

DATE: August 12, 2010

CONTRACT ID: DO00086  
WBS ELEMENT: 42558.3.1  
TIP No. : BK-5107

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

Request For Proposals For:

Bridge Replacement With  
Prestressed Cored Slabs  
Nash County  
Bridge Number 120

Proposals subject to the conditions made a part hereof will be received until 2:00 P.M., Thursday, September 23, 2010 and then publicly opened for furnishing the services as described herein.

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

Send all proposals directly to the issuing agency:

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

ATTENTION: DAN HOLDERMAN, PE

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





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## PRE-QUALIFYING TO BID

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

All prospective Bidders shall be pre-qualified with the Department of Transportation prior to submitting a bid. Contractors who are not pre-qualified may obtain information and forms for pre-qualifying from:

Contractual Services Unit  
State Contractual Services Engineer:  
Greg Keel, PE  
Tel .(919) 733-7174  
Fax (919) 715-7378

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

## PRE-BID CONFERENCE

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

No questions concerning the project will be answered by any Department personnel at any time except at the Pre-Bid Conference.

Attendance at the Pre-Bid Conference will not meet the requirements of proper registration unless the individual attending has registered at the Conference in accordance with the following:

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

Bidders are to meet for the Pre-Bid Conference at 1:30 p.m., Thursday, September 2, 2010 in the State Bridge Management Unit, Chief Engineers Conference Room in the NCDOT Maintenance Office Building at 4809 Beryl Road which is directly across (south) from the NC State Fairgrounds in Raleigh, North Carolina, Wake County. (SEE PRE-BID LOCATION MAP)

## SPECIAL PROVISION - GENERAL

## AVAILABILITY OF FUNDS - TERMINATION OF CONTRACTS

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

In the event of termination, the Contractor shall be given a written notice of termination at least 60 days before completion of schedule work for which funds are available. In the event of termination, the Contractor shall be paid for the work already performed in accordance with the contract specifications.

## PREPARATION AND SUBMISSION OF BIDS

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

1. The proposal form furnished by the Department shall be used and shall not be taken apart or altered.
2. All entries including signatures shall be written in ink.
3. The amount bid shall be written in figures in the proper place in the proposal form.
4. Changes in any entry shall be made by marking through the entry in ink and making the correct entry adjacent thereto in ink. A representative of the Bidder shall initial the change in ink.
5. The bid shall be properly executed. In order to constitute proper execution, the bid shall show the Contractor's name, and shall be signed by an authorized representative. If a corporation, the corporate seal shall be affixed. The bid execution shall be notarized by a notary public whose commission is in effect on the date of execution.
6. The bid shall not contain any unauthorized additions, deletions, or conditional bids.
7. The Bidder shall not add any provision reserving the right to accept to reject an award, or to enter into a contract pursuant to an award.
8. The bid shall be accompanied by a bid bond on the form furnished by the Department or by a bid deposit. The bid bond shall be completely and properly executed in accordance with the requirements of "Bid Bond or Bid Deposit". The bid deposit shall be a certified check or cashiers check in accordance with "Bid Bond or Bid Deposit".

9. The bid shall be placed in a sealed envelope (complete proposal) and shall have been delivered to and received by the Department prior to the time specified in the invitation to bid.

## REJECTION OF BIDS

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

## AWARD OF CONTRACT

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

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

## BID BOND OR BID DEPOSIT

Each bid shall be accompanied by a corporate bid bond or a bid deposit of a certified or cashiers check in the amount of at least 5% of the total amount bid for contract. No bid will be considered or accepted unless accompanied by one of the foregoing securities. The bid bond shall be executed by a Corporate Surety licensed to do business in North Carolina and the certified check or cashiers check shall be drawn on a bank or trust company insured by the Federal Deposit Insurance Corporation and made payable to the Department of Transportation in an amount of at least 5% of the total amount bid for the contract. The condition of the bid bond or bid deposit is: the Principal shall not withdraw its bid within 60 days after the opening of the same, and if the contract is awarded to the Principal, the Principal shall within 14 days after the prescribed contract documents are mailed to him for signature, execute such contractual documents as may be required by the terms of the bid and give payment and performance bonds with good and sufficient surety as required for the faithful performance of the contract and for the protection of all persons supplying labor and materials in the prosecution of the work; in the event of the failure of the Principal to enter into such contract and execute such documents as may be required, then the amount of the bid bond shall be immediately paid to the Department as liquidated damages or, in the case of a bid deposit, the deposit shall be forfeited to the Department.

