at the end of a paving season.
6. Contractor shall mill and pave lanes in an order such that water shall not accumulate.

Notify the 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 nominal lifts of 1.5 inches or less of asphalt course and by the end of each work day for nominal lifts of greater than 1.5 inches of asphalt course.

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

When resurfacing facilities with ramps, resurface the ramp and gore area of the ramp as agreed upon with the Engineer. Place the transverse joint on the ramp at the terminal point of the gore unless the ramp is being resurfaced beyond this limit.

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 Article 1101-14 of the *2012 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 accordance with the *2012 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 *2012 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:

(01-17-12) RWZ-3

Description

Install and maintain signing in accordance with Divisions 11 and 12 of the *2012 Standard Specifications*, the *2012 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 in accordance with Standard Drawing No. 1101.01, 1101.02 and 1110.01 of the *2012 Roadway Standard Drawings* 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 Standard Drawing No. 1101.02, 1101.11 and 1110.02 of the *2012 Roadway Standard Drawings.*

(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:

(01-17-12) 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.

All characters, symbols and stop bars on concrete shall be either Type 2 or Type 3 Cold Applied Plastic or Heated-In-Place Thermoplastic as shown on NCDOT Approved Product List. The quantity for characters, symbols and stop bars on concrete will be included in the pay items for Type 2 Cold Applied Plastic.

All characters, symbols and stop bars on asphalt shall be either Heated-In-Place Thermoplastic or Extruded Thermoplastic as shown on NCDOT Approved Product List. The quantity for characters, symbols and stop bars on asphalt will be included in the pay items for Heated-In-Place Thermoplastic.

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:**

(01-17-12) RWZ-5

Use the following in conjunction with the *2012 Standard Specifications:*

Standard Pavement Markings	*2012 Roadway Standard Drawings*: 1205.01, 1205.02, 1205.03, 1205.04, 1205.05, 1205.06, 1205.07, 1205.08, 1205.09, 1205.10, 1205.11, 1205.12, 1205.13

PROJECT SPECIAL PROVISIONS – STRUCTURES

ALUMINUM STRUCTURAL PLATE PIPE ARCH CULVERT

Scope
This special provision covers the manufacture and installation of 106.50 LF of a 20'-1" span x 12'-6" rise, aluminum structural plate pipe arch culvert with internal baffles and Aluminum Structural Plate Headwalls and Wingwalls, as detailed in the plans and within the shop drawings provided by the supplier.

Material
The Aluminum Pipe Arch shall consist of plates, ribs, and appurtenant items as shown on the plans and shall conform to the requirements of ASTM B 746 and AASHTO M219. Plate thickness shall be a minimum of 0.200" and shall meet LRFD HL-93 loading conditions for 2.0' minimum and 10.0' maximum cover conditions.

Bolts and nuts shall conform to the requirements of ASTM A 307 or ASTM A 449 and shall be galvanized in accordance with ASTM A 153.

Assembly
The pipe arch structure shall be assembled in accordance with the shop drawings provided by the supplier and assembled by the supplier's assembly crew which must be certified by the North Carolina Department of Transportation (NCDOT) to perform assembly of these types of structures and have a minimum of 20 successful installations with NCDOT. Bolts shall be tightened using an applied torque of between 100 and 150 foot pounds per the manufacture's recommendations.

Installation
The pipe arch structure shall be installed in accordance with the plans and specifications, the manufacturer's recommendations, and the AASHTO Standard Specification for Highway Bridges, Section 26 (Division II).

Foundation Bedding
The bedding shall be constructed to a uniform line and grade using a clean angular #57 stone. One (1) layer of Tensar geogrid TX160 shall be installed with the stone bedding along with a 4 ounce non-woven filter fabric placed as a soil separator per the bedding details on engineer's plans. The TX160 geogrid is to extend upwards past the haunch area of the pipe arch with the 4 ounce non-woven filter fabric continuing around the entire pipe arch up to one foot above the top of the pipe arch, encapsulating the #57 stone used to bed, and backfill the pipe arch structure. The backfill in the haunch area must be capable of providing a bearing of at least 4,000 PSF.

Backfill
The structure shall be backfilled using clean, well graded #57 stone evenly placed on either side of the structure up to one foot above the top of the pipe arch and at a width no less than 5 feet on either side of the structures span from headwall to headwall encapsulated with a 4 ounce non–

woven filter fabric. One layer of TX160 geogrid is to be placed just above top of the filter fabric extending past the pipe arch to the natural undisturbed embankments between the Inlet and Outlet headwalls. Outside of the structure zone, a Class III or Class II material, Type 1, shall be placed in uniform horizontal layers not exceeding an 8 inch maximum loose lift thickness and compacted to a density not less than 90% per AASHTO T180. In the road section, an ABC material will be required to extend from one foot above the top of the arch pipe to the top of the sub-grade of the road. The filter fabric shall be incidental to the installation of the pipe.

Aluminum Structural Plate Headwalls

All aluminum structural plates for headwalls shall consist of plates and appurtenant items shown on the plans and shall conform to the requirements of AASHTO M219 (and ASTM B746) specification and have an external annular corrugation of 9" x 2-1/2" with the plate thickness corresponding to the shop drawings. Structural plate headwall plates are to be manufactured with 5052 aluminum alloy and be fully welded inside and out to the aluminum structure by a certified welder.

The corrugated plates shall be bolt hole punched and pre-assembled at the plant with bolts and nuts conforming to the requirements of ASTM A307 or ASTM A 449, and shall be hot dip galvanized in accordance with ASTM A 153.

All aluminum wale beams, wale nuts, and aluminum headwall caps shall be prefabricated and assembled per the plans on the aluminum headwalls at the plant.

All dead man anchor assemblies for the aluminum structural plate headwalls shall consist of ¾" diameter galvanized steel tieback rods and aluminum structural plate DMA plates with sizes of plates and length of rods according to the PE stamped headwall calculations and drawings.

PE stamped drawings and calculations by a North Carolina Professional Engineer for aluminum headwalls will be required.

A manufacturer's representative with at least 10 years experience with this type of structure will be required to be onsite during the foundation preparation of the structure, backfilling the structure and headwalls, as well as the placement of the tieback rods and deadman anchor assemblies during the backfill process.

Aluminum Internal Baffles

All internal baffles or sills shall be fabricated from aluminum alloy plate. These baffle plates shall be fully welded to the inside of the aluminum structural plate pipe arch (water tight) and reinforced with structural aluminum gussets to handle hydraulic forces inside the pipe arch. Baffles are to be placed inside the pipe arch at the specified locations on the plans.

Measurement and Payment

The lump sum price and payment will be full compensation for all the work necessary to manufacture and install the aluminum structural plate pipe arch culvert including, but not limited to; material, manufacture, assembly and installation of the structural plate pipe with baffles, as well as the headwalls and wingwalls for the structure. Materials for Foundation Bedding and Backfill are not a part of this pay item.

Pay Item

20'-1" x 12'-6" CAA Structural Plate Pipe Arch, 0.200" thick, with Headwalls . . . . Lump Sum

SUBMITTAL OF WORKING DRAWINGS (8-9-13)

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 Structures Engineer
North Carolina Department
of Transportation
Structures Management 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 Structures Engineer
North Carolina Department
of Transportation
Structures Management 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:

jgaither@ncdot.gov (James Gaither)

jlbolden@ncdot.gov (James Bolden)

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

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
1570 Mail Service Center
Raleigh, NC 27699-1570

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. Eric Williams, 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. Eric Williams, 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) 707 – 6407 (919) 250 – 4082 facsimile
plambert@ncdot.gov

Secondary Structures Contacts: James Gaither (919) 707 – 6409
James Bolden (919) 707 – 6408

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):
Eric Williams (704) 455 – 8902
(704) 455 – 8912 facsimile
ewilliams@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
Foam Joint Seals [6]	9	0	"Foam 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 1072-8
Miscellaneous Metalwork [4,5]	7	0	Article 1072-8
Optional Disc Bearings [4]	8	0	"Optional Disc Bearings"
Overhead and Digital Message Signs (DMS) (metalwork and foundations)	13	0	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 ___"

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 (precast items)	10	0	Article 1077-2 & "Sound Barrier Wall"
Sound Barrier Wall Steel Fabrication Plans [5]	7	0	Article 1072-8 & "Sound Barrier Wall"
Structural Steel [4]	2, then 7	0	Article 1072-8
Temporary Detour Structures	10	2	Article 400-3 & "Construction, Maintenance and Removal of Temporary Structure at Station ____"
TFE Expansion Bearings [4]	8	0	Article 1072-8

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. 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 1072-8 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	Subarticle 411-3(A)
Crosshole Sonic Logging (CSL) Reports [2]	1	0	Subarticle 411-5(A)(2)
Pile Driving Equipment Data Forms [2,3]	1	0	Subarticle 450-3(D)(2)
Pile Driving Analyzer (PDA) Reports [2]	1	0	Subarticle 450-3(F)(3)
Retaining Walls [4]	8 drawings, 2 calculations	2 drawings	Applicable Provisions
Temporary Shoring [4]	5 drawings, 2 calculations	2 drawings	"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. Subarticles 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 appropriate Geotechnical Engineering Unit regional office. Electronic submission is preferred.

3. The Pile Driving Equipment Data Form is available from:
   https://connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
   See second page of form for submittal instructions.

Electronic copy of submittal is required. See referenced provision

FALSEWORK AND FORMWORK (4-5-12)

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.

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.

Design Requirements/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.

As an option for the Contractor, overhang falsework hangers may be uniformly spaced, at a maximum of 36 inches, provided the following conditions are met:

Member Type (PCG)	Member Depth, (inches)	Max. Overhang Width, (inches)	Max. Slab Edge Thickness, (inches)	Max. Screed Wheel Weight, (lbs.)	Bracket Min. Vertical Leg Extension, (inches)
II	36	39	14	2000	26
III	45	42	14	2000	35
IV	54	45	14	2000	44
MBT	63	51	12	2000	50
MBT	72	55	12	1700	48

Overhang width is measured from the centerline of the girder to the edge of the deck slab.

For Type II, III & IV prestressed concrete girders (PCG), 45-degree cast-in-place half hangers and rods must have a minimum safe working load of 6,000 lbs.

For MBT prestressed concrete girders, 45-degree angle holes for falsework hanger rods shall be cast through the girder top flange and located, measuring along the top of the member, 1'-2 ½" from the edge of the top flange. Hanger hardware and rods must have a minimum safe working load of 6,000 lbs.

The overhang bracket provided for the diagonal leg shall have a minimum safe working load of 3,750 lbs. The vertical leg of the bracket shall extend to the point that the heel bears on the girder

bottom flange, no closer than 4 inches from the bottom of the member. However, for 72-inch members, the heel of the bracket shall bear on the web, near the bottom flange transition.
Provide adequate overhang falsework and determine the appropriate adjustments for deck geometry, equipment, casting procedures and casting conditions.
If the optional overhang falsework spacing is used, indicate this on the falsework submittal and advise the girder producer of the proposed details. Failure to notify the Engineer of hanger type and hanger spacing on prestressed concrete girder casting drawings may delay the approval of those drawings.
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 ¾".
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.
Wind Loads
Table 2.2 of Article 2.2.5.1 is modified to include wind velocities up to 110 mph. 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	Pressure, lb/ft^2 for Indicated Wind Velocity, mph				
feet above ground	70	80	90	100	110
0 to 30	15	20	25	30	35
30 to 50	20	25	30	35	40
50 to 100	25	30	35	40	45
over 100	30	35	40	45	50

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

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.

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. 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.

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.

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.

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.

Method of Measurement

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

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

CRANE SAFETY (8-15-05)

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

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

Crane Safety Submittal List

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

PROJECT SPECIAL PROVISIONS – WATER MAIN RELOCATION

NOTICE: All waterline components shall be per requirements listed within the project plans; with references as listed per Section 1036 of the NCDOT 2012 Standard Specifications and the following:

BLADEN COUNTY WATER DISTRICT
DETAILED SPECIFICATIONS

SECTION 1: PIPE FOR WATER MAINS

01. **SCOPE: The Contractor shall furnish, and may use any of the water pipe specified under Section 1036 of the January 2012 edition of the NCDOT *Standard Specifications for Roads and Structures,* and may also use other NCDOT approved incidentals required for the construction of a complete water system, as shown on the drawings.**

Unless otherwise noted within the project plans, the materials listed below are acceptable to the Owner for use in water distribution systems. Should the Contractor desire to use other materials not listed in these specifications, written permission must be obtained from the Owner's Engineer.

All material shall be free from defects impairing strength and durability and be of the best commercial quality for the purposes specified. It shall have structural properties sufficient to safely sustain or withstand strains and stresses to which it is normally subjected and be true to detail.

02. **SUBMITTALS:** The Contractor shall submit to the Engineer six (6) copies of all submittal data for review and/or approval. Submittals shall include at a minimum: (1) the manufacturer's name, (2) type of material, (3) ASTM, ANSI, AWWA or other quality standard and (4) pressure class. If the materials do not meet the quality standards specified, the submittals will be rejected and other materials submitted as specified. The Contractor must obtain approval of all pipe materials prior to commencing construction.

The Contractor shall submit to the Engineer two (2) copies of a certificate of inspection from the pipe manufacturer that the pipe supplied has been inspected at the plant and meets the requirements of these specifications.

03. **PIPE DELIVERY, STORAGE AND HANDLING:** Units shall be delivered, handled, and maintained in a manner to avoid damage to the pipe. The pipe shall be stored in an open area on high, well-drained land not subject to flooding, mud or other means of contamination.

04. **DUCTILE IRON PIPE:**

A. General: Ductile iron pipe shall be centrifugally cast in accordance with **ANSI/AWWA C151/A21.51-96** or latest revision. Ductile iron shall meet the following minimum physical grade requirements:

Ultimate Strength	=	60,000 psi
Yield Strength	=	42,000 psi
Minimum Elongation	=	10%

B. Pipe Thickness: Pipe design conditions shall be as follows:

1. Working pressure of 150 psi plus 100 psi water hammer allowance.

2. External load of earth load of at least 3' cover plus a live truck superload **(ASHTO H-20).**

Pressure class thickness shall be calculated in accordance with **ANSI/AWWA C150/A21.50-96**, or latest revision, considering the above conditions and a safety factor of two. The standard service allowance and casting tolerance shall be added to the net thickness. Pipe up to and including 12" diameter as indicated on the plans and in the schedule of bid items shall be a pressure class 350. All larger pipe shall be a pressure class 250.

C. Joints:

1. Slip-Type: Pipe joints are to be slip-type single gasket bell and plain end or, where noted on the drawings, restrained joints in accordance with **ANSI/AWWA C111/A21.11-95** or latest revision.

2. Flanged Pipe: All flanged pipe shall be of ductile iron pipe and ductile iron flanges manufactured per **ANSI/AWWA C115/A21.15-94** or latest revision, and shall be rated for a maximum working pressure of 250 psi. Flanges shall be cast or screwed on by the pipe manufacturer only. Welding of flanges to the body of the pipe in lieu of methods outlined in **ANSI A21.15** will not be acceptable. Flanges shall be standard Class 125 unless they are noted on plans as "F&D 250". F&D 250 flanges shall have a raised face and be faced and drilled to match Class 250 flanges shown in **ANSI/AWWA C110/A21.10-93** or latest revision.

3. Mechanical Joints: ANSI Specification **ANSI/AWWA C111/A21.11-95** or latest revision, for three inch pipe and larger, and CIPRA Specification 3-54 and 4-54 for two inch pipe. Bolted mechanical joints shall be used where specifically called for on the plans or in the Schedule of Bid Items.

4. Restrained Joints: Restrained joints for pipe and fittings shall be designed for a working pressure of 350 psi for 4"–24" pipe. Restrained joints shall be capable of being deflected a minimum of 4 degrees after assembly for 6" through 12" pipe and a minimum of 3 degrees after assembly for 14"-24" pipe. Restrained joints for pipe and fittings shall be **U.S. Pipe TR FLEX, Griffin SNAP-LOK** or an approved equal. **MEGALUGS** are also approved for use on Ductile Iron Pipe. When mechanical thrust restraints are used concrete thrust blocking shall be deleted from the installation.

a. River Crossing Pipe: Push-on joints for such pipe shall meet the requirements of **ANSI/AWWA C111/A21.11-95**, and allow deflection of up to 15^{o}. Pipe thickness shall be equal to manufacturer's standard. River crossing pipe shall be assembled and hydrostatically tested prior to shipment. Restrained joints for river crossing pipe and fittings shall be Griffin SNAP-LOK or an approved equal.

D. Pipe Lining: Cement-mortar lining shall conform to **ANSI/AWWA C104/A21.4-95** or latest revision and shall be sealed with a bituminous coating.