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

The execution by the Bidder shall be in the same manner as required under "Preparation and Submission of Bids" for the proper execution of the bid. The execution by the

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

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

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

#### PERFORMANCE BOND AND PAYMENT BOND REQUIREMENTS

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

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

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

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

## DELIVERY OF BIDS

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

“Bid for State Highway Project WBS Element 42558.3.1 for Bridge No. 120  
in Nash County.”

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

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

ATTENTION: DAN HOLDERMAN, PE

The outer envelope shall also bear the statement:

“Bid for State Highway Project WBS Element 42558.3.1 for Bridge No. 120  
in Nash County.”

If delivered in person, the sealed envelope shall be delivered to the office of North Carolina Department of Transportation, Bridge Management Unit, 4809 Beryl Road, Raleigh, NC (South of the NC State Fairgrounds, directly south from Dorton Arena). All bids shall be delivered prior to the time specified in the invitation to bid. Bids received after 2:00 p.m., Thursday, September 23, 2010 will not be accepted.

## **PROJECT SPECIAL PROVISIONS**

### **GENERAL REQUIREMENTS**

#### **A. SCOPE OF WORK**

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

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

#### **B. LOCATION AND DESCRIPTION**

The existing bridge consists of 1 span at 16'-6", 2 spans at 15'-0" and 1 span at 15'-6"; Reinforced concrete floor on timber joists with end bents and interior bents having timber caps and timber piles; a steel crutch bent at end bent 2; and a clear roadway width of 24' located on SR 1425, 0.3 miles East of SR 1426. This bridge shall be replaced by a cored slab bridge with 2 spans at 45'-0" and 1 span at 35'-0" on a 115 degree skew angle and 32'-10" clear roadway width.  
(SEE BRIDGE LOCATION MAP)

#### **C. CONTRACT TIME AND LIQUIDATED DAMAGES**

The date of availability for this contract is the date the Contractor begins work but not before the issuance of the purchase order and no later than November 15, 2010.

The completion date for this contract is 120 consecutive calendar days after and including the date of availability.

The liquidated damages for this contract time are Three Hundred Fifty Dollars (\$350.00) 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/she shall notify the Engineer in writing at least thirty (30) days prior to the revised date

D. CONSTRUCTION METHODS

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

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

E. SITE INVESTIGATION AND REPRESENTATION

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

F. CONTROL OF EROSION, SILT AND POLLUTION

Control of erosion, siltation and pollution shall meet the requirements of section 107-13 of the Standard Specifications for Roads and Structures dated July 2006, and as shown on the plans.

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

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

G. MATERIALS AND TESTING

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

#### H. TRAFFIC CONTROL

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

#### I. INDEMNIFICATION

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

#### J. PROOF OF COVERAGE

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

#### K. COMPENSATION

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



L. ADDITIONAL COMPENSATION and/or EXTENSION OF  
COMPLETION DATE

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

M. BASIS OF PAYMENT

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

N. WORK PROCEDURES AND ASSIGNMENTS

1. ENGINEER

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

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

2. AUTHORITY OF THE ENGINEER

The Engineer will decide all questions which may arise as to the quality and acceptability of work performed and as to the rate of progress of the work; all questions which may arise as to the interpretation of the contract; and all questions as to the acceptable fulfillment of the contract on the part of the Contractor. His decision shall be final and he shall have executive authority to enforce and make effective such decisions and orders as the Contractor fails to carry out promptly.

3. CONTRACTOR SUPERVISION

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

4. AVAILABILITY

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

O. COMPETITIVE PROPOSALS

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

P. ACCEPTANCE AND REJECTION

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

Q. REMOVAL OF EXISTING STRUCTURE

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

R. UTILITY CONFLICTS

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

S. ASPHALT CONCRETE TYPE S9.5B, I19.0B AND B25.0B

The quantity of Asphalt Concrete Types S9.5B, I19.0B and B25.0B measured as provided in Sections 610 of the Standard Specification, including furnishing all materials and placement, shall be paid for at the contract unit price per ton for "Asphalt Concrete Surface Course Type S 9.5B", "Asphalt Concrete Intermediate Course Type I 19.0B" and "Asphalt Concrete Base Course, Type B25.0B". Asphalt Binder for Plant Mix shall be measured as provided in Section 620 of the Standard Specifications. Payment for Asphalt Binder for Plant Mix shall be paid for at the contract unit price per ton for "Asphalt Binder for Plant Mix, Type PG 64-22."