E. Exterior Coating: The pipe shall have an outside pipe coating of bituminous material in accordance with **ANSI/AWWA C151/A21.51-96** or latest revision. The final coat shall be continuous and smooth being neither brittle when subjected to low temperatures nor sticky when exposed to hot sun. The coating shall be strongly adherent to the pipe at all temperatures.

F. Length and Weight: Pipe shall be furnished in 20' or 18' nominal lengths. Weights and length tolerances shall be within those specified by **ANSI/AWWA C151/A21.51-96** or latest revision.

G. Marking: The net weight, pressure class or nominal thickness, sampling period and manufacturer shall be marked on each pipe. Pipe shall also be marked "D.I." or "Ductile".

05. **POLYVINYL CHLORIDE (PVC) PIPE**:

A. Dimension Ratio 18: PVC pipe shall conform with **ANSI/AWWA C900-97** or **latest revision for polyvinyl chloride pressure pipe sizes 4 inch through 12 inch**. Class 150, DR 18 pipe as called for on the plans or in the schedule bid items shall be furnished. The pipe shall be plainly marked with the following information: manufacturer's name, size, material (PVC) type and grade or compound, NSF seal, pressure class and reference to appropriate product standards. Pipe shall be furnished in 20 ft. laying lengths. Random lengths shall be a minimum of 10 feet long and shall comprise no more than 15 percent of the length of the piping system. Pipe shall be furnished in factory packaged units.

Pipe shall be furnished in cast iron pipe equivalent outside diameters with rubber-gasketed separate couplings or push-on joints. Pipe shall not fail when subjected to the following tests; (1) sustained pressure (2) burst pressure (3) flattening and extrusion quality. Tests shall be conducted as outlined in **ANSI/AWWA C900-97**. Each length of PVC pipe shall pass a hydrostatic integrity test at the factory of 4 times the pressure class of the pipe for 5 seconds.

1. Standards: **AWWA C900-97** PVC pipe shall conform to the following:

a. Material:	Virgin PVC resin, **ASTM D1784**
b. Dimension Ratio & Press. Class:	DR 18, Class 150
c. Pressure Rating:	188 psi @ 2.5 factor of safety
d. Sustained Pressure Requirement:	500 psi for 1,000 hrs., **ASTM D1598, ASTM D2241**
e. Quick Burst Pressure:	755 psi for 60 sec., **ASTM D1599**

Pipe that conforms with C909, Class 150/200 Molecular Oriented Pipe (MOP) with an Hydrostatic Design Basis (HDB) of 7100 psi with a Cast Iron OD is an acceptable alternative to C900.

B. Standard Dimension Ratio 21: PVC pipe shall be SDR 21 as called for on the plans or in the schedule bid items shall be furnished. The pipe shall be plainly marked with the following information: manufacturer's name, size, material (PVC) type and grade or compound, NSF Seal, pressure rating and reference to appropriate product standards.

1. Standards: PVC Pipe shall conform to the following:

a. Material:	Virgin PVC resin, **ASTM D1784**
b. Standard Dimension Ratio :	SDR 21
c. Pressure Rating:	200 psi @ 2.0 factor of safety
d. Sustained Pressure Requirement:	420 psi for 1,000 hrs., **ASTM D1598, ASTM D2241**
e. Quick Burst Pressure:	630 psi for 60 sec., **ASTM D1599**

Pipe that conforms with ASTM-F1483 for Molecular Oriented Pipe (MOP), with a Hydrostatic design basis (HDB) of 7100 psi and pressure rating of 200 psi with an IPS OD is an acceptable alternative to SDR21 pipe.

06. **BELL RESTRAINTS:** As mentioned in earlier sections MEGALUGS will be allowed for thrust restraint for Ductile Iron and PVC water mains. The use of MEGALUGS will negate the use of concrete for thrust blocking. When using MEGALUGS for fittings the upstream and downstream water mains may also require restraint. This restraint shall be accomplished by means of **RESTRAINT HARNESSES** for the Ductile Iron and PVC pipe bells.

A. Ductile Iron: Ductile Iron pipe bell restraint shall consist of a wedge action restraint ring on the spigot joined to a ductile iron follower gland behind the bell. The restraint ring shall have individually actuated wedges that increase their resistance to pull-out as pressure or external forces increase. The restraint ring and its wedging components shall be made of a minimum grade of 60-42-10 ductile iron conforming to **ASTM A 536.** The wedges shall be heat-treated to a minimum hardness of 370 BHN. Torque limiting twist off nuts shall be used to insure proper actuation of the restraining wedges. The follower gland shall be made of a minimum grade of 60-42-10 ductile iron conforming to **ASTM A 536.** The connecting tie rods that join the two rings shall be made of low allow steel that conforms to **ANSI/AWWA C111/A21.11.** The assembly shall have a rated pressure, with a minimum two to one safety factor, of 350 psi in sizes sixteen inch and below and 250 psi in the sizes eighteen inch through thirty-six inch. The product shall be the **Series 1700 MEGALUG** restraint harness manufactured by **EBBA Iron, Inc.** or approved equal.

B. C900 PVC: PVC pipe bell restraint shall consist of the following. The restraint shall be manufactured of ductile iron conforming to **ASTM A536**. A split ring shall be utilized behind the pipe bell. A serrated ring shall be used to grip the pipe and a sufficient number of bolts shall be used to connect the bell ring and the gripping ring. The combination shall have a minimum working pressure rating of 150 psi. The restraint shall be approved by Factory Mutual. The restraint shall be the **Series 1600** as manufactured by **EBBA Iron, Inc.** or approved equal.

C. IPS PVC: Iron retainers for iron pipe size PVC pipe bells shall be cast from 60-42-10 ductile iron. These devices shall have sufficient number of tie bolts to restrain working and test pressures as stated by the manufacturer. Each ductile clamp shall have serrations on the inside diameter sufficient to hold working and test pressures. These dev ices shall be used to restrain pipe joints adjacent to the restrained fittings.

07. **WROUGHT PIPING**: Wrought steel pipe shall conform to **ASTM A-53**. Wrought iron pipe shall conform to **ASTM A-72**. All wrought piping shall be standard strength Schedule 40 and shall be galvanized inside and out.

08. **PIPE INSTALLATION:** Pipe shall be installed in accordance with the manufacturer's recommendations and as specified in these specifications. Disinfection and pressure testing shall meet the requirements in these specifications.

09. **METHOD OF MEASUREMENT**: Pipe of the various sizes shall be measured by the linear foot, complete in place and upon acceptance, from end to end (from the bell or connection at the beginning to the bell or connection at the end), with no deduction for length through valves or other fixtures. Payment for the various size waterline pipes, measured as stated, shall include furnishing all labor, tools, materials, and equipment necessary for trenching, laying, jointing, testing, sterilizing, backfilling, connections to existing mains, and all other necessary incidentals for completion.

10. **PAYMENT:** Payment shall be made at the contract unit bid price for the approved and correctly installed waterline items, measured as described above.

BLADEN COUNTY WATER DISTRICT
DETAILED SPECIFICATIONS

SECTION 2: VALVES and FIRE HYDRANTS

01. **SCOPE:** The Contractor shall furnish all types of valves and fire hydrants and all other incidentals required for the construction of a complete water system as shown on the drawings and as specified herein. Unless otherwise noted, the materials listed below are acceptable to the Owner for use in water distribution systems. Should the Contractor desire to use other materials not listed in these specifications, written permission must be obtained from the Owner's Engineer.

All material shall be free from defects impairing strength and durability and be of the best commercial quality for the purposes specified. It shall have structural properties sufficient to safely sustain or withstand strains and stresses to which it is normally subjected and be true to detail.

Valves supplied shall be of the designations and description indicated on the plans or described herein.

02. **SUBMITTALS:** The Contractor shall submit to the Engineer six (6) copies of all submittal data for review and/or approval. Submittals shall include at a minimum: (1) The manufacturer's name, (2) type of material, (3) ASTM, ANSI, AWWA or other quality standard, and (4) pressure class. If the materials do not meet the quality standards specified, the submittals will be rejected and other materials submitted as specified. The Contractor must obtain approval of all valves and fire hydrants prior to commencing construction.

03. **DELIVERY, STORAGE AND HANDLING OF VALVES AND HYDRANTS:** Units shall be delivered, handled and maintained in a manner to avoid damage to the valves. The materials shall be stored in an open area on high, well-drained land not subject to flooding, mud or other means of contamination.

04. **RESILIENT-SEATED GATE VALVES (2"-16")**: Gate valves shall be manufactured to meet or exceed the requirements of **ANSI/AWWA C509-94** or latest revision for 2" –16" valves. All valves shall be of iron body, bronze mounted, resilient-seat type. The sealing mechanism shall provide zero leakage at the water working pressure against line flow from either direction. Valves shall be manufactured with "O" Ring stem seals. The area between the "O"-Rings shall be filled with lubricant. Anti-friction washers shall be provided at the stem collar for inside screw design.

Valves for buried use shall be nonrising stem (NRS) with 2 inch square operating nut. Valves for aboveground use or for use inside vaults shall be NRS design with handwheel. Valves shall open by turning in a counterclockwise direction. The minimum valve design working water pressure shall be 200 psi. Valves shall be shell tested at 400 psi.

Valve ends for buried use with Ductile Iron pipe shall be bolted mechanical joint. Valve ends for buried use with PVC pipe shall be bolted mechanical joint. Valve ends for use in above ground or vault installations shall be flanged joint. Valves for buried use on Ductile Iron pipe fire hydrant legs shall be bolted mechanical joint.

Resilient-seated gate valves shall be manufactured by American Darling, American Flow Control, U.S. Pipe, the Mueller Company or an approved equal.

05. **BUTTERFLY VALVES:** Butterfly valves shall be manufactured to meet or exceed the requirements of **ANSI/AWWA C504-94** or latest revision. The valve discs shall be designed to rotate 90 degrees from full open to tight shut position and shall have adjustable mechanical stops to govern the rotation of the disc. The valve shall have Buna-N or Buna-S valve seats with bronze or stainless steel seating rings. The stuffing boxes shall be integrally cast with the valve body. The shaft bearings shall be of the self-lubricating sleeve type with thrust bearings to keep the valve disc centered.

Valves for buried use shall be mechanical-joint-end Class 150B. Valves for use in above ground or vault installations shall be short-body with flanged ends Class 150 B.

Butterfly valves shall be manufactured by Mueller, Pratt, Dezurik, Keystone or an approved equal.

06. **SWING CHECK VALVES**: Swing check valves shall be manufactured to meet or exceed the requirements of **ANSI/AWWA C508-93** or latest revision. The valve disc and clapper assembly shall be removable from valve body with valve remaining in pipeline. The disc shall not contact the body when the valve is in the full open position. Check valve shafts shall be stainless steel with corrosion resistant bearings provided at each end. Shaft and bearings are to be replaceable. Valves 2" to 12" shall be rated at 175 psi working water pressure.

Valves for use in aboveground installations shall be flanged end without side spring and lever or when positioned horizontally weight and lever may be used. Valves for underground service shall have mechanical joint ends with an internally weighted swing disc.

07. **VALVE BOXES:** Valve boxes shall be of close-grained grey cast iron. The valve boxes shall be the two piece screw type and the cover or cap shall have cast on the upper surface in raised letter the word "Water". Valve boxes shall be painted with a coat of protective bituminous paint before being shipped from the factory.

08. **FIRE HYDRANTS:** Dry-Barrel Fire hydrants shall be manufactured to meet or exceed **ANSI/AWWA C502-94** or latest revision. Fire hydrants shall be of the compression type with 4-1/2" valve opening designed to close against line pressure. Fire hydrants shall be furnished with a sealed oil or grease reservoir located in the bonnet, so that all threaded and bearing surfaces are automatically lubricated. Teflon washers shall be used for ease of

operation. The seat ring shall be bronze and threaded into a bronze drain ring located between the lower barrel and shoe.

The hose and pumper nozzles shall be threaded or leaded-in. The threads for nozzles shall be National Standard. The hydrants shall have two (2) 2-1/2" hose nozzles with cap, and one (1) 4-1/2" pumper nozzle and cap. Hydrants shall have a minimum 36" bury and shall stand approximately 30" above ground elevation. Hydrants shall be designed with a breakaway feature that will break cleanly upon impact. This shall consist of a two-part breakable safety flange. The operating nut shall be 1-1/2" pentagonal and shall open counterclockwise. All hydrants shall be cast marked on the outside such that visible identification can me made as to type and design

Hydrants permitted for installation may be American-Darling, Mark-73-1, Mueller Super Centurion 250 with Bronze Bushed Shoe or Kennedy K81-A Dry Top with Bronze Bushed Shoe.

09. **TAPPING SLEEVES:**

A. Mechanical Joint Tapping Sleeves: Tapping sleeve to be manufactured from gray cast iron meeting or exceeding **ASTM A126 Grade B** or ductile iron meeting **ASTM A536 Grade 65-45-12** (outlet sizes 14" and larger). Side flange seals shall be of the O-ring type of either round, oval or rectangular cross-sectional shape.

Tapping sleeve to be used in conjunction with a mating tapping valve from same manufacturer. Outlet flange of sleeve to be counterbored per **MSS SP-60** for true alignment of tapping valve and tapping machine. Sizes of outlet to be available through equal opening of sleeve diameters up to 24".

Tapping sleeves shall be Mueller mechanical joint, Mueller Outlet Seal, American Uniseal or Kennedy Square Seal. 100% stainless steel sleeves may also be used, as manufactured by Rockwell, Romac, or Ford provided that all metallic parts of the sleeves shall be 100% stainless steel including bolts and nuts. All sleeves shall have a minimum of 150 psi working pressure. All taps shall be of 150 psi working pressure. All taps shall be machine drilled – no burned taps will be allowed.

All sleeves are to include the end joint accessories and split glands necessary to assemble sleeve to pipe. MJ bolts and nuts are to conform to **ANSI/AWWA C111/A21.11-95**. No special tools other than standard socket wrench to be required for assembly of sleeve to main.

Sleeve shall be coated with asphaltic varnish per **Federal Specification TT-V-51**, **Military Specification MIL C-450**, or equal.

B. Fully Gasketed Wrap Around Tapping Sleeve: These sleeves must consist of the following:

1. Body: 18-8 stainless steel for total corrosion control.

2. Bolts and Nuts: 18-8 stainless steel NC threads.
3. Gasket: Gridded virgin GPR compounded for water service. **ASTM D2000-80M 4AA607**. Full gasket gives 360° pipe coverage. The outlet gasket is Buna-N.
4. Flange: 18-8 stainless steel flange with recess to accept standard tapping sleeves.
5. Testing Plug: Water Works Brass 3/4" with standard square head.

10. **COMBINATION AIR RELEASE VALVES:** Combination air release valves shall be installed at high points in the water main as indicated by the plans in order to release air in the main as the main is filling and allow air to enter the system when drowning or subject to negative pressure. Combination air release valves shall be manufactured to meet or exceed the requirements of **ANSI/AWWA C512-92** or latest revision.

The valve shall operate through a compound lever system that will seal both the pressure orifice and the air vacuum orifice simultaneously. This lever system shall permit a ¼" orifice to release an accumulation of air from the valve body at a capacity of 98 cfm of air and pressure of 150 psig.

The function of the lever system shall also permit a positive disengagement of the main valve from the large orifice. As the float drops and pressure decreases, the disengagement shall be immediate and not be limited to the initial draw of a vacuum.

The valves shall be 2" NPT screwed or ANSI Class 125 flanged inlet connection and shall be cast iron body, top and inlet flange (where required), stainless steel float and trim with buna-n seat. Valves, which operate the pressure plunger via a single lever and fulcrum, will not be acceptable. A protectop shall be supplied to prevent debris from entering the outlet of the valve. The valves shall be Crispin Model UL20 Universal Air Valve or an approved equal.

Each valve assembly shall include a 2" NRS, solid disc, inside screw bonnet gate valve with a 200 WOG pressure rating and conforming to **Federal Specification MSS SP-80**. Each valve assembly shall be installed in a manhole as shown on the detail sheet in the plans.

11. **INSTALLATION:** Valves and hydrants shall be installed in accordance with the manufacturer's recommendations and as specified in these specifications. Disinfection and pressure testing shall meet the requirements as specified in these specifications.

12. **METHOD OF MEASUREMENT:**

A. Valves: Gate Valves and Combination Air Release Valves will be counted by unit, complete in place and accepted, including valve boxes and manhole set to grade.

B. Hydrants: Hydrants shall be measured by unit, complete in place and accepted. A hydrant unit shall consist of: (1) Hydrant (depth of bury as shown on plans); (2) varying length D.I. hydrant leg; (3) 2-3/4" threaded tie rods from tee to hydrant or

other approved restraining mechanism. Valves and fittings for hydrant branches shall be measured separately as described herein.

13. **PAYMENT:** Payment shall be made at the contract unit price on items measured as described above.

BLADEN COUNTY WATER DISTRICT
DETAILED SPECIFICATIONS

SECTION 3: FITTINGS AND COUPLINGS FOR WATER DISTRIBUTION

01. **SCOPE:** The Contractor shall furnish fittings, couplings and all other incidentals required for the construction of a complete water system as shown on the drawings and as specified herein. *Unless otherwise noted within the project plans*, the materials listed below are acceptable to the Owner for use in water distribution systems. Should the Contractor desire to use other materials not listed in these specifications, written permission must be obtained from the Owner's Engineer.

All material shall be free from defects impairing strength and durability and be of the best commercial quality for the purposes specified. It shall have structural properties sufficient to safely sustain or withstand strains and stresses to which it is normally subjected and be true to detail.

Use Ductile Iron Fittings on water lines 4" or larger. Fittings and couplings supplied shall be of the designation and description indicated on the plans or described herein.

02. **SUBMITTALS:** The Contractor shall submit to the Engineer six (6) copies of all submittal data for review and/or approval. Submittals shall include at a minimum: (1) The manufacturer's name, (2) type of material, (3) ASTM, ANSI, AWWA or other quality standard, and (4) pressure class. If the materials do not meet the quality standards specified, the submittals will be rejected and other materials submitted as specified. The Contractor must obtain approval of all fittings and couplings prior to commencing construction.

03. **DELIVERY, STORAGE AND HANDLING OF FITTINGS AND COUPLINGS:** Units shall be delivered, handled and maintained in a manner to avoid damage to the fittings. The material shall be stored in an open area on high, well-drained land not subject to flooding, mud or other means of contamination.

04. **DUCTILE IRON FITTINGS:** Ductile iron fittings shall conform to **ANSI/AWWA C110/A21.10-93** or latest revision with the exception of the manufacturer's design dimensions and thickness. Mechanical Joint fittings 3"-24" shall have a working pressure rating of 350 psi. Flange joint fittings 3"–24" shall have a working pressure rating of 250 psi. Ductile-Iron Compact Fittings conforming to **ANSI\AWWA C153/A21.5-94** or latest revision are also acceptable.

Ductile iron shall conform with **ASTM A-536**, latest revision. The standard grade of iron shall be 70-50-05 with a minimum tensile strength of 70,000 psi, minimum yield strength of 50,000 psi and minimum elongation of 5%.

A. Coatings and Linings: Fittings shall have an outside coating of bituminous material in accordance with the manufacturer's specifications. The final coat shall be

continuous and smooth being neither brittle when subjected to low temperatures nor sticky when exposed to hot sun. The coating shall be strongly adherent to the pipe at all temperatures.

Fittings shall have a cement mortar lining and seal coating conforming with **ANSI/AWWA C104/A21.4-95** or latest revision.

B. Joints: Buried fittings shall have mechanical joints and above ground fittings or fittings in vaults shall have flange fittings as specified herein.

1. Mechanical Joint: **ANSI/AWWA C111/A21.11-95** or latest revision, for 3"-48" fittings. Bolted mechanical joint fittings shall be used with ductile iron pipe, PVC pipe, for all hydrant tees, and where specifically called for on the plans or in the Schedule of Bid Items.
2. Flanged Joint: **ANSI/AWWA C111/A21.11-95** or latest revision, for 3"-64" fittings.

05. **WROUGHT IRON OR STEEL FITTINGS: Wrought Iron or Steel Fittings are not allowed for use on this project.**

06. **PVC FITTINGS: PVC fittings are not acceptable for water mains three (3) inches or greater**. Fittings for PVC pipe less than three (3) inches shall be solvent weld schedule 40
PVC.

07. **COUPLINGS:** Couplings may be used where applicable for completion of the work. Couplings supplied shall conform to the following:

A. Compression Sleeve Coupling: Units shall be Dresser style 38, Smith-Blair No.431, Victaulic or equal.

B. Victaulic Couplings: Units shall be Victaulic Co., style 31, 41, or 44 or equal.

C. Gruvagrip Couplings: Units shall be Gustin-Bacon Division of Certainteed, Series 100, Victaulic 77 or equal.

D. Flanged Adaptors: Units shall be Dresser style 128, Smith-Blair No. 913, Uniflange or equal.

08. **METHOD OF MEASUREMENT**:

A. Ductile Iron Fittings: Ductile iron fittings are considered an incidental part of the pipe construction and will not be paid for directly, but shall be included in the price per linear foot of pipe.

B. Couplings: Couplings are considered an incidental part of the pipe construction and will not be paid for directly, but shall be included in the price per linear foot of pipe.

09. **PAYMENT:** Payment for waterline fittings and couplings shall be made at the contract unit price for 6" water line.

BLADEN COUNTY WATER DISTRICT
DETAILED SPECIFICATIONS

SECTION 4: 3/4 INCH TO 2 INCH SERVICES FOR WATER DISTRIBUTION

01. **SCOPE:** The Contractor shall furnish all materials and all other incidentals required for the installation of a complete water service connection as shown on the detail drawings and as specified herein. Unless otherwise noted, the materials listed below are acceptable to the Owner for use in water services. Should the Contractor desire to use other materials not listed in these specifications, written permission must be obtained from the Owner's Engineer.

All material shall be free from defects impairing strength and durability and be of the best commercial quality for the purposes specified. It shall have structural properties sufficient to safely sustain or withstand strains or stresses to which it is normally subjected and be true to detail.

Materials supplied shall be of the designations and description indicated on the plans or described herein.

02. **SUBMITTALS:** The Contractor shall submit to the Engineer six (6) copies of all submittal data for review and/or approval. Submittals shall include at a minimum: (1) The manufacturer's name, (2) type of material, (3) **ASTM**, **ANSI**, **AWWA** or other quality standard, and (4) pressure class. If the materials do not meet the quality standards specified, the submittals will be rejected and other materials submitted as specified. The Contractor must obtain approval of all materials prior to commencing construction.

03. **DELIVERY, STORAGE AND HANDLING OF MATERIALS:** Materials shall be delivered, handled and maintained in a manner to avoid damage due to breakage or contamination.

04. **TAPPING SADDLES:** Tapping saddles shall be of single strap O.D. controlled type design and provide full support around the circumference of the pipe with a designed in safeguard against over-tightening to prevent deforming the pipe. All parts of the saddle shall be constructed of corrosive resistant bronze including bolts and nuts required to assemble. Only saddles designed specifically for the type water main pipe used shall be allowed. Threads shall be AWWA standard cc tapered. Tapping saddles shall be **Mueller S1300 Series, equivalent models of A.Y. McDonalds and Ford, or equal.**

05. **CORPORATION STOPS:** Corporation stops shall be of bronze, **ASTM B 61** or **ASTM B 62**; Threaded ends for inlet and outlet of corporation stops, **AWWA C800**; Outlet connections to be **Mueller "Insta-Tite", equivalent models of A.Y. McDonalds and Ford, or equal**, **ASME/ANSI B16.26**. Corporation Stops shall be **Mueller H15005, equivalent models of A.Y. McDonalds and Ford, or equal** and shall have a minimum pressure rating of 100psi, "No Substitution Allowed".

06. **PIPE FOR SERVICE LINES:** Pipe for service lines shall be 3/4 inch 200 psi PE pipe (unless otherwise specified), AWWA C901. Insert stiffeners shall be stainless steel.

A. Marking: The following data shall be clearly marked on all service pipe installed:

(1) Nominal size
(2) Operating pressure @ 73.4 degrees F
(3) Type of pipe, i.e. "water service pipe"
(4) Material designation code.
(5) Date code: Month, year and day
(6) Manufacturer's brand name
(7) **National Sanitation Foundation** logo (indicating approval for potable water and compliance with ASTM Specifications)
(8) **ASTM** Specification - "**ASTM D-2239**"
(9) Plant location code

07. **COMPRESSION FITTINGS:** Compression fittings shall be compatible with all other service connection materials. A stainless steel insert will be required with any fitting that compresses the outside of the pipe to hold the pipe in place. Compression fittings shall be Mueller "Insta-tite", equivalent models of A.Y. McDonalds and Ford, or equal.

08. **TEFLON TAPE:** Teflon tape shall be used on all threaded connections to reduce the possibility of leaking joints.

09. **METER BOXES:** Meter boxes shall be supplied with each service connection. Boxes shall be of plastic construction and shall conform to the dimensions shown in the detail drawings for the water main installation. The meter boxes shall be equipped with a heavy-duty cast iron reader with the word "WATER" cast in the lid. Each box shall have a heavy coat of bituminous paint. Meter boxes shall be Brooks, Mueller, Ford or approved equal.

10. **CHECK VALVES:** The Contractor shall supply with each service a check valve as described herein.

A. Check Valves 3/4" and 1": Check valves shall be **Mueller H-14242 In-Line Dual Checks**, **equivalent models of A.Y. McDonalds and Ford, or equal** with meter swivel nut and have spring-assisted seating, and the seat shall be of Buna-N-Rubber. All other parts shall be red brass or stainless steel.

B. Check Valves 1-1/4" Through 2": Check valves shall be gravity swing type of brass or stainless construction. Valve inlets shall be flanged or have a flanged adapting nipple, outlets shall be male iron pipe.

All check valves supplied under these specifications shall be manufactured by **Mueller**, **A.Y. McDonalds, Ford or equal**.

11. **PRESSURE REDUCING VALVES:** Where water main static pressure exceeds 80 psi, a pressure reducing valve shall be installed on the service. The Engineer will designate those services to receive a pressure reducing valve. The valve shall automatically reduce a higher inlet pressure to a steady lower downstream pressure. The valves shall be constructed of bronze, copper or stainless steel and be equal to the size of the water service line. The pressure reducing valve shall be suitable for meter box installation.

12. **COLD WATER METERS:** Meters for the project shall be furnished and installed by the County.

13. **METHOD OF MEASUREMENT:** Services shall be measured as a short or long unit and shall include labor, materials, equipment and all incidentals required to install the following:

A. Services:

1. Tapping saddle
2. Corporation stop
3. Service pipe
4. Angle Ball valve
5. Meter Box
6. Spring assisted in-line dual check valve

B. Pressure Reducing Valves: Pressure Reducing Valves shall be measured as a unit separate from other service materials.

14. **PAYMENT:** Payment shall be made at the contract unit price for items as measured above.

BLADEN COUNTY WATER DISTRICT
DETAILED SPECIFICATIONS

SECTION 5: BORING UNDER HIGHWAYS , PIPES, AND RAILROADS

01. **SCOPE**: This section shall include furnishing all labor, tools, equipment and other incidentals required to bore casing pipe under highways or railroads.

02. **BORINGS:** Procedures for boring shall be in accordance with the best accepted methods of the construction and as shown on the plans and specified and detailed in these specifications.

A. Boring Under Highways: Lines installed under highways shall be bored as shown on the detail drawings contained in these specifications. Casings will be installed of the type, size, and thickness as specified herein or on the detail drawings. The Contractor shall be responsible for notifying the Department of Transportation at least five days prior to any contemplated work and for securing any required permits for performing the work. All work shall be accomplished under the supervision of the Engineer and the District Engineer of the Department of Transportation or his authorized representative.

1. Carrier Pipe: Carrier pipe used under highways shall be of an approved material and installed to the satisfaction of the District Engineer of the Department of Transportation. Carrier pipe shall be of the same material specified for water main construction unless otherwise noted.

2. Casing Pipe: The inside diameter of the casing pipe shall not be less than 2 inches greater than the largest outside diameter of the joints and couplings for carrier pipe less than 6" O.D., and 4" greater for carrier pipe 6" and larger. It shall, in all cases, be great enough to easily remove carrier pipe without disturbing the casing pipe.

(a) Casing Pipe Size 8" & Smaller: Schedule 40 wrought steel or wrought iron pipe having a wall thickness as shown below may be used for casing pipe 8" and smaller.

DIAMETER (INCHES)	SCHEDULE 40 WROUGHT STEEL WALL THICKNESS (INCHES)	WROUGHT IRON WALL THICKNESS (INCHES)
2-1/2	.203	.208
3	.216	.221
3-1/2	.226	.231
4	.237	.242
5	.258	.263
6	.280	.286
8	.322	.329

(b) Casing Pipe Sizes 8" and Larger: Steel pipe for casings 8" and larger shall be manufactured from steel having a minimum yield strength of 35,000 psi with the minimum wall thickness as shown below:

DIAMETER (INCHES)	MINIMUM WALL THICKNESS (INCHES)
10	.188
12	.188
16	.250
18	.250
20	.250
24	.250
30	.312
36	.375

(c) Installation: The minimum depth from the roadway surface to the top of the casing pipe at its closest point shall be three feet. The casing pipe ends shall be sealed utilizing grant seal or other method approved by the Engineer. The casing pipe shall extend a minimum of 5' beyond the edge of pavement on either side unless otherwise noted on the plans or specified herein.

Contractors shall be required to provide shoring of boring pits and trenches more than 6 feet deep in accordance with the North Carolina Department of Transportation and Federal Occupational Health and Safety Act.

B. Borings Under Railroads: All work on railroad rights of way shall be done under the supervision of the Chief Engineer of the railroad, or his authorized representative, who shall be notified at least 15 days before construction is begun. In addition, this work shall only be done in the presence of the authorized representative of the Chief Engineer, and no methods shall be used that, in the opinion of the representative, could be hazardous to the railway.

1. Carrier Pipe: Carrier pipe and joints shall be of the material shown on the details of the railroad encroachment agreements or as approved by the Chief Engineer or his authorized representative.

2. Casing Pipe: The inside diameter of the casing pipe shall not be less than 2 inches greater than the largest outside diameter of the joints and couplings for the carrier pipe less than 6" o.d. and 4" greater for carrier pipe 6" and larger. It shall, in all cases, be great enough to easily remove carrier pipe without disturbing the casing pipe.

Steel pipe manufactured from steel having a minimum yield strength of 35,000 psi and having a minimum permissible wall thickness as listed below shall be used as casing pipe.

DIAMETER (INCHES)	MINIMUM WALL THICKNESS (INCHES)
10	.188
12	.251
16	.312
18	.313
20	.375
24	.407
30	.469

3. Installation: The depth from the base of the railway rail to the top of the casing at the closest point shall not be less than 5-1/2 feet. Also, there should not be less than 3 feet from the bottom of the side ditches to the top of the casing pipe. The casing pipe ends shall be protected from the entrance of foreign materials. The casing shall extend a minimum of 25 feet either side of the centerline of the railroad track unless otherwise noted on the plans or specified herein.

Contractors shall be required to shore all pits used for boring if it is over 6 feet deep.

C. Boring Under Pipes: When crossing pipe(s) that are greater than 24-inch in diameter, directional boring shall be used or go around the pipe(s). The minimum clearance between pipe and water main shall be 3-feet.

D. Spiders: All carrier pipes under highways and railroads shall be equipped will fabricated spiders. There shall be at a minimum, one fabricated spider at each pipe joint and one additional spider at each end of the casing pipe. The fabricated spiders shall be submitted for approval prior to installation.

03. **METHOD OF MEASUREMENT:** Bores shall be measured in linear feet from end to end of casing pipe installed and accepted. This item shall include casing pipe and other materials, tools, equipment, labor and incidentals required to bore and install casing as shown on the details and as directed by the highway or railroad district Engineer and/or resident Engineer.

04. **PAYMENT:** Payment shall be made at the contract unit price on items measured as described above.

BLADEN COUNTY WATER DISTRICT
DETAILED SPECIFICATIONS

SECTION 6: CONSTRUCTION METHODS

01. **SCOPE:** The Contractor shall furnish all labor, tools, equipment and other incidentals required for the construction of the water distribution system as shown on the drawings and as specified herein.

The work shall include laying pipe and setting fittings, valves, hydrants, and services, pressure testing and sterilization of the water distribution system.

Materials shall be as specified in previous sections of these specifications.

02. **PIPE AND FITTINGS:** Pipe and fittings shall be laid as directed by the Engineer, and located as shown on the drawings. No additional payment will be made due to location changes directed in the field by the Engineer.

A. Trenching: The trench shall be dug to the required alignment and depth as shown on the plans or directed by the Engineer, and only so far in advance of the pipe laying as the Engineer shall permit. The width of the trench shall be kept at a minimum. The depth of the trench shall generally be sufficient to allow a minimum of three feet of cover over the top of the pipe. The bottom of the trench shall be shaped by hand and shall support the pipe for the entire length. It shall be the responsibility of the Contractor to provide adequate bearing for all pipe lines laid in uncertain soil conditions. If the trench bottom should be softened by flooding, rain or other causes, the unsuitable material shall be removed and replaced with suitable material properly shaped and tamped to grade. The use of timber or other material to support the pipe is not permitted.