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

T. CLASS II RIP RAP & CLASS B RIP RAP

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

## U. STEEL BM GUARDRAIL

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

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

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

**EXCAVATION AND EMBANKMENT****Description:**

Furnish all labor, equipment, materials, and incidentals necessary to complete applicable items of work defined in Division 2, Division 5, Section 410, Section 412, Section 414, and Section 416 of the July 2006 Standard Specifications for Roads and Structures.

**Materials:**

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

**Construction Methods:**

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

**Basis of Payment:**

All work covered by this section will be paid for at the contract lump sum price for "Excavation and Embankment".

**CLEARING AND GRUBBING**

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

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

**EMBANKMENTS:**

(5-16-06) (Rev 7-21-09)

SP2R18

Revise the *Standard Specifications* as follows:

**Page 2-22, Article 235-3 Materials**, add the following as the second sentence of the second paragraph:

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

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

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

**SHOULDER AND FILL SLOPE MATERIAL:**

(5-21-02)

SP2 R45 A

**Description**

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

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

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

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

**Measurement and Payment**

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

**FINE GRADING SUBGRADE, SHOULDERS AND DITCHES:**

(7-21-09)

SP5R01

Revise the *Standard Specifications* as follows:

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

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

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

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

SP8 R02

Revise the *2006 Standard Specifications* as follows:

**Division 2 Earthwork**

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

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

Prior to the approval of any borrow sources developed for use on any project, obtain certification from the State Historic Preservation Officer of the State Department of Cultural Resources certifying that the removal of the borrow material from the borrow sources(s) will have no effect on any known district, site building, structure, or object, architectural and/or archaeological that is included or eligible for inclusion in the National Register of Historic Places.

**Division 8 Incidentals**

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

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

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

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

**AGGREGATES FOR ASPHALT PAVEMENTS AND SURFACE TREATMENTS****(Ultra-Thin):**

(7-18-06)

SP10 R15

Revise the 2006 *Standard Specifications* as follows:

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

or ultra-thin bonded wearing course.

Page 10-41, Table 1012-1, add the following as the last row of the Table:

UBWC	100/85	40	45	10
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Page 10-42, Subarticle 1012-1(B)(6), add as the last sentence:

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

**AGGREGATE PRODUCTION:**

(11-20-01)

SP10 R05

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

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

**ASPHALT BINDER CONTENT OF ASPHALT PLANT MIXES:**

(11-21-00)

SP6 R15

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

Asphalt Concrete Base Course	Type B 25.0B	4.3%
Asphalt Concrete Intermediate Course	Type I 19.0B	4.7%
Asphalt Concrete Surface Course	Type S 9.5 B	6.0%

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

**PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:**

(11-21-00)

SP6 R25

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

The base price index for asphalt binder for plant mix is \$460.00 per ton.

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

**ASPHALT PAVEMENTS - SUPERPAVE:**

(7-18-06)(Rev 4-20-10)

SP6 R01

Revise the 2006 *Standard Specifications* as follows:

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

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

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

**Page 6-12, Subarticle 609-5(C)2, QUALITY CONTROL MINIMUM SAMPLING AND TESTING SCHEDULE**

**First paragraph, delete and replace with the following.**

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

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

When daily production of each mix design exceeds 100 tons and a regularly scheduled full test series random sample location for that mix design does not occur during that day's production, perform at least one partial test series consisting of Items A and B in the schedule below.

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

*or ASTM D 2041*

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

(i) Option 1

**Insert the following immediately after the first paragraph:****(ii) Option 2**

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

**Second paragraph, delete and replace with the following:**

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

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

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

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

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

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

- (a) A change in the binder percentage, aggregate blend, or  $G_{mm}$  is made on the JMF, or,
- (b) When the Contractor elects to stop or is required to stop production after one or two moving average values, respectively, fall outside the moving average limits as outlined in subarticle 609-5(C)6 or,
- (c) If failure to stop production after two consecutive moving averages exceed the moving average limits occurs, but production does stop at a subsequent time, re-establish a new moving average beginning at the actual production stop point.