1. Laying Conditions/Embedment: All Ductile Iron and Polyvinyl Chloride (PVC) pipe shall be installed in Type 3 embedment. The pipe shall be bedded in 4" of loose soil. Backfill shall be lightly consolidated to the top of the pipe. Loose soil is defined as native soil excavated from the trench, free of rocks, foreign materials and frozen earth.

B. Pipe Laying: Water pipe shall be laid in conformance with the standards set forth by **ANSI/AWWA C600-93 and/or ANSI/AWWA C605-94** or latest revisions. All water pipe shall be laid by experienced workmen with straight lines, even grades, and all joints shall be perfectly fitted. All pipe fittings, valves, hydrants, and accessories shall be carefully lowered into the trench with suitable equipment in a manner that will prevent damage to pipe and fittings. Under no circumstances shall pipe or accessories be dropped or dumped into the trench. Pipe and accessories shall be inspected for defects prior to their being lowered into the trench. Any defective, damaged or unsound material shall be repaired or replaced as directed by the Engineer. All foreign matter or dirt shall be removed from the interior and machined ends of pipe and accessories before it is lowered into position in the

trench. Pipe shall be kept clean by means approved by the Engineer, during and after laying.

1. Jointing Mechanical Joint Pipe:

a. Joining Existing Bell and Spigot to New Mechanical Joint: Due to the difficulty that may be encountered in attempts to make such a connection of this type, an adapter having a fitting bell and a M.J. socket may be used by the Contractor.

b. Cleaning and Assembling Joints: Clean last 8" outside the spigot, and the inside of the bell of mechanical joint pipe to remove oil, grit, tar (other than standard coating) and other foreign matter from the joint and then paint area clean with an approved soap solution. The ductile iron gland shall then be slipped on the spigot end of the pipe with the extension of the gland toward the socket or bell end. The rubber gasket shall be painted with the soap solution and placed on the spigot end with thick edge toward the gland.

c. Bolting of Joints: Push entire section of pipe forward to seat spigot end in the bell. Press gasket into place within the bell, being careful to have the gasket evenly located around the entire joint. Move ductile iron gland along the pipe into position for bolting, insert all bolts, and screw nuts up tightly with fingers. Tighten all nuts with a suitable (preferably torque-limiting) wrench. Tighten nuts that are spaced 180 degrees apart alternately in order to produce equal pressure on all parts of the gland.

2. Jointing Rubber Gasket Pipe (Bell Tite, Tyton, or Equivalent):

a. Cleaning Joint and Gasket: Clean gasket and spigot and inside of bell thoroughly to remove all dirt and other foreign matter.

b. Inserting Gasket: Insert gasket furnished by the pipe manufacturer into the gasket seat in the bell. Gasket shall be properly seated in the grooves provided in the pipe bell.

c. Lubricating Gasket and Spigot Pipe: Using a non-toxic vegetable soap, apply a film by hand to the inside surface of the gasket that comes into contact with the entering pipe and to the first 1" of the spigot end of the entering pipe. Use only lubricant specified by the pipe manufacturer.

d. Final Assembling of Joint: Align entering pipe with the bell to which it is to be joined. Enter the spigot end into the bell until it just makes contact with the gasket. Apply sufficient pressure to force the spigot end past the gasket up to solid contact with the bell.

e. Field Cutting Pipe: When it is necessary to field cut pipe with rubber gaskets, chamfer the cut end 1/8 inch x 30 degrees before inserting into a rubber gasket bell.

f. Fittings: Fittings shall be installed where and as shown on the plans or as directed by the Engineer. All bends (1/16 to 1/4), y-branches,

plugs and all other fittings requiring such shall be sufficiently backed, blocked, or braced to preclude the possibility of their blowing off the main.

03. **FIRE HYDRANTS AND VALVES:** Fire hydrants and valves shall be set as directed by the Engineer and located as shown on the drawings. No additional payment will be made due to location changes directed in the field by the Engineer.

A. Fire Hydrants: Fire hydrants shall be set where shown on the plans or as directed by the Engineer. The hydrants shall be set upon a bed of compacted crushed stone at least thirty (30) inches square by ten (10) inches in depth. There shall be furnished and installed an approved tie rod assembly to securely anchor the hydrant to the main line as shown on the detail contained in these specifications. When the tie rod assembly is specified, the cost shall be included in the unit price for hydrants and no concrete blocking will be required. When the hydrant is backfilled, crushed stone or gravel shall be placed around the hydrant to a point just above the drain holes of the hydrant.

B. Valves: Valves shall be set and anchored with steel bars and concrete as shown on the detail sheet contained in these specifications. All valves set by the Contractor shall include a cast iron or ductile iron valve box set to grade encircled and protected by a precast concrete donut.

04. **CONNECTIONS TO EXISTING MAINS:** The Contractor shall make connection to existing mains when and as directed by the Engineer. In no case shall the Contractor shut off the water or operate the fire hydrants or gate valves of the existing distribution system without the expressed permission of the Engineer and coordination with the Owner. In case it becomes necessary to delay the cut-off, such instructions shall be given and obeyed without recourse.

In making connections to the existing distribution system, valves shall be set as shown on the plan, or at such designated place as the Engineer may direct. If due to unforeseen conditions, these locations have to be changed or additional valves or fittings added, the Contractor shall install the valves or fittings at the new locations at the unit price scheduled in the bid items. Payment for special fittings or couplings will not be made unless approved by the Engineer prior to installation.

05. **CONCRETE BLOCKING:** All turns, fittings, etc., that induce pressure which would cause separation of pipe, breakage, etc., shall be blocked with 3,000 lb. concrete. Blocking shall be formed and placed in such a manner that the pressure to be exerted at the point of blocking shall be transferred to firm, undisturbed earth at a maximum load of 2,000 lbs, per square foot. The Contractor shall insure that blocking at all tees, bends, plugs, etc., shall be sufficient to contain all pressure exerted by the pipe up to 200 psi hydraulic pressure within the pipe, e.g., pressure at plug = 200 x (area of pipe in inches). Blocking shall be constructed as shown on the detail sheet contained in the project plans. The Contractor shall also be responsible for any damage or repairs caused by blowouts of any insufficiently blocked pipe.

"MEGA-LUGS" may be used for thrust restraint in lieu of concrete blocking. There will be no additional cost to the OWNER for the use of "MEGA-LUGS".

06. **CLEANING OF WATER MAINS (Pigging):** The Contractor shall clean all new water mains installed in this project by using a flexible polyurethane swab ("pig"). The pig shall be of 5 lb/cf density polyurethane of the proper size for the water mains being cleaned.

The pig shall be inserted into the first section of pipe and shall remain there until construction of that line segment is completed. Cleaning shall be accomplished by propelling the pig down the water main by system pressure to the exit point as determined by the Contractor. After the pig exits the pipe, flushing shall be performed until the water is completely clear and the turbidity level is less than 1.0 NTU.

Cleaning of water mains with diameters larger than 12 inches or water mains that utilize butterfly valves shall be performed in the same manner excepting that the Contractor will be required to pig the main from valve to valve or in a manner acceptable to the Engineer and the Owner.

07. **PRESSURE AND LEAKAGE TESTING:** Hydrostatic pressure and leakage testing shall conform with **ANSI/AWWA C600-93** or latest revision for ductile iron water main and **ANSI/AWWA C605-94** or latest revision for polyvinyl chloride pipe. Pressure testing shall be performed on all pipe, valves, hydrants, and fittings. The test shall be conducted on line segments from shut valve to shut valve in segments not exceeding 1,000 linear feet. The Contractor shall provide a suitable pump for applying pressure and an accurate gauge for measuring the pressure and an Engineer approved method of determining volume of water used.

All newly laid pipe and any valved sections thereof shall be subject to a hydrostatic pressure of at least 1.5 times the working pressure at the point of testing or 150 psi (whichever is greater). At the same time the test pressure shall not be less than 1.25 times the working pressure at the highest point along the test section. The hydrostatic test shall be of at least two-hour duration. Removal of air shall be performed to the satisfaction of the Engineer through use of the air release valve assemblies (automatic and manual) and the fire hydrants. If determined necessary by the Engineer, the Contractor shall install additional air taps to be abandoned after all air removal at no additional cost to the Owner.

Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe or any valved section thereof to maintain pressure within 5 psi (35 MPa or 0.35 bar) of the specified test pressure after the pipe has been filled with water and the air has been expelled. Leakage shall not be measured by a drop in pressure in a test section over a period of time. No installation will be accepted if the leakage is greater than that determined by the following formulas:

When testing Ductile Iron Pipe:

$$L = \frac{SD\sqrt{P}}{133{,}200}$$

Where:
L = allowable leakage, in gallons per hour
S = length of pipe tested, in feet
D = nominal diameter of the pipe, in inches
P = average test pressure during the leakage test, in pounds per square inch (gauge)

When testing Polyvinyl Chloride Pipe:

$$L = \frac{ND\sqrt{P}}{7{,}400}$$

Where:
L = allowable leakage, in gallons per hour
N = number of joints is length of pipeline tested
D = nominal diameter of the pipe, in inches
P = average test pressure during the leakage test, in pounds per square inch (gauge)

When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gph/in. (0.0012 L/h/m) of nominal valve size shall be allowed.

Acceptance shall be determined on the basis of allowable leakage. If any test of laid pipe discloses leakage greater than that specified above, the Contractor shall, at his own expense, locate and make approved repairs as necessary until the leakage is within the specified allowance.

All visible leaks are to be repaired, regardless of the amount of leakage.

08. **STERILIZATION OF WATER MAINS:** Sterilization of water mains shall be performed in accordance with the requirements of the **North Carolina Department of Environment, and Natural Resources**, **Rules Governing Public Water Systems**, **NCAC Title 15A**, **Subchapter 18C Section .1003**. and the requirements of **ANSI/AWWA C651-92** or latest revision. The pipe shall be sterilized in segments designated by the Contractor and subject to the approval of the Engineer.

All reasonable precautions shall be adhered to in protecting the interior of pipes, fittings, and valves against contamination. All openings in the pipeline shall be closed with watertight plugs at the end of the day's work or at other times when pipe laying has ceased. The lubricant used in the installation of sealing gaskets shall be suitable for use in potable water. If dirt enters the pipe it shall be removed and the interior pipe surface swabbed with a five percent hypochlorite disinfecting solution.

A. Disinfection Procedure: The basis disinfection procedure consists of

1. Preventing contaminating materials from entering the water main during storage and construction.
2. Removing, by flushing or other means, those materials that may have entered the water main.
3. Chlorinating any residual contamination that may remain, and flushing the chlorinated water from the main.
4. Protecting the existing distribution system from backflow due to pressure test and disinfection procedures.
5. Determining the bacteriological quality by laboratory test after disinfection.
6. Final connection of the approved new water main to the active distribution system.

The “tablet method” and the “slug method” of sterilization are not acceptable. The "continuous-feed method" as discussed in **ANSI/AWWA C651-92** shall be used to chlorinate the water mains.

B. Continuous-Feed Method of Chlorination: The continuous-feed method of chlorination consists of

1. Placing calcium hypochlorite granules in the main during construction.
2. Completely filling the main to eliminate air pockets.
3. Flushing the main to remove particulates.
4. Filling the main with potable water. The potable water shall be chlorinated so that after a 24-hour holding period in the main there will be a free chlorine residual of not less than 20 ppm.

Calcium hypochlorite granules shall be placed at the upstream end of the first section of pipe, at the upstream end of each branch main and at 500’ intervals. The quantity of granules shall be as follows:

Pipe Diameter (Inches)	Calcium Hypochlorite Granules (Ounces)
4	0.5
6	1.0
8	2.0
12	4.0
16 and larger	8.0

The initial filling shall be at a rate such that water within the main will flow at a velocity no greater than 1 foot per second (fps). Precautions shall be taken to insure that air pockets are eliminated. Once the main has been completely filled with potable water and all air expelled, the main shall be flushed to remove particulates at a rate of not less than 2.5 fps. The discharge point for the flushing operation shall be coordinated with the Engineer.

The procedure for chlorinating the main shall begin with water being made to flow into the newly installed water main at a constant, measured rate. In the absence of a meter the rate

may be approximated by a method approved by the Engineer (A hydrant meter is recommended). At a point not more than 10' downstream from the beginning of the new main, water entering the new main shall receive a dose of chlorine fed at a constant rate such that the water will have not less than 50 ppm free chlorine. The chlorine concentration should be measured at regular intervals using appropriate chlorine test kits.

Chlorine application shall not cease until the entire main (or isolated portion thereof) is filled with heavily chlorinated water. The chlorinated water shall be retained in the main for at least 24 hours during which time all valves and hydrants in the treated section shall be operated to ensure disinfection of the appurtenances. At the end of this 24-hour period, the treated water in all portions of the main shall have a residual of not less than 10 ppm free chlorine.

1. Chlorine Application: The forms of chlorine that may be used in the disinfection operations are liquid chlorine conforming to **ANSI/AWWA B301**, sodium hypochlorite solution conforming to **ANSI/AWWA B300** and calcium hypochlorite granules or tablets conforming to **ANSI/AWWA B300**.

(a) Liquid Chlorine: Liquid Chlorine shall be used only in combination with appropriate gas-flow chlorinators and ejectors and under the direct supervision of a person who is familiar with the physiological, chemical, and physical properties of liquid chlorine. Liquid chlorine may be used only when appropriate safety practices are observed to protect working personnel and the public.

(b) Sodium Hypochlorite Solution and Calcium Hypochlorite Granules: Hypochlorite solutions may be applied to the water to be chlorinated with a gasoline or electrically powered chemical-feed pump designed for feeding chlorine solutions. Feed lines shall be able to withstand the corrosion caused by the concentrated chlorine solutions and the maximum pressures created by the pump.

C. Final Flushing: After the applicable retention period, heavily chlorinated water should not remain in prolonged contact with pipe. In order to prevent damage to the pipe lining or corrosion damage to the pipe itself, the heavily chlorinated water shall be flushed from the main until chlorine measurements show that the concentration in the water leaving the main is no higher than that generally prevailing in the system or is acceptable for domestic use.

The environment to which the chlorinated water is to be discharged shall be inspected. If there is any question that the chlorinated discharge will cause damage to the environment, then a reducing agent shall be applied to the water to be wasted to neutralize thoroughly the chlorine residual remaining in the water. **No chlorinated water shall be discharged directly into surface water** (See **AWWA C-651 Appendix B** for neutralizing chemicals). Where necessary, Federal, State and local regulatory agencies should be contacted to determine special provisions for the disposal of heavily chlorinated water. This effort shall be coordinated fully the by Contractor.

D. Bacteriological Tests: Twenty-four hours after final flushing to remove excess chlorine, representative water samples shall be taken from each water line segment for bacteriological quality tests in accordance with "Standard Methods for the Examination of Water and Wastewater". **All bacteriological analysis must be performed at a state approved laboratory.** At least one sample shall be collected from every 5,000 LF of water main including one set from the end of the line and at least one set from each branch. No portion of the system shall be placed in operation until the tests are approved. If the presence of coliform bacteria is detected in the water samples, the section of pipe shall be resterilized and additional samples shall be taken.

If, during construction, trench water has entered the main, or if in the opinion of the Engineer or job superintendent, excessive quantities of dirt or debris have entered the main, bacteriological samples may be required at intervals of approximately 200 feet shall be identified by location. Samples shall be taken of water that has stood in the main for at least 72 hours after final flushing has been completed.

If the initial disinfection fails to produce satisfactory bacteriological samples, the main may be reflushed and shall be resampled. If check samples show the presence of coliform organisms, then the main shall be rechlorinated by the continuous-feed of chlorination until satisfactory results are obtained.

09. **METHOD OF MEASUREMENT:** The cost of laying pipe including connection of existing mains, pressure testing, sterilization, and bacteriological testing shall be included in the unit price per foot of pipe measured as previously specified. The cost of setting valves, fittings, water services, etc. shall be included in the cost per unit of the respective item measured as specified.

Blocking for fittings shall be measured by the cubic yard of concrete. This item shall include all labor, materials, equipment, and incidentals necessary to properly block all fittings and bends according to the detailed drawings contained herein.

10. **PAYMENT:** Payment shall be made at the contract unit price on items measured as described herein.