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

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

#### **CONTROL LIMITS**

Mix Control Criteria	Target Source	Moving Average Limit	Individual Limit
2.36 mm Sieve	JMF	±4.0 %	±8.0 %
0.075mm Sieve	JMF	±1.5 %	±2.5 %
Binder Content	JMF	±0.3 %	±0.7 %
VTM @ N <sub>des</sub>	JMF	±1.0 %	±2.0 %
VMA @ N <sub>des</sub>	Min. Spec. Limit	Min Spec. Limit	-1.0%
P <sub>0.075</sub> / P <sub>bc</sub> Ratio	1.0	±0.4	±0.8
%G <sub>mm</sub> @ N <sub>ini</sub>	Max. Spec. Limit	N/A	+2.0%
TSR	Min. Spec. Limit	N/A	- 15%

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

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

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

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

**Page 6-17, third full paragraph, delete and replace with the following:**

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

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

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

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

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

**Page 6-18, delete the third and fourth full paragraphs, including the Table for Payment for Mix Produced in the Warning Bands and substitute the following:**

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

**Page 6-19, First paragraph, delete and replace with the following:**

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

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

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

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

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

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

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

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

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

**Page 6-25, Article 609-6 Quality Assurance, Density Quality Assurance, insert the following items after item (E):**

- (F) By retesting Quality Control core samples from control strips (either core or nuclear) at a frequency of 100% of the frequency required of the Contractor;
- (G) By observing the Contractor perform all standard counts of the Quality Control nuclear gauge prior to usage each nuclear density testing day; or
- (H) By any combination of the above

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

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

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

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

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

When the percentage of RAP is greater than 30% of the total mixture, use an approved stockpile of RAP in accordance with Section 1012-1(C). Use approved test methods to determine if any binder grade adjustments are necessary to achieve the performance grade for the specified mix type. The Engineer will establish and approve the virgin asphalt binder grade to be used.

**Page 6-34, Subarticle 610-3(C),**

Delete Table 610-2 and associated notes. Substitute the following:

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

Mix Type	Design ESALs Millions (a)	Binder PG Grade (b)	Compaction Levels No. Gyration @		Max. Rut Depth (mm)	Volumetric Properties (c)			
			N <sub>ini</sub>	N <sub>des</sub>		VMA % Min.	VTM %	VFA Min. - Max.	%G <sub>mm</sub> @ N <sub>ini</sub>
S-4.75A(e)	< 0.3	64 -22	6	50	-----	20.0	7.0 - 15.0	-----	-----
SF-9.5A	< 0.3	64 -22	6	50	11.5	16.0	3.0 - 5.0	70 - 80	≤ 91.5
S-9.5B	0.3 - 3	64 -22	7	65	9.5	15.5	3.0 - 5.0	65 - 80	≤ 90.5
S-9.5C	3 - 30	70 -22	7	75	6.5	15.5	3.0 - 5.0	65 - 78	≤ 90.5
S-9.5D	> 30	76 -22	8	100	4.5	15.5	3.0 - 5.0	65 - 78	≤ 90.0
S-12.5C	3 - 30	70 -22	7	75	6.5	14.5	3.0 - 5.0	65 - 78	≤ 90.5
S-12.5D	> 30	76 -22	8	100	4.5	14.5	3.0 - 5.0	65 - 78	≤ 90.0
I-19.0B	< 3	64 -22	7	65	-----	13.5	3.0 - 5.0	65 - 78	≤ 90.5
I-19.0C	3 - 30	64 -22	7	75	-----	13.5	3.0 - 5.0	65 - 78	≤ 90.0
I-19.0D	> 30	70 -22	8	100	-----	13.5	3.0 - 5.0	65 - 78	≤ 90.0
B-25.0B	< 3	64 -22	7	65	-----	12.5	3.0 - 5.0	65 - 78	≤ 90.5
B-25.0C	> 3	64 -22	7	75	-----	12.5	3.0 - 5.0	65 - 78	≤ 90.0
	Design Parameter					Design Criteria			
All Mix Types	1. Dust to Binder Ratio (P <sub>0.075</sub> /P <sub>be</sub> )					0.6 – 1.4			
	2. Retained Tensile Strength (TSR) (AASHTO T283 Modified)					85% Min. (d)			

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

**TABLE 610-2A**

**SUPERPAVE MIX DESIGN CRITERIA**

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

Note: (1) Category 1 RAP has been processed to a maximum size of 2 inches.

(2) Category 2 RAP has been processed to a maximum size of 1 inch by either crushing and or screening to reduce variability in the gradations.

(3) Category 3 RAP has been processed to a maximum size of 1 inch, fractionating the RAP into 2 or more sized stockpiles

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

**TABLE 610-3**

**ASPHALT PLACEMENT- MINIMUM TEMPERATURE REQUIREMENTS**

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

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

**Page 6-44, Article 610-8 Spreading and Finishing, third full paragraph, replace the first sentence with the following:**

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

**Page 6-50, Article 610-13 Density Acceptance, delete the second paragraph and replace with the following:**

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

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

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

where: PF = Pay Factor (computed to 0.1%)  
D = the deficiency of the lot average density, not to exceed 2.0%

**Page 6-53, Article 620-4 Measurement and Payment:**

**Sixth paragraph, delete the last sentence.**

**Seventh paragraph, delete the paragraph and replace with the following:**

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

**Page 6-54, Article 620-4 Measurement and Payment, add the following pay item:**

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

**Page 6-69, Table 660-1 Material Application Rates and Temperatures, add the following:**

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

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

(5) Sand Seal

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

or ultra-thin bonded wearing course.

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

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

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

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

**Page 10-42, Subarticle 1012-1(B)(6)**, add as the last sentence:

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

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

(1) Mix Design RAS

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

(2) Mix Production RAS

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

After a stockpile of processed RAS has been sampled and mix designs made from these samples, do not add new source RAS to the original stockpile without prior field testing

to insure gradation and binder uniformity. Sample and test new source RAS before blending with the existing stockpile.

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

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

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

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

**NEW SOURCE RAS GRADATION and BINDER TOLERANCES**  
**(Apply Tolerances to Mix Design Data)**

0-6% RAS	
P <sub>b</sub> %	±1.6%
Sieve Size (mm)	Tolerance
9.5	±1
4.75	±5
2.36	±4
1.18	±4
0.300	±4
0.150	±4
0.075	±2.0

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

**(G) Reclaimed Asphalt Pavement (RAP)**

**(1) Mix Design RAP**

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

**(a) Millings**

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

**(b) Processed RAP**

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

**(c) Fractionated RAP**

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

**(d) Approved Stockpiled RAP**

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

Perform extraction tests at a rate of 1 per 1000 tons of RAP, with a minimum of 5 tests per stockpile to determine the asphalt content and gradation. Separate stockpiles of RAP material by fine and coarse fractions. Erect and maintain a sign satisfactory to the Engineer on each stockpile to identify the material. Assure that no deleterious material is allowed in any stockpile. The Engineer may reject by visual inspection any stockpiles that are not kept clean, separated, and free of foreign materials.

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

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

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

#### **APPROVED STOCKPILED RAP GRADATION and BINDER TOLERANCES**

**(Apply Tolerances to Mix Design Data)**

P <sub>b</sub> %	±0.3%
Sieve Size (mm)	Percent Passing
25.0	±5%
19.0	±5%
12.5	±5%
9.5	±5%
4.75	±5%
2.36	±4%
1.18	±4%
0.300	±4%
0.150	±4%
0.075	±1.5%