BLADEN COUNTY WATER DISTRICT
DETAILED SPECIFICATIONS

SECTION 7: SITEWORK ON WATER MAINS

01. **SCOPE:** This section shall include the clearing and grubbing of all required construction areas together with disposal of materials, site preparation, and clean up as specified herein.

02. **SITE PREPARATION:**

A. Existing Facilities: The Contractor shall provide protection for all existing structures, buildings, and utilities against all construction activity. The Contractor shall protect and preserve the Owner harmless against damage and claims resulting from these activities.

B. Streets and Highways: Effective barricades, danger signals and signs on all streets and in other locations where required for the protection of the work and the safety of the public, shall be provided, erected and maintained by the Contractor. Barricades and obstructions that encroach on, or are adjacent to, public rights of way shall be properly lighted between the hours of sunset and sunrise. The Contractor shall conform to all city, state and local laws and regulations in the use of streets and highways. The Contractor shall be responsible for all damages occurring due to neglect or failure to meet these requirements. When dictated by conditions that might endanger the public, a watchman shall be provided to fulfill the requirements stated herein.

C. Traffic Flow and Continuance of Services: The work shall be arranged in a manner that will cause a minimum of disturbance to vehicular and pedestrian traffic. Adequate ingress and egress to both private and public property shall be provided by the Contractor during all stages of construction. Without written approval from the city or utility company, existing services shall not be interrupted by the construction work.

03. **PRELIMINARY WORK:**

A. Rights of Way: Adequate working space shall be cleared along the pipe lines and space shall be provided for control stakes and hubs. Trees and permanent structures not located within the right of way shall be removed only as directed.

B. Valuable Trees and Shrubs: When the construction work involves the removal of valuable trees and shrubs on existing public rights of way, the work shall be done in cooperation with the city, county, or state.

C. Protection of Private Property: The Contractor shall provide protection for privately owned trees and shrubs bordering the right of way and shall take full responsibility for any damage that does occur.

D. Existing roads, subject to interference by the Contractor's work, shall be kept open in all cases. The Contractor shall provide, erect and maintain, at his own expense, effective barricades on which shall be placed acceptable warning and/or detour signs at each side of any road obstruction caused by the operations of the Contractor. All barricades shall comply with OSHA requirements and State or local laws, whichever is most strenuous.

E. The Contractor shall protect all public roads and bridges which may be damaged by, interfered with, or given undue wear by reason of the work, and shall repair or replace them if damaged, at his own expense, to the satisfaction of governmental authorities and the Owner.

F. When questions arise as to safe methods or suitable protection, the Contractor shall confer with the Owner but full responsibility for results shall rest with the Contractor.

04. **FENCES AND GATES:**

A. The Contractor shall not cut temporary openings or take down fences until he has contacted the property owner, tenant or occupant and arranged the ingress and egress to the right-of-way. All fences and gates removed for construction shall be replaced in like kind by the Contractor. Payment for fence and gate removal and replacement shall be by the Contractor.

B. In each case where the fence is opened, braced posts shall be installed capable of holding the tension in the fence wires so that the adjacent fence spans will not become slack. Where temporary openings are immediately adjacent to the corner post, the fence shall be firmly attached to the brace post, and the fence wire shall be removed or cut at the corner post. At other locations the fence openings shall be made by cutting the wires near one of the braced fence posts. In both the above cases, a gate shall be installed by the Contractor.

C. The Contractor shall be held responsible for damage to crops, livestock, or other property caused by his failure to keep fences, gates, and gaps in proper condition. Damage claims resulting from the Contractor's negligence with respect to construction and maintenance and use of these gates, fences and gaps shall be the Contractor's full responsibility.

D. The continuity of electric fences shall be maintained at all times.

05. **DAMAGES AND COMPLAINTS:**

A. The Contractor shall provide protection which, in the opinion of the Owner, will prevent damage to the property, such as lawns, roads, fences, buildings, drains, bridges and pipelines by passage of his equipment, and shall assume sole responsibility for damages thereby incurred and shall notify the Owner immediately if and when damage occurs. The Owner shall be promptly notified of all pipelines that are broken by the Contractor's operations and immediate arrangements made for repairs. Damage to property shall be repaired to a condition that is as good or better than original.

B. The Contractor shall promptly comply with all reasonable requests of the landowners and tenants relative to access to right-of-way and to general conduct of his work; however, he shall not enter into any agreements with property owners or tenants on other matters such as the saving of logs or firewood or the disposal of brush without prior approval of the Engineer. In cases of disagreement between any landowner or tenant and the Contractor, the Contractor shall notify the Engineer immediately and shall not perform any further operations against the objections of the property owner or tenant without prior approval of the Engineer.

06. **CLEARING AND GRUBBING:** Clearing and grubbing shall be performed in areas indicated and where required for construction. It shall include the complete removal and disposal of all brush, weeds, timber, stumps, rubbish and all other obstructions. All such material shall be removed to a depth of at least one foot below finished grade. In clearing and grubbing areas where excavation is done, all timber, roots, or stumps removed that are exposed by said excavation shall be removed to a depth of one foot below the excavated surface. Cost for clearing and grubbing shall not be paid directly but shall be included in the cost for pipe installation.

07. **DISPOSAL OF CLEARED AND GRUBBED MATERIAL:** All refuse from the clearing and grubbing operation shall be disposed of either by burning or removal to a dump area that is approved by the Owner. The Contractor shall obtain a burning permit from the city fire chief before any burning is started. Burning, if approved, shall be done in such a manner that does not create hazards such as damage to existing structures, trees and vegetation, interference with traffic and construction in progress. When the construction site is outside the city limits and burning is required, proper permits shall be obtained from the city, county or state officials. All disposal by burning shall be kept under constant supervision until all fires have been extinguished. All burning shall comply with all state and local laws relative to the building of fires. Cost for disposal of cleared material shall not be paid directly but shall be included in the cost for pipe installation.

08. **PAVEMENT REMOVAL AND REPLACEMENT:**

A. Removal: When pipe is to be laid in or across existing paved streets, driveways, sidewalks and swales, the pavement shall be cut to true and neat lines as directed by the Engineer. Power driven cutting saws are preferred; pavement breakers driven by air compressors are acceptable if approved by the Engineer. All broken pavement shall be removed before trenching is started.

B. Replacement: The pipe trench shall be backfilled with granular select material to within 8 inches of the pavement surface, compacted and finished per the plan details or as directed by the N.C. Department of Transportation. Base and sub-base shall be maintained in a workmanlike manner until the surface has been replaced in a manner consistent with the plans and specifications.

1. Asphalt Replacement: The edges of the asphalt shall be neatly trimmed to a new face and mopped with asphalt cement. The asphalt surface shall be placed and thoroughly rolled to a smooth, dense surface true to adjacent areas of the street. The asphalt surface course shall consist of Type I-2 bituminous concrete surface course in accordance with North Carolina Department of Transportation Specifications.

2. Concrete Replacement: Concrete replacement shall be performed in accordance with North Carolina Department of Transportation Standard Specifications for Roads and Structures, 1991, Sections 848-1 through 848-3 and 850-1 through 850-3.

Cut areas shall be maintained by the Contractor in a safe, passable condition until paved. Should the area create a dusty condition, the Contractor shall remedy this condition by the use of water or calcium chloride. Special care shall be given to the areas cut in traffic lanes and intersections by placing crushed stone and maintaining in a smooth condition at the Contractor's expense.

C. Curb and Gutter Replacement: Existing curb and gutter removed, disturbed or destroyed by construction, shall be replaced or repaired in a manner consistent with North Carolina Department of Transportation Standard Specifications for Roads and Structures, 2012, Sections 846-1 through 846-3.

D. State Highway Crossings: All construction related to state highway crossings shall be in full compliance with all requirements of the permit and to the satisfaction of the Department of Transportation.

09. RELATION OF WATER MAINS TO SEWERS:

A. Lateral Separation of Sewers and Water Mains: Water mains shall be laid at least 10 feet laterally, from existing or proposed sewers, unless local conditions or barriers prevent a 10-foot lateral separation in which case:

1. The water main is laid in a separate trench with the elevation of the bottom of the water main at least 18 inches above the top of the sewer; or

2. The water main is laid in the same trench as the sewer with the water main located at one side on a bench of undisturbed earth, and with the elevation of the bottom of the water main at least 18 inches above the top of the sewer.

B. Crossing a Water Main Over a Sewer: Whenever it is necessary for a water main to cross over a sewer, the water main shall be laid at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer, unless local conditions or barriers prevent an 18 inch vertical separation in which case both the water main and sewer shall be constructed of ferrous materials and with joints that are equivalent to water main standards for a distance of 10 feet on each side of the point of crossing. The Contractor shall receive approval in the field from the Engineer before payment will be made at ductile iron prices.

C. Crossing a Water Main Under a Sewer: Whenever it is necessary for a water main to cross under a sewer, both the water main and the sewer shall be constructed of ferrous materials and with joints equivalent to water main standards for a distance of 10 feet on each side of the point of crossing. A section of water main pipe shall be centered at the point of crossing.

10. **WETLANDS:** In wetland areas where a compaction of the backfill cannot be obtained the Contractor shall install compacted gravel 6" below the pipe and up to the centerline of the pipe. Crushed stone or crushed gravel used for pipe bedding shall meet **ASTM C33** gradation 57.

11. **ARCHAEOLOGICAL:** If the Contractor, during the prosecution of work, encounters an unidentified archaeological or other cultural resource within the work area, the Contractor shall immediately stop work and notify the Engineer.

12. **METHODS OF MEASUREMENT:** The quantities to be measured under this item shall consist of the number of square yards of pavement replaced. The quantity shall include 8 inches of stone base and 2 inches of S9.5B asphalt surface course. For this contract, the maximum trench width used for final measurement shall be four (4) feet.

13. **PAYMENT:** Payments shall be made at contract unit prices.

A. Vegetation and Ornamental Items: The Contractor shall be fully responsible for protection of or removal and replacement of ornamental trees, shrubs and grasses, decorative items such as retaining walls and all other items with no additional payment or compensation. Seeding and sodding shall be handled as outlined in these Specifications.

B. Pavement:

1. Asphalt Repairs including select backfill and crushed stone will be paid per square yard based on the contract unit price and the structure widths shown in the plans. Asphalt disturbance and repair beyond the area specified by the Engineer will be the responsibility of the Contractor with no additional payment or compensation.
2. Concrete Repairs including select backfill and crushed stone will be paid per square yard based on the contract unit price and the structure widths shown in the plans.
3. Gravel Replacement for driveways will be paid per ton foot based on a thickness of 4” and the driveway widths shown in the plans. The gravel type used for replacement shall be of like kind to the existing gravel.

STANDARD SPECIAL PROVISION
PERMITS

PROJECT COMMITMENTS:

Bladen County
Bridge No. 124 on SR 1318 (River Road)
Over Phillips Creek
Federal Aid Project No. BRZ-1318(13)
W.B.S. No. 45427.1.1

T.I.P. No. B-5411 North Carolina Department of Transportation – Offsite Detour

In order to have time to adequately reroute school busses, Bladen County Schools will be contacted at (910) 862-4136 at least one month prior to road closure.

Bladen County Emergency Services will be contacted at (910) 862-6974 at least one month prior to road closure to make the necessary temporary reassignments to primary response units.

North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

April 30, 2014
Bladen County
NCDWR Project No. 14-0417
Bridge 124 on SR 1318
State Project No. B-5411

APPROVAL of 401 WATER QUALITY CERTIFICATION, with ADDITIONAL CONDITIONS

Mr. Greg Burns, P.E., Division Engineer
NCDOT, Division 6
PO Box 1150
Fayetteville, NC 28302

Dear Mr. Burns:

You have our approval, in accordance with the conditions listed below, for the following impacts for the purpose of replacing Bridge 124 and spillway with a 20'1" x 12' 6" structural plate arch culvert on SR 1318 (River Road) over Phillips Creek in Bladen County:

Stream Impacts in the Cape Fear River Basin

Site	Station	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
2	Sta. 15+37 to 16+66 -L- RT	0	0	110	20	130	0
TOTAL		**0**	**0**	**110**	**20**	**130**	0

Total Stream Impact for Project: 130 linear feet.

Wetland Impacts in the Cape Fear River Basin (riparian)

Site	Station	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact (ac)
2	Sta. 15+37 to 16+66 -L- RT	<0.01	0	0	<0.01	0	0.01
TOTAL		**<0.01**	**0**	**0**	**<0.01**	**0**	**0.01**

Total Wetland Impact for Project: 0.01 acres.

Open Water (tributaries) Impacts in the Cape Fear River Basin

Site	Station	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
1	Sta. 15+15 to 17+68-L- LT	0.36	0	0.36

Transportation and Permitting Unit
1617 Mail Service Center, Raleigh, North Carolina 27699-1617
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604
Phone: 919-807-6300 \ FAX: 919-733-1290
Internet: www.ncwaterquality.org

3	Sta. 15+28 to 15+64-L- RT	0.03	0	0.03
TOTAL		**0.39**	**0**	**0.39**

Total Open Water Impact for Project: 0.39 acres.

The project shall be constructed in accordance with your application dated received April 24, 2014. After reviewing your application, we have decided that these impacts are covered by General Water Quality Certification Number 3891. This certification corresponds to the Nationwide Permit 23 issued by the Corps of Engineers. In addition, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control, Non-Discharge and Water Supply Watershed regulations. This approval will expire with the accompanying 404 permit.

This approval is valid solely for the purpose and design described in your application (unless modified below). Should your project change, you must notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to streams (now or in the future) exceed 150 linear feet, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you must adhere to the conditions listed in the attached certification(s) and any additional conditions listed below.

Condition(s) of Certification:

Project Specific Conditions

1. Strict adherence to the most recent version of NCDOT's Best Management Practices For Bridge Demolition and Removal approved by the US Army Corps of Engineers is a condition of the 401 Water Quality Certification.

2. The culvert shall be installed in a manner that mimics the natural stream cross section as closely as possible, utilizing the construction of floodplain benches and/or use of sills where appropriate. Widening of the stream channel shall be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage

3. The stream channel shall be excavated no deeper than the natural bed material of the stream, to the maximum extent practicable. Efforts must be made to minimize impacts to the stream banks, as well as to vegetation responsible for maintaining the stream bank stability. Any applicable riparian buffer impact for access to stream channel shall be temporary and be re-vegetated with native riparian species.

4. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.

5. For the 20 linear feet of streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and re-vegetated with appropriate native species.

6. Erosion control matting placed in riparian areas shall not contain a nylon mesh grid, which can impinge and entrap small animals. Matting should be secured in place with staples, stakes, or wherever possible, live stakes of native trees. Riparian areas are defined as a distance 25 feet landward from top of stream bank.

7. The project shall be constructed in accordance with the provisions of the NCDOT's National Pollutant Discharge Elimination (NPDES) Stormwater Permit NCS000250, including the applicable requirements of the NCG01000.

General Conditions

8. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams shall 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. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by the NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required.

9. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.

10. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers.

11. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions.

12. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage.

13. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval.

14. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of the NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.

15. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream.

16. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials.

17. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification.

18. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.

19. The permittee and its authorized agents shall conduct its 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 NCDWR determines that such standards or laws are not being met (including the 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, the NCDWR may reevaluate and modify this certification.

20. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification..

21. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager.

22. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification.

23. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.

24. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery.

25. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed.

26. Native riparian vegetation must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction.

27. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.

28. 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 in order to protect surface waters standards:

    a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual.*
    b. The 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.
    c. 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.*
    d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

29. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission.
The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919)-431-3000, Facsimile: (919)-431-3100

A copy of the petition must also be served on DENR as follows:

Mr. Lacy Presnell, General Counsel
Department of Environment and Natural Resources
1601 Mail Service Center

This letter completes the review of the Division of Water Resources under Section 401 of the Clean Water Act. If you have any questions, please contact Mason Herndon at (910) 308-4021or mason.herndon@ncdenr.gov.