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

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

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

**(2) Mix Production RAP**

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

**(a) Mix Design RAP**

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

**(b) New Source RAP**

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

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

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

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

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

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

<b>TABLE 1012-2</b>									
<b>NEW SOURCE RAP GRADATION and BINDER TOLERANCES</b>									
(Apply Tolerances to Mix Design Data)									
Mix Type	0-20% RAP			20 <sup>+</sup> -30 % RAP			30 <sup>+</sup> % RAP		
Sieve (mm)	Base	Inter.	Surf.	Base	Inter.	Surf.	Base	Inter.	Surf.
P <sub>b</sub> %	± 0.7%			± 0.4%			± 0.3%		
25.0	±10	-	-	±7	-	-	±5	-	-
19.0	±10	±10	-	±7	±7	-	±5	±5	-
12.5	-	±10	±10	-	±7	±7	-	±5	±5
9.5	-	-	±10	-	-	±7	-	-	±5
4.75	±10	-	±10	±7	-	±7	±5	-	±5
2.36	±8	±8	±8	±5	±5	±5	±4	±4	±4
1.18	±8	±8	±8	±5	±5	±5	±4	±4	±4
0.300	±8	±8	±8	±5	±5	±5	±4	±4	±4
0.150	-	-	±8	-	-	±5	-	-	±4
0.075	±4	±4	±4	±2	±2	±2	±1.5	±1.5	±1.5

### **ENGINEERING FABRICS TABLE 1056-1:**

(7-18-06)

Revise the *Standard Specifications* as follows:

Page 10-100, Table 1056-1, replace the values for Trapezoidal Tear Strength with the following:

Physical Property	ASTM Test Method	Type 1	Type 2	Type 3		Type 4
				Class A	Class B	
Typical Applications		Shoulder Drain	Under Riprap	Temporary Silt Fence		Soil Stabilization
Trapezoidal Tear Strength	D4533	45 lb	75 lb	--	--	75 lb

**BRIDGE APPROACH FILL – SUB REGIONAL TIER:**

(9-16-08)

SP4R02

**Description**

This work consists of all work necessary to construct bridge approach fills in accordance with these provisions and the plans, and as directed by the Engineer.

**Materials****(A) Fabric**

Refer to Section 1056 for Type 1 Engineering Fabric and the following:

Use a non-woven fabric consisting of strong rot-proof synthetic fibers such as polypropylene, polyethylene, or polyester formed into a stable network such that the filaments or yarns retain their relative positions to each other.

Lamination of fabric sheets to produce the physical requirements of a fabric layer will not be accepted. Furnish letters of certification from the manufacturer with each shipment of the fabric attesting that the material meets the requirements of this provision; however, the material is subject to inspection, test, or rejection by the Engineer at any time.

During all periods of shipment and storage, wrap the fabric in a heavy-duty protective covering to protect the material from ultraviolet rays. After the protective wrapping has been removed, do not leave the material uncovered under any circumstances for longer than 4 days.

**(B) Stone Backfill**

Provide # 78M aggregate material meeting the requirements of Section 1005 of the *Standard Specifications*.

**(C) 4 inch Diameter Corrugated Drainage Pipe and Fittings**

Provide pipe and fittings that meet all the applicable requirements of Section 815 or 816 of the *Standard Specifications*.



**Construction Methods**

Place the fabric as shown on the plans or as directed by the Engineer. Perform the excavation for the fabric fill to the limits shown on the plans. Provide an excavated surface free of obstructions, debris, pockets, stumps, and cleared of all vegetation. The fabric will be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacture, transportation, handling or storage. Lay the fabric smooth, and free from tension, stress, folds, wrinkles or creases.

Deposit and spread stone material in successive, uniform, approximately horizontal layers of not more than 10 inches in depth, loose measurement, for the full width of the cross section, and keep each layer approximately level. Place and compact each layer of select material fill no more than 10 inches thick with low ground pressure equipment. Use hand operated equipment to compact the fill material within three feet of the backwall and wingwalls as directed by the Engineer. Compact stone material to the satisfaction of the Engineer. No equipment will be allowed to operate on the drainage pipe or any fabric layer until it is covered with at least six inches of fill material. Compaction shall not damage the drainage pipe or fabric under the fill. Cover the fabric with a layer of fill material within four days after placement of the fabric. Fabric that is damaged as a result of installation will be replaced as directed by the Department at no additional cost.

Place the fabric on the ground, and attach and secure it tightly to the vertical face of the backwall and wingwalls with adhesives, duct-tape, nails or any other method approved by the Engineer.