Sincerely,

Thomas A Reeder, Director
Division of Water Resources

ec: Liz Hair, US Army Corps of Engineers, Wilmington Field Office
Jim Rerko, Division 6 Environmental Officer
Cynthia Van Der Wiele, Environmental Protection Agency
Gary Jordan, US Fish and Wildlife Service
Travis Wilson, NC Wildlife Resources Commission
Sonia Carrillo, NCDWQ Central Office
File Copy

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **SAW-2012-01673** County: **Bladen** U.S.G.S. Quad: **NC-TAR HEEL**

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Permittee: **North Carolina Department of Transportation, Division 6**
James Rerko
Address: **P.O. Box 1150**
Fayetteville, NC, 28302

Size (acres) **0.1 acre**
Nearest Waterway **Phillips Creek**
USGS HUC **3030005**

Nearest Town **Tarheel**
River Basin **Lower Cape Fear, North Carolina.**
Coordinates Latitude: **34.739057**
Longitude: **-78.752054**

Location description: **The project site is located along SR 1318 (River Road) at existing bridge number 124 over Phillips Creek, a tributary to the Cape Fear River, east of Tarheel, in Bladen County, North Carolina.**

Description of projects area and activity: **This verification authorizes permanent impacts to waters of the U.S. in association with an NC DOT bridge replacement project. Specifically, waters impacted are Phillips Creek, its adjacent wetlands, and open waters. The bridge being replaced is currently a dam and spillway, with the road spanning above. The proposed replacement structure is a 20'-1"X 12'6" structural plate pipe arch culvert. Permanent impacts total 0.01 acre wetland for roadway fill and mechanized clearing, 110 linear feet of stream channel for culvert placement, and 0.39 acre open water (pond) for draining, conversion, and fill necessary to complete the project. The open water impacts proposed will restore hydrology to approximately 30 linear feet of Phillips Creek, and convert 0.22 acre of the former impoundment to wetlands, all located in NC DOT's right of way. The area will be seeded with a wetland seed mix, and the dimensions of the channel will be re-established after the pond is drained and accumulated sediments are removed. The culvert to be installed is designed with sills and baffles to mimic channel dimensions of the stream through the culvert.**

Applicable Law: ☒ **Section 404 (Clean Water Act, 33 USC 1344)**
☐ Section 10 (Rivers and Harbors Act, 33 USC 403)

Authorization: Regional General Permit Number or Nationwide Permit Number: **23**
SEE ATTACHED RGP or NWP GENERAL, REGIONAL AND SPECIAL CONDITIONS

Your work is authorized by the above referenced permit provided it is accomplished in strict accordance with the attached conditions and your submitted application and attached information dated April 25, 2014. Any violation of the attached conditions or deviation from your submitted plans may subject the permittee to a stop work order, a restoration order, a Class I administrative penalty, and/or appropriate legal action.

This verification will remain valid until the expiration date identified below unless the nationwide authorization is modified, suspended or revoked. If, prior to the expiration date identified below, the nationwide permit authorization is reissued and/or modified, this verification will remain valid until the expiration date identified below, provided it complies with all requirements of the modified nationwide permit. If the nationwide permit authorization expires or is suspended, revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide permit, will remain authorized provided the activity is completed within twelve months of the date of the nationwide permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

Activities subject to Section 404 (as indicated above) may also require an individual Section 401 Water Quality Certification. You should contact the NC Division of Water Quality (telephone 919-807-6300) to determine Section 401 requirements.

For activities occurring within the twenty coastal counties subject to regulation under the Coastal Area Management Act (CAMA), prior to beginning work you must contact the N.C. Division of Coastal Management in Morehead City, NC, at (252) 808-2808.

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits.

SAW-2012-01673

If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact **Sarah Hair at 910-251-4049 or Sarah.E.Hair@usace.army.mil**.

Corps Regulatory Official: HAIR.SARAH.E A.1054693512 Date: **June 24, 2014**

Expiration Date of Verification: **March 18, 2017**

Determination of Jurisdiction:

A. ☐ Based on preliminary information, there appear to be waters of the US including wetlands within the above described project area. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331).

B. ☐ There are Navigable Waters of the United States within the above described project area subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

C. ☐ There are waters of the US and/or wetlands within the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

D. ☒ **The jurisdictional areas within the above described project area have been identified under a previous action. Please reference jurisdictional determination issued January 24, 2013. Action ID: SAW-2012-01673.**

Basis For Determination: refer to Preliminary JD issued on January 24, 2013

Remarks:

E. Attention USDA Program Participants

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

F. Appeals Information (This information applies only to approved jurisdictional determinations as indicated in B and C above).

This correspondence constitutes an approved jurisdictional determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

US Army Corps of Engineers
South Atlantic Division
Attn: Jason Steele, Review Officer
60 Forsyth Street SW, Room 10M15
Atlanta, Georgia 30303-8801
Phone: (404) 562-5137

SAW-2012-01673
In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **N/A.**
**It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.*

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete our customer Satisfaction Survey online at http://regulatory.usacesurvey.com/.

Copy furnished:

Agent: Phil May, Carolina Ecosystems, Inc. 3040 NC Hwy 42 West, Clayton, NC 27520

SAW-2012-01673

Action ID Number: SAW-2012-01673 **County:** Bladen

Permittee: North Carolina Department of Transportation, Division 6
James Rerko

Project Name: NCDOT/ TIP B-5411/ BR 124/ SR 1318/Div 6

Date Verification Issued: June 24, 2014

Project Manager: Sarah Hair

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

US ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT
Attn: Sarah Hair
69 Darlington Avenue
Wilmington, North Carolina 28403

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. Failure to comply with any terms or conditions of this authorization may result in the Corps suspending, modifying or revoking the authorization and/or issuing a Class I administrative penalty, or initiating other appropriate legal action.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and condition of the said permit, and required mitigation was completed in accordance with the permit conditions.

_____ _____

Signature of Permittee **Date**

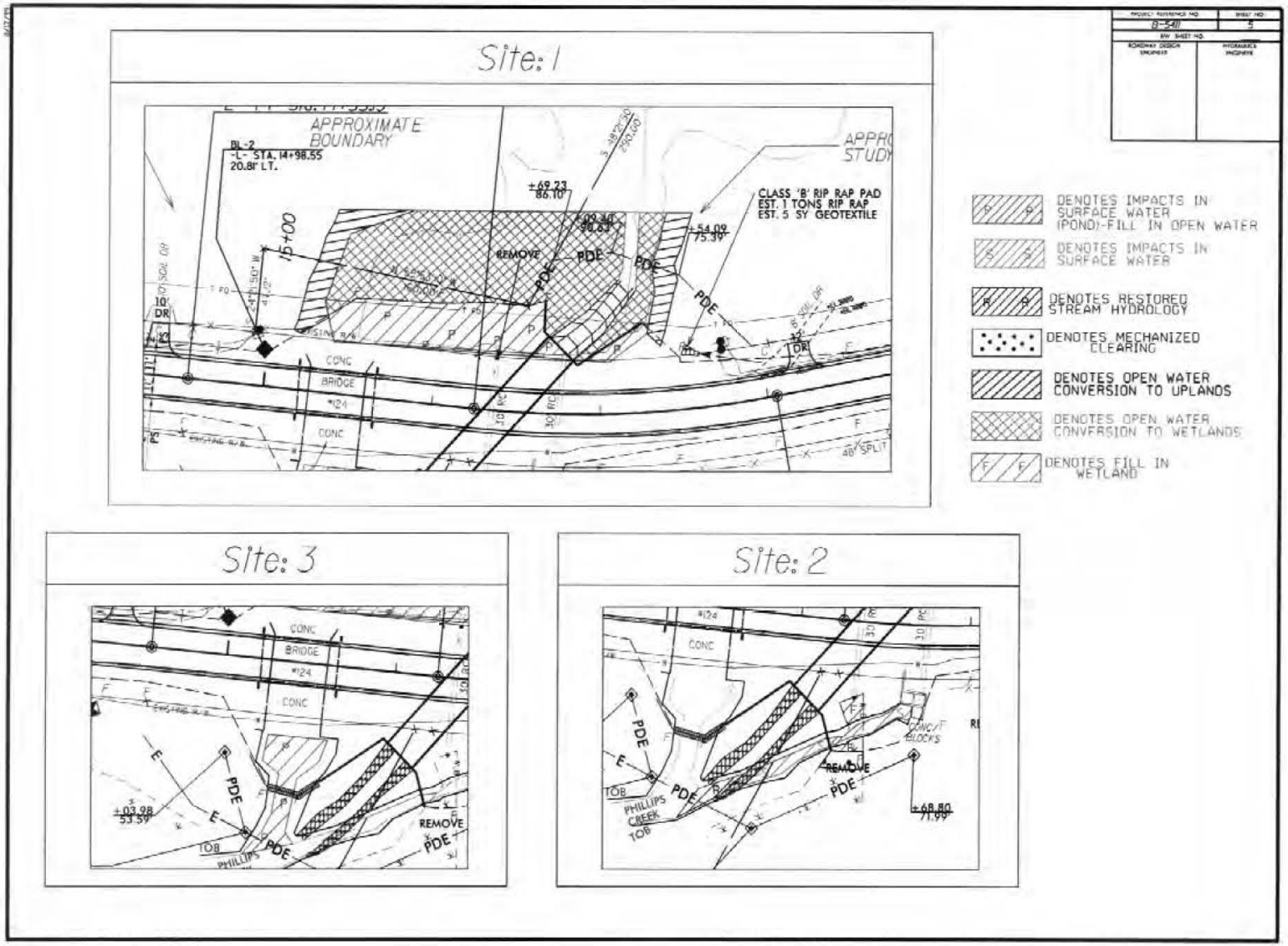
WETLAND PERMIT IMPACT SUMMARY

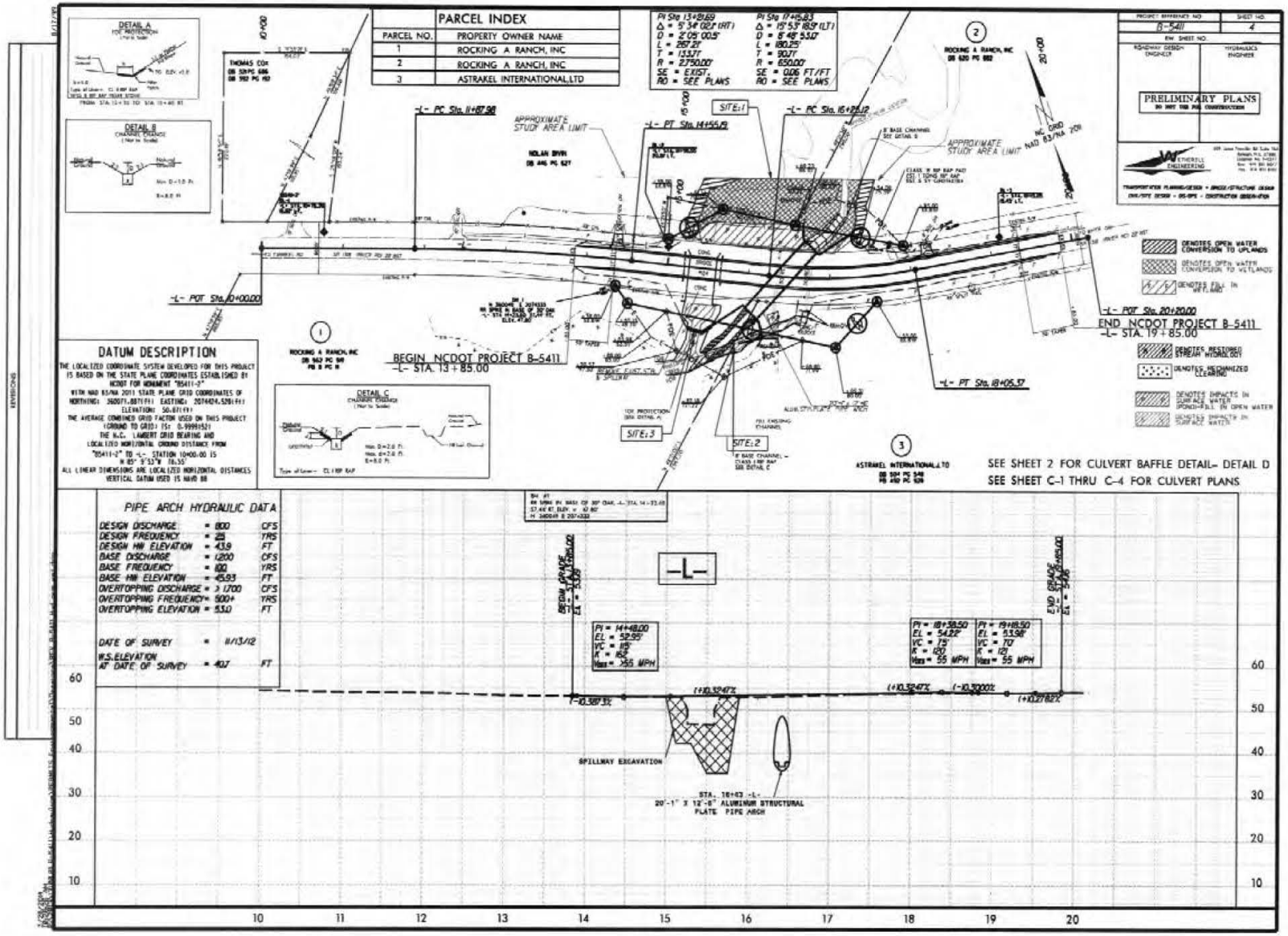
Site No.	Station (From/To)	Structure Size / Type Or Additional Reason	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent Pond impacts (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (lf)	SURFACE WATER IMPACTS: Open Water Conversion to Uplands (ac)	SURFACE WATER IMPACTS: Open Water Conversion to Wetlands (ac)	SURFACE WATER IMPACTS: Restoration of Stream Hydrology (lf)
3	15+28 to 15+64 -L- RT	Removal of existing bridge	-	-	0.028	-		-	-	-
2	15+37 to 16+66 -L- RT	20'-1" x 12'-6" Aluminum Structural Plate Pipe Arch	0.005	0.005	-	0.015	110	-	-	30
1	15+15 to 17+68 -L- LT		-	-	0.086	-	-	0.047	0.222	-
TOTALS:			0.01	0.01	0.11	0.02	110	0.05	0.22	30

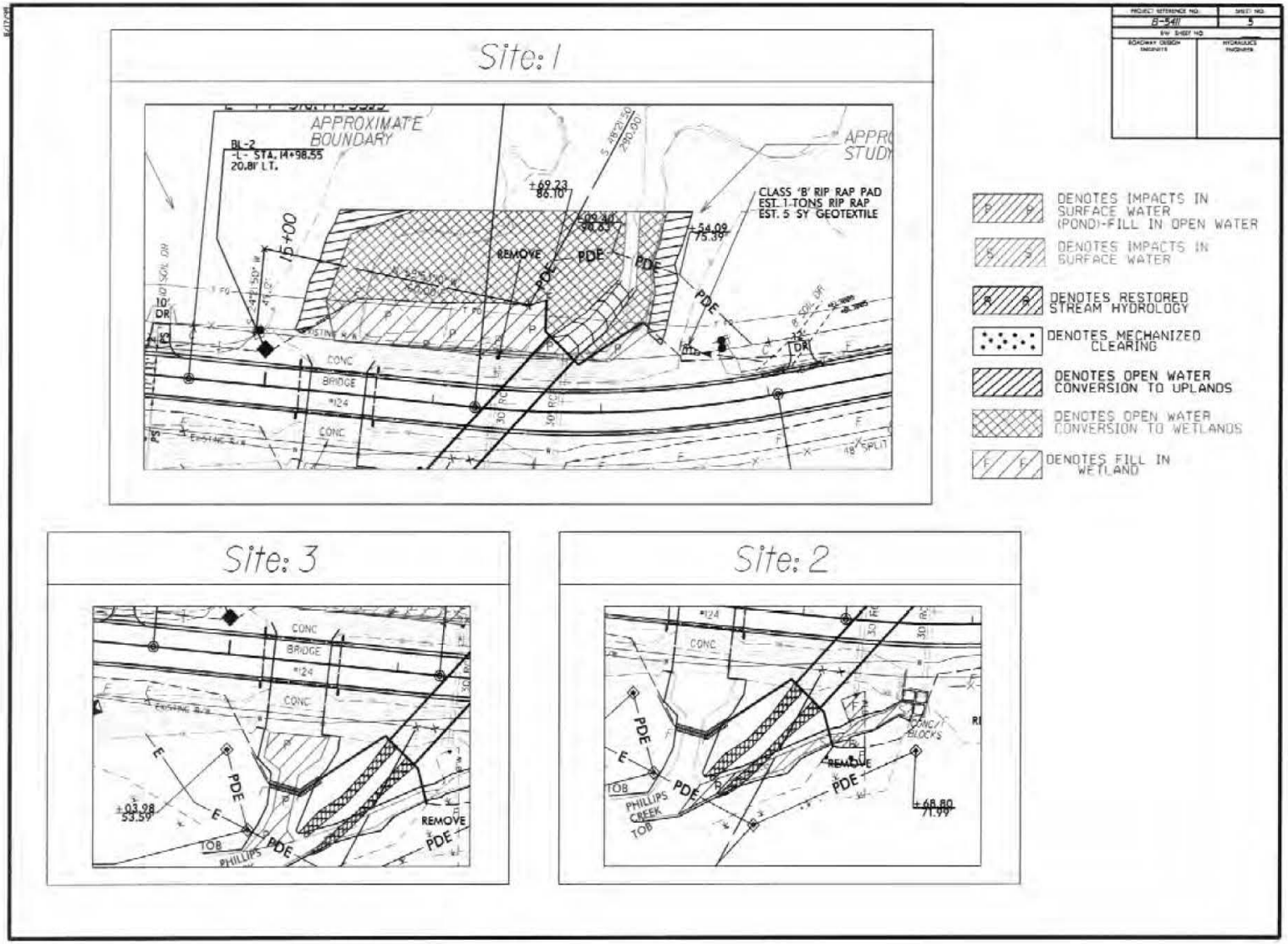
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
Bridge 124 over Phillips Ck on SR1318 (River Road)
BLADEN COUNTY
WBS - 45427.1.1 (B-5411)

3/28/2014

ATN Revised 3/31/05


Site: 1
APPROXIMATE BOUNDARY
BL-2
-L- STA. 14+98.55
20.81' LT.
CLASS 'B' RIP RAP PAD
EST. 1 TONS RIP RAP
EST. 5 SY GEOTEXTILE
REMOVE
PDE
CONC
BRIDGE
#124
48" SPLIT
DENOTES IMPACTS IN SURFACE WATER (POND)-FILL IN OPEN WATER
DENOTES IMPACTS IN SURFACE WATER
DENOTES RESTORED STREAM HYDROLOGY
DENOTES MECHANIZED CLEARING
DENOTES OPEN WATER CONVERSION TO UPLANDS
DENOTES OPEN WATER CONVERSION TO WETLANDS
DENOTES FILL IN WETLAND
Site: 3
Site: 2
TOB
PHILLIPS CREEK TOB


PARCEL INDEX
PARCEL NO. | PROPERTY OWNER NAME
1 | ROCKING A RANCH, INC
2 | ROCKING A RANCH, INC
3 | ASTRAKEL INTERNATIONAL,LTD
PRELIMINARY PLANS
DATUM DESCRIPTION
BEGIN NCDOT PROJECT B-5411
-L- STA. 13+85.00
END NCDOT PROJECT B-5411
-L- STA. 19+85.00
SEE SHEET 2 FOR CULVERT BAFFLE DETAIL- DETAIL D
SEE SHEET C-1 THRU C-4 FOR CULVERT PLANS
PIPE ARCH HYDRAULIC DATA
DESIGN DISCHARGE = 800 CFS
DESIGN FREQUENCY = 25 YRS
DESIGN HW ELEVATION = 43.9 FT
BASE DISCHARGE = 1200 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 45.93 FT
OVERTOPPING DISCHARGE = 3 1700 CFS
OVERTOPPING FREQUENCY= 500+ YRS
OVERTOPPING ELEVATION = 53.0 FT
DATE OF SURVEY = 11/13/12
W.S.ELEVATION AT DATE OF SURVEY = 40.7 FT
SPILLWAY EXCAVATION
STA. 16+63 -L-
20'-1" X 12'-8" ALUMINUM STRUCTURAL PLATE PIPE ARCH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CONC
DENOTES IMPACTS IN SURFACE WATER (POND)-FILL IN OPEN WATER
DENOTES IMPACTS IN SURFACE WATER
DENOTES RESTORED STREAM HYDROLOGY
DENOTES MECHANIZED CLEARING
DENOTES OPEN WATER CONVERSION TO UPLANDS
DENOTES OPEN WATER CONVERSION TO WETLANDS
DENOTES FILL IN WETLAND
Site: 3
Site: 2
TOB
PHILLIPS CREEK
CONC BLOCKS

North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla III
Secretary

June 30, 2014

RANDY GARNER,WATER DIRECTOR
BLADEN COUNTY WATER DISTRICT
P O BOX 2350
ELIZABETHTOWN. NC 28337

Re: **Authorization to Construct**
B-5411 RIVER RD
BLADEN CO WTR DIST-EAST BLADEN
BLADENCOUNTY, NC0309060
Authorization to Construct (This is not a Final Approv

Dear Applicant:

This letter is to confirm that a complete Engineer's Report and a Water System Management Plan have been received, and that engineering plans and specifications have been approved by the Department for **B-5411 RIVER RD, Serial No. 14-00460.**

The Authorization to Construct is valid for 24 months from the **Issue Date** (refer to next page). Authorization to Construct may be extended if the Rules Governing Public Water Supplies and site conditions have not changed (see Rule .0305). The Authorization to Construct and the engineering plans and specifications approval letter shall be posted at the primary entrance of the job site before and during construction.

Upon completion of the construction or modification, and prior **to placing the new construction or modification into service**, the applicant must submit an Engineer's Certification and Applicant Certification directly to SIRAJ CHOHAN, P.E. of this office.

- **Engineer Certification:** in accordance with Rule .0303 (a), the applicant shall submit a certification statement signed and sealed by a registered professional engineer stating that construction was completed in accordance with approved engineering plans and specifications, including any provisions stipulated in the Department's engineering plan and specification approval letter.
- **Applicant Certification:** in accordance with Rule .0303 (c), the applicant shall submit a signed certification statement indicating that the requirements for an Operation and Maintenance Plan and Emergency Management Plan have been satisfied in accordance with Rule .0307 (d) and (e) and that the system has a certified operator in accordance with Rule .1300. The "Applicant Certification" form is available at http://www.deh.enr.state.nc.us/pws/ (click on Plan Review Forms, under Plan Review heading).

If this Authorization to Construct is for a new public water system, the owner must submit a completed **application for an Operating Permit** and the appropriate fee. For a copy of the application for an Operating Permit please call (919) 707-9085.

Once the certifications and permit application and fee, (if applicable), are received and determined adequate, the Department will issue a Final Approval letter to the applicant. In accordance with Rule .0309 (a), **no portion of this project shall be placed into service until the Department has issued Final Approval.**

If the Public Water Supply Section can be of further assistance, please call (919) 707-9100.

Sincerely,

Siraj Chohan, P.E., Plan Review Team Leader
Public Water Supply Section
Division of Water Resources

cc: DIANE J WILLIAMS, Fayetteville Regional Office
Wetherill Engineering (Raleigh)

1634 Mail Service Center, Raleigh, North Carolina 27699-1634
Phone: 919-707-9100 \ FAX: 919-715-4374 \ Lab Form FAX: 919-715-6637 \ Internet: www.ncwater.org/pws
An Equal Opportunity \ Affirmative Action Employer

North Carolina Department of Environment and Natural Resources
Division of Water Resources

Public Water System Authorization to Construct

Public Water System Name and Water System No.:	BLADEN CO WTR DIST-EAST BLADEN NC0309060
Project Name:	B-5411 RIVER RD
Serial No.:	14-00460
Issue Date:	06/30/2014
Expiration Date:	24 Months after Issue Date

In accordance with NCAC 18C .0305, this Authorization to Construct must be posted at the primary entrance to the job site during construction.

North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

June 30, 2014

Mr. Randy Garner, Water Director
Bladen County Water District
Post Office Box 2350
Elizabethtown, North Carolina 28337

Re: Engineering Plans and Specifications Approval
Water Main Relocation
B-5411 River Road
Bladen County Water District – East Bladen
Water System No.: NC0309060, Bladen County
Serial No. 14-00460

Dear Mr. Garner:

Enclosed please find one copy of the "Application for Approval..." together with one copy of the referenced engineering plans and specifications bearing the Division of Water Resources stamp of approval for the referenced project. These engineering plans and specifications are approved under Division of Water Resources Serial Number 14-00460, dated June 30, 2014.

Engineering plans and specifications prepared by Michael V. Zaccardo, P.E., call for installation of approximately 320 feet of 6-inch water main, valves and other appurtenances along River Road (NCSR 1318) at Phillips Creek crossing to relocate an existing water main due to upcoming bridge work project.

Please note that in accordance with 15A NCAC 18C .0309(a), no construction, alteration, or expansion of a water system shall be placed into service or made available for human consumption until the Public Water Supply Section has issued Final Approval. Final Approval will be issued and mailed to the applicant upon receipt of both an Engineer's Certification and an Applicant's Certification submitted in accordance 15A NCAC 18C .0303 (a) and (c).

These plans and specifications in the foregoing application are approved insofar as the protection of public health is concerned as provided in the rules, standards and criteria adopted under the authority of Chapter 130A-317 of the General Statutes. This approval does not constitute a warranty of the design, construction or future operation of the water system.

One copy of the "Application for Approval..." and a copy of the plans and specifications with a seal of approval from the department are enclosed. One copy of the approved documents in a digital format (CD) is being forwarded to our Fayetteville Regional Office. The second copy of the CD is being retained for our files.

1634 Mail Service Center, Raleigh, North Carolina 27699-1634
Phone: 919-707-9100 \ FAX: 919-715-4374 \ Lab Form FAX: 919-715-6637 \ Internet: ncwater.org/pws/

If the Public Water Supply Section can be of further service, please call (919) 707-9100.

Sincerely,

Siraj Chohan, P.E.
Plan Review Team Leader
Public Water Supply Section
Division of Water Resources

SMC/SMB

Enclosures: Approval Document

cc: Diane J. Williams, Fayetteville Regional Office
Bladen County Health Department
Wetherill Engineering

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

Payment will be made on any contract terminated pursuant to the special provision in accordance with Subarticle 108-13(E) of the *2012 Standard Specifications*.

STANDARD SPECIAL PROVISION
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:

Restricted Noxious **Weed**	Limitations per Lb. Of Seed	Restricted Noxious **Weed**	Limitations per Lb. of Seed
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)
Kobe Lespedeza
Korean Lespedeza
Weeping Lovegrass
Carpetgrass
Bermudagrass
Browntop Millet
German Millet – Strain R
Clover – Red/White/Crimson

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

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

STANDARD SPECIAL PROVISION

ERRATA

(1-17-12) (Rev. 1-21-14) Z-4

Revise the *2012 Standard Specifications* as follows:

Division 2

Page 2-7, line 31, Article 215-2 Construction Methods, replace "Article 107-26" with "Article 107-25".
Page 2-17, Article 226-3, Measurement and Payment, line 2, delete "pipe culverts,".
Page 2-20, Subarticle 230-4(B), Contractor Furnished Sources, change references as follows: Line 1, replace "(4) Buffer Zone" with "(c) Buffer Zone"; **Line 12,** replace "(5) Evaluation for Potential Wetlands and Endangered Species" with "(d) Evaluation for Potential Wetlands and Endangered Species"; and **Line 33,** replace "(6) Approval" with "(4) Approval".

Division 3

Page 3-1, after line 15, Article 300-2 Materials, replace "1032-9(F)" with "1032-6(F)".

Division 4

Page 4-77, line 27, Subarticle 452-3(C) Concrete Coping, replace "sheet pile" with "reinforcement".

Division 6

Page 6-7, line 31, Article 609-3 Field Verification of Mixture and Job Mix Formula Adjustments, replace "30" with "45".
Page 6-10, line 42, Subarticle 609-6(C)(2), replace "Subarticle 609-6(E)" with "Subarticle 609-6(D)".
Page 6-11, Table 609-1 Control Limits, replace "Max. Spec. Limit" for the Target Source of $P_{0.075}/P_{be}$ Ratio with "1.0".
Page 6-40, Article 650-2 Materials, replace "Subarticle 1012-1(F)" with "Subarticle 1012-1(E)"

Division 8

Page 8-23, line 10, Article 838-2 Materials, replace "Portland Cement Concrete, Class B" with "Portland Cement Concrete, Class A".

Division 12

Page 12-7, Table 1205-3, add "FOR THERMOPLASTIC" to the end of the title.
Page 12-8, Subarticle 1205-5(B), line 13, replace "Table 1205-2" with "Table 1205-4".
Page 12-8, Table 1205-4 and 1205-5, replace "THERMOPLASTIC" in the title of these tables with "POLYUREA".
Page 12-9, Subarticle 1205-6(B), line 21, replace "Table 1205-4" with "Table 1205-6".
Page 12-11, Subarticle 1205-8(C), line 25, replace "Table 1205-5" with "Table 1205-7".

Division 15

Page 15-4, Subarticle 1505-3(F) Backfilling, line 26, replace "Subarticle 235-4(C)" with "Subarticle 235-3(C)".
Page 15-6, Subarticle 1510-3(B), after line 21, replace the allowable leakage formula with the following: $W = LD\sqrt{P} \div 148,000$
Page 15-6, Subarticle 1510-3(B), line 32, delete "may be performed concurrently or" and replace with "shall be performed".
Page 15-17, Subarticle 1540-3(E), line 27, delete "Type 1".

Division 17

Page 17-26, line 42, Subarticle 1731-3(D) Termination and Splicing within Interconnect Center, delete this subarticle.

Revise the *2012 Roadway Standard Drawings* as follows:

1633.01 Sheet 1 of 1, English Standard Drawing for Matting Installation, replace "1633.01" with "1631.01".

STANDARD SPECIAL PROVISION

PLANT AND PEST QUARANTINES

(Imported Fire Ant, Gypsy Moth, Witchweed, And Other Noxious Weeds)

(3-18-03) (Rev. 10-15-13) 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.gov/plantind/* to determine those specific project sites located in the quarantined area or for any regulated article used on this project originating in a quarantined county.

Regulated Articles Include

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

STANDARD SPECIAL PROVISION

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".

STANDARD SPECIAL PROVISION

MINORITY AND FEMALE EMPLOYMENT REQUIREMENTS

Z-7

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

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

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

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

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

EMPLOYMENT GOALS FOR MINORITY AND FEMALE PARTICIPATION

Economic Areas

Area 023 29.7%
Bertie County
Camden County
Chowan County
Gates County
Hertford County
Pasquotank County
Perquimans County

Area 024 31.7%
Beaufort County
Carteret County
Craven County
Dare County
Edgecombe County
Green County
Halifax County
Hyde County
Jones County
Lenoir County
Martin County
Nash County
Northampton County
Pamlico County
Pitt County
Tyrrell County
Washington County
Wayne County
Wilson County

Area 025 23.5%
Columbus County
Duplin County
Onslow County
Pender County

Area 026 33.5%
Bladen County
Hoke County
Richmond County
Robeson County
Sampson County
Scotland County

Area 027 24.7%
Chatham County
Franklin County
Granville County
Harnett County
Johnston County
Lee County
Person County
Vance County
Warren County

Area 028 15.5%
Alleghany County
Ashe County
Caswell County
Davie County
Montgomery County
Moore County
Rockingham County
Surry County
Watauga County
Wilkes County

Area 029 15.7%
Alexander County
Anson County
Burke County
Cabarrus County
Caldwell County
Catawba County
Cleveland County
Iredell County
Lincoln County
Polk County
Rowan County
Rutherford County
Stanly County

Area 0480 8.5%
Buncombe County
Madison County

Area 030 6.3%
Avery County
Cherokee County
Clay County
Graham County
Haywood County
Henderson County
Jackson County
McDowell County
Macon County
Mitchell County
Swain County
Transylvania County
Yancey County

SMSA Areas

Area 5720 26.6%
Currituck County

Area 9200 20.7%
Brunswick County
New Hanover County

Area 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%

STANDARD SPECIAL PROVISION

REQUIRED CONTRACT PROVISIONS FEDERAL - AID CONSTRUCTION CONTRACTS

FHWA - 1273 Electronic Version - May 1, 2012 Z-8

ATTACHMENTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

   The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

   Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

   Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).
2. Subject to the applicability criteria noted in the following sections, 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 superintendence and to all work performed on the contract by piecework, station work, or by subcontract.
3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.
4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor

performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

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, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) 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 provisions of the Americans with 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 contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.
   b. The contractor will accept as its 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, pre-apprenticeship, and/or on-the-job training."
2. **EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program 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 authorized 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 responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions 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 minorities and women.
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 minorities and women 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 minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women 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, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.
   c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such 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 its 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 their avenues of appeal.
6. **Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.
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. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).
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 employees who are minorities and women 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 good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 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 good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.
   b. The contractor will use good faith 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 contracting agency 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 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 minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. 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 contracting agency.
8. **Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.
9. **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. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.
   a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.
   b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. **Assurance Required by 49 CFR 26.13(b):**
    a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.
    b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.
11. **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 the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.
    a. The records kept by the contractor shall document the following:
        (1) The number and work hours 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; and
        (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;
    b. The contractors and subcontractors will submit an annual report to the contracting agency 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. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. **Minimum wages**

a. All laborers and mechanics 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 issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, 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 29 CFR 5.5(a)(4). 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. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) 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.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), 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 Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The 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.

(3) In the event the contractor, the laborers or mechanics to be employed in the 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.

The Wage and Hour 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.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. 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 shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as 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.

2. **Withholding.** The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor 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, so 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 contracting agency 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.

3. **Payrolls and basic records**

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents 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. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) 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 shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional

Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/ wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each 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 Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) 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 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, 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 FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action 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.

4. **Apprentices and trainees**

a. Apprentices (programs of the USDOL). 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 U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or 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 Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen 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 worker 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 on 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 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's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

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 journeymen 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 determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL). 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 U.S. Department of Labor, Employment and Training Administration.

   The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

   Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman 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 wage rate on the wage determination which provides for less than full fringe benefits for apprentices. 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.

   In the event the Employment and Training Administration withdraws approval of a training program, the contractor 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. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. 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.

5. **Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.
6. **Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.
7. **Contract termination:** debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
8. **Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
9. **Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 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 U.S. Department of Labor, or the employees or their representatives.
10. **Certification of eligibility.**
    a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
    b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
    c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
2. **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the 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 or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such

individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. **Withholding for unpaid wages and liquidated damages.** The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys 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 (2.) of this section.
4. **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

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 contracting agency. 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 635.116).
   a. The term “perform work with its own organization” refers to workers employed or leased 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 or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:
      (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
      (2) the prime contractor remains responsible for the quality of the work of the leased employees;
      (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
      (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.
   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 or propose 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 VI 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 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 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 contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.
5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

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 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. 3704).
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.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

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, Form FHWA-1022 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:

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 under this title or imprisoned not more than 5 years or both."

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

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

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

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

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

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. **Instructions for Certification – First Tier Participants:**
   a. By signing and submitting this proposal, the prospective first tier 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 first tier 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 first tier 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 contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.
   d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier 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," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).
f. The prospective first 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 entering into this transaction.
g. The prospective first tier 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 Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.
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 is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.
i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective 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.

* * * * *

2. **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**
   a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:
      (1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;
      (2) 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;

(3) 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 (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective 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 Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

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," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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 exceeding the $25,000 threshold.

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 is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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 Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions 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.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is 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 its bid or proposal that the participant 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.

REVISION TO FHWA-1273 CONCERNING TAP-FUNDED PROJECTS:
(10-15-13) SP1 G190

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

Replace the last sentence in Section I.4 and the third sentence in the first paragraph of Section IV with the following:

Transportation Alternative Program (TAP)-funded projects shall have the same requirements as Federal-Aid highway projects except physical location exceptions will not apply.

STANDARD SPECIAL PROVISION

ON-THE-JOB TRAINING:

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

Description

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

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

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

Minorities and Women

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

Assigning Training Goals

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

Training Classifications

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

Equipment Operators	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.

STANDARD SPECIAL PROVISION
MINIMUM WAGES
GENERAL DECISION NC130096 01/04/2013 NC96

Z-96

Date: January 4, 2013

General Decision Number: NC130096 01/04/13 NC96

Superseded General Decision Numbers: NC20120096

State: North Carolina

Construction Type: HIGHWAY

COUNTIES:

Bladen	Lee	Robeson
Cleveland	Lenoir	Rowan
Columbus	Lincoln	Sampson
Davidson	Montgomery	Scotland
Duplin	Moore	Stanly
Harnett	Richmond	Wilson
Iredell		

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects, railroad construction, bascule, suspension and spandrel arch bridges designed for commercial navigation, bridges involving marine construction, and other major bridges).

Modification Number	Publication Date
0	01/04/2013

	Rates	Fringes
CARPENTER (Form Work Only)	13.30	
CEMENT MASON/CONCRETE FINISHER	14.18	
INSTALLER (Guardrail) (includes Guiderail/Post Driver Work)	11.76	
IRONWORKER (Reinforcing)	13.90	
LABORER		
Asphalt, Asphalt Distributor, Raker, and Spreader	12.81	
Common or General		
Davidson County	10.64	
Harnett County	10.41	
Iredell County	10.38	
Lenoir County	9.98	
Remaining Counties	10.27	
Richmond County	10.46	
Robeson County	10.07	
Rowan County	10.25	
Stanly County	9.03	
Concrete Saw	11.56	
Landscape	9.90	
Luteman	12.68	
Mason Tender (Cement/Concrete)	10.53	
Pipelayer		
Remaining Counties	11.79	
Stanly County	12.25	
Traffic Control (Flagger)	10.31	
POWER EQUIPMENT OPERATORS		
Backhoe/Excavator/Trackhoe	14.64	
Broom/Sweeper	12.29	
Bulldozer	15.32	
Crane	19.10	
Grader/Blade	19.29	
Loader	13.93	
Mechanic	15.92	
Milling Machine		
Columbus, Davidson, Duplin, Lenoir, Lincoln, Moore, Richmond, and Stanly Counties	14.09	
Remaining Counties	13.80	
Oiler	14.19	
Paver	14.10	
Roller	12.83	
Scraper	12.29	
Screed	14.75	
Tractor	13.92	
TRUCK DRIVER		
Dump Truck		
Davidson County	12.61	
Remaining Counties	11.80	
Lowboy Truck	15.99	
Single Axle Truck	12.07	
Water Truck	13.82	

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

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

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

END OF GENERAL DECISION

12/19/89

AWARD LIMITS ON MULTIPLE PROJECTS

It is the desire of the Proposer to be awarded contracts, the value of which will not exceed a total of $_____, for those projects indicated below on which bids are being opened on the same date as shown in the Proposal Form. Individual projects shall be indicated by placing the project number and county in the appropriate place below. Projects not selected will not be subject to an award limit.

_____	_____
(Project Number)	(County)
_____	_____
(Project Number)	(County)
_____	_____
(Project Number)	(County)
_____	_____
(Project Number)	(County)

*If a Proposer desires to limit the total amount of work awarded to him in this letting, he shall state such limit in the space provided above in the second line of this form.

It is agreed that in the event that I am (we are) the successful bidder on indicated projects, the total value of which is more that the above stipulated award limits, the Board of Transportation will award me (us) projects from among those indicated which have a total value not exceeding the award limit and which will result in the best advantage to the Department of Transportation.

_____
**Signature of Authorized Person

**Only those persons authorized to sign bids under the provisions of Article 102-8, Item 7, shall be authorized to sign this form.

LISTING OF DBE SUBCONTRACTORS

Sheet _____ of _____

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

Contract No. _____ County _____ Firm _____

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

Bidders with no DBE participation must so indicate this on the form by entering the word or number *zero*.

LISTING OF DBE SUBCONTRACTORS

Sheet _____ of _____

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

***** 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.

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. B-5411
County Bladen

Rev. 7-12-10

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 _____ By _____

Secretary/Assistant Secretary
Select appropriate title

President/Vice President/Assistant Vice President
Select appropriate title

_____
Print or type Signer's name

_____
Print or type Signer's name

CORPORATE SEAL

AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the

_____ day of _____ 20__.

NOTARY SEAL

_____
Signature of Notary Public

of _____County

State of _____

My Commission Expires:_____

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

PARTNERSHIP

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

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

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

SIGNATURE OF CONTRACTOR

_____
Full Name of Partnership

_____
Address as Prequalified

_____ By _____
Signature of Witness — Signature of Partner

_____ _____
Print or type Signer's name — Print or type Signer's name

AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the **NOTARY SEAL**

_____ day of _____ 20__.

_____
Signature of Notary Public

of _____County

State of _____

My Commission Expires:_____

Contract No. B-5411
County Bladen

Rev. 7-12-10

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

NOTARY SEAL

_____ day of _____ 20__.

_____
Signature of Notary Public

of _____County

State of _____

My Commission Expires:_____

Contract No. B-5411 Rev. 7-12-10
County Bladen

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	*NOTARY SEAL*	*NOTARY SEAL*
Affidavit must be notarized for Line (2)	*Affidavit must be notarized for Line (3)*	*Affidavit must be notarized for Line (4)*
Subscribed and sworn to before me this	Subscribed and sworn to before me this	Subscribed and sworn to before me this
_____day of_____ 20___	_____day of _____ 20___	____day of _____ 20_____
_____	_____	_____
Signature of Notary Public	Signature of Notary Public	Signature of Notary Public
of _____County	of _____County	of _____County
State of _____	State of _____	State of _____
My Commission Expires:_____	My Commission Expires:_____	My Commission Expires:_____

Contract No. B-5411 Rev. 7-12-10
County Bladen

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. B-5411
County Bladen

Rev. 7-12-10

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

NOTARY SEAL

_____ day of _____ 20__.

_____
Signature of Notary Public

of _____County

State of _____

My Commission Expires:_____

DEBARMENT CERTIFICATION

Conditions for certification:

1. The prequalified bidder shall provide immediate written notice to the Department if at any time the bidder learns that his certification was erroneous when he submitted his debarment certification or explanation that is file with the Department, or has become erroneous because of changed circumstances.

2. The terms *covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal,* and *voluntarily excluded,* as used in this provision, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. A copy of the Federal Rules requiring this certification and detailing the definitions and coverages may be obtained from the Contract Officer of the Department.

3. The prequalified bidder agrees by submitting this form, that he will not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in NCDOT contracts, unless authorized by the Department.

4. For Federal Aid projects, the prequalified bidder further agrees that by submitting this form he will include the Federal-Aid Provision titled *Required Contract Provisions Federal-Aid Construction Contract (Form FHWA PR* 1273) provided by the Department, without subsequent modification, in all lower tier covered transactions.

5. The prequalified bidder may rely upon a certification of a participant in a lower tier covered transaction that he is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless he knows that the certification is erroneous. The bidder may decide the method and frequency by which he will determine the eligibility of his subcontractors.

6. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this provision. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

7. Except as authorized in paragraph 6 herein, the Department may terminate any contract if the bidder knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available by the Federal Government.

DEBARMENT CERTIFICATION

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

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records; making false statements; or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph b. of this certification; and

d. Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

e. Will submit a revised Debarment Certification immediately if his status changes and will show in his bid proposal an explanation for the change in status.

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

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

☐ Check here if an explanation is attached to this certification.

North Carolina Department of Transportation
CONTRACT BID FORM

TIP NUMBER: B-5411
WBS ELEMENT: 45427.1.1
FEDERAL AID NO.: BRZ-1318(13)
COUNTY: Bladen
ROUTE: SR 1318

DESCRIPTION: Replace Bridge # 124 over Phillips Creek

BID OPENING: 10:00 A.M., September 24, 2014

ITEM	SECT	TRANSPORT NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE	AMOUNT BID
1	800	0000100000-N	MOBILIZATION	1	LS		
2	801	0000400000-N	CONSTRUCTION SURVEYING	1	LS		
3	226	0043000000-N	GRADING	1	LS		
4	226	0050000000-N	SUPPLEMENTAL CLEARING & GRUBBING	1	ACR		
5	226	0057000000-E	UNDERCUT EXCAVATION	2050	CY		
6	270	0196000000-E	GEOTEXTILE FOR SOIL STABILIZATION	920	SY		
7	340	0995000000-E	PIPE REMOVAL	160	LF		
8	SP	1077000000-E	# 57 STONE	3470	TON		
9	505	1099700000-E	CLASS IV SUBGRADE STABILIZATION	300	TON		
10	545	1220000000-E	INCIDENTAL STONE BASE	50	TON		
11	607	1330000000-E	INCIDENTAL MILLING	130	SY		
12	610	1489000000-E	ASPHALT CONCRETE BASE COURSE, TYPE B25.0B	400	TON		
13	610	1498000000-E	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I9.0B	260	TON		
14	610	1519000000-E	ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B	300	TON		
15	620	1575000000-E	ASPHALT BINDER FOR PLANT MIX	50	TON		
16	806	2000000000-E	RIGHT OF WAY MARKERS	8	EA		
17	SP	2275000000-E	FLOWABLE FILL	62	CY		

ITEM	SECT	TRANSPORT NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE	AMOUNT BID
18	SP	2474000000-N	20’-1” X 12’-6” CAA STRUCTURAL PLATE PIPE ARCH, 0.200 INCH THICK, WITH ALUMINUM HEADWALLS	1	LS		
19	862	3030000000-N	STEEL BEAM GUARDRAIL	262.50	LF		
20	862	3150000000-N	ADDITIONAL GUARDRAIL POSTS	5	EA		
21	SP	3270000000-N	GUARDRAIL ANCHOR UNITS, TYPE 350	4	EA		
22	867	3574000000-E	GENERIC FENCING ITEM	70	LF		
23	876	3628000000-E	RIP RAP, CLASS I	132	TON		
24	876	3649000000-E	RIP RAP, CLASS B	1	TON		
25	876	3656000000-E	GEOTEXTILE FOR DRAINAGE	330	SY		
26	SP	3691000000-N	GENERIC EROSION CONTROL ITEM – Bypass Pumping	1	LS		
27	1110	4400000000-E	STATIONARY WORK ZONE SIGNS	497	SF		
28	1110	4405000000-E	PORTABLE WORK ZONE SIGNS	32	SF		
29	1110	4410000000-E	BARRICADE MOUNTED WORK ZONE SIGNS	94	SF		
30	1135	4435000000-N	CONES	5	EA		
31	1145	4445000000-E	BARRICADES, TYPE III	80	LF		
32	1205	4685000000-E	THERMOPLASTIC PAVEMENT MARKING LINES (4”, 90 MILS)	1200	LF		
33	1205	4686000000-E	THERMOPLASTIC PVMT MRKG LINES (4”, 120 MILS)	1200	LF		
34	1251	4900000000-N	PERMANENT RAISED PAVEMENT MARKERS	15	EA		
35	1510	5325600000-E	6” WATER LINE	140	LF		
36	1510	5325800000-E	8” WATER LINE	176	LF		
37	1605	6000000000-E	TEMPORARY SILT FENCE	1850	LF		
38	1610	6006000000-E	EROSION CONTROL STONE, CLASS A	80	TON		
39	1610	6009000000-E	EROSION CONTROL STONE, CLASS B	65	TON		
40	1610	6012000000-E	SEDIMENT CONTROL STONE	30	TON		
41	1615	6015000000-E	TEMPORARY MULCHING	1	ACR		
42	1620	6018000000-E	SEED FOR TEMPORARY SEEDING	50	LB		
43	1620	6021000000-E	FERTILIZER FOR TEMPORARY SEEDING	0. 25	TON		
44	1622	6024000000-E	TEMPORARY SLOPE DRAINS	200	LF		
45	SP	6029000000-E	SAFETY FENCE	100	LF		
46	1630	6030000000-E	SILT EXCAVATION	30	CY		
47	1631	6036000000-E	MATTING FOR EROSION CONTROL	600	SY		
48	1632	6042000000-E	¼” HARDWARE CLOTH	60	LF		
49	1638	6069000000-E	STILLING BASINS	120	CY		
50	SP	6071012000-E	COIR FIBER WATTLE	50	LF		
51	1640	6071030000-E	COIR FIBER BAFFLE	285	LF		
52	1660	6084000000-E	SEEDING & MULCHING	1	ACR		
53	1660	6087000000-E	MOWING	1	ACR		

ITEM	SECT	TRANSPORT NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE	AMOUNT BID
54	1661	6090000000-E	SEED FOR REPAIR SEEDING	50	LB		
55	1661	6093000000-E	FERTILIZER FOR REPAIR SEEDING	0.25	TON		
56	1662	6096000000-E	SEED FOR SUPPLEMENTAL SEEDING	50	LB		
57	1665	6108000000-E	FERTILIZER TOPDRESSING	0.75	TON		
58	SP	6110000000-E	IMPERVIOUS DIKE	192	LF		
59	1667	6114500000-E	SPECIALIZED HAND MOWING	10	MHR		
60	SP	6117000000-N	RESPONSE FOR EROSION CONTROL	13	EA		
61	402	8035000000-N	REMOVAL OF EXISTING STRUCTURE AT STATION 15+43.05 –L-	1	LS		
62	412	8121000000-N	UNCLASSIFIED STRUCTURE EXCAVATION, STATION 16+80.00 -L-	1	LS		

TOTAL BID FOR PROJECT: _____

CONTRACTOR _____

STREET ADDRESS _____

CITY, STATE, ZIP _____

Federal Identification Number ---------- Contractor's License Number _____

Authorized Agent _____ Title _____

Signature _____ Date _____

Witness _____ Title _____

Signature _____ Date _____

THIS SECTION TO BE COMPLETED BY NC DEPARTMENT OF TRANSPORTATION

This bid has been reviewed in accordance with Article 103-1 of the Standard Specifications for Roads and Structures 2012.

Reviewed by NCDOT_____ Date_____

Accepted by NCDOT _____ Date_____

Division Engineer

GEOTECHNICAL BORING LOGS

PERMIT DRAWINGS