Place four inch diameter perforated drainage pipe along the base of the backwall and sloped to drain as shown on the plans. Install a pipe sleeve through the bottom of or under the wing wall prior to placing concrete for the wing wall. The pipe sleeve shall be of adequate strength to withstand the wingwall load. Place the pipe sleeve in position to allow the drainage pipe to go through the wing wall with a proper slope. Connect four-inch diameter nonperforated (plain) drainage pipe with a coupling to the perforated pipe near the inside face of the wingwall. Place the nonperforated drainage pipe through the pipe sleeve, extend down to the toe of the slope and connect, to a ditch or other drainage systems as directed by the Engineer. For bridge approaches in cut sections where no side slope is available, direct the drainage pipe outlet to the end slope down to the toe using elbows as directed by the Engineer.

**Measurement and Payment**

*Bridge Approach Fill – Sub Regional Tier* will be paid for at the contract lump sum price for Bridge Approach Slab. Such price and payment will be full compensation for both approach fills at each bridge installation, including but not limited to furnishing, placing and compacting stone material, furnishing and placing fabric, furnishing and placing pipe sleeve and drainage pipe, furnishing and installing concrete pads at the end of outlet pipes, excavation and all material, labor, tools and equipment necessary to complete the work.

Payment will be made under:

**Pay Item**

Bridge Approach, Station 15+78.95 –LREV-

**Pay Unit**

Lump Sum

**EROSION & SEDIMENT CONTROL/STORMWATER CERTIFICATION:**

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

SP1 G180

**General**

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

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

- (A) *Certified Supervisor* – Provide a certified Erosion & Sediment Control Stormwater Supervisor to manage the Contractor and subcontractor(s) operations, insure compliance with Federal, State and Local ordinances and regulations, and to manage the Quality Control Program.
- (B) *Certified Foreman* – Provide a certified, trained foreman for each construction operation that increases the potential for soil erosion or the possible sedimentation and turbidity of surface waters.
- (C) *Certified Installer* – Provide a certified installer to install or direct the installation for erosion or sediment/stormwater control practices.
- (D) *Certified Designer* – Provide a certified designer for the design of the erosion and sediment control stormwater component of reclamation plans and, if applicable, for the design of the project erosion and sediment control stormwater plan.

**Roles and Responsibilities**

- (A) *Certified Erosion & Sediment Control Stormwater Supervisor* - The Certified Supervisor shall be responsible for ensuring erosion and sediment/stormwater control is adequately implemented and maintained on the project and conducting the quality control program. The Certified Supervisor shall be on the project within 24 hours from initial exposure of an erodible surface to the project's final acceptance when questions or concerns arise with Erosion and Sedimentation Control/Stormwater issues. Perform the following duties:
  - (1) Manage Operations - Coordinate and schedule the work of subcontractors so that erosion and sediment/stormwater control measures are fully executed for each operation and in a timely manner over the duration of the contract.
    - (a) Oversee the work of subcontractors so that appropriate erosion and sediment/stormwater control preventive measures are conformed to at each stage of the work.
    - (b) Prepare the required weekly erosion control punchlist and submit to the Engineer.

- (c) Attend all weekly or monthly construction meetings to discuss the findings of the NPDES inspection and other related issues.
  - (d) Implement the erosion and sediment/stormwater control site plans requested.
  - (e) Provide for erosion and sediment/stormwater control methods for the Contractor's temporary work not shown on the plans, such as, but not limited to work platforms, temporary construction, pumping operations, plant and storage yards, and cofferdams.
  - (f) Acquire applicable permits and comply with requirements for borrow pits, dewatering, and any temporary work conducted by the Contractor in jurisdictional areas.
  - (g) Conduct all erosion and sediment/stormwater control work in a timely and workmanlike manner.
  - (h) Fully install erosion and sediment/stormwater control work prior to suspension of the work.
  - (i) Coordinate with Department, Federal, State and Local Regulatory agencies on resolution of erosion and sediment/stormwater control issues due to the Contractor's operations.
  - (j) Ensure that proper cleanup occurs from vehicle tracking on paved surfaces and/or any location where sediment leaves the Right-of-Way.
  - (k) Have available a set of erosion control plans that has been properly updated to reflect necessary plan and field changes for use and review by Department personnel as well as regulatory agencies.
- (2) Requirements set forth under the NPDES Permit - The Department's NPDES permit outlines certain objectives and management measures pertaining to construction activities. The permit references *NCG010000, General Permit to Discharge Stormwater* under the NPDES, and states that the Department shall incorporate the applicable requirements into its delegated E&SC Program. Some of the requirements are, but are not limited to:
- (a) Control project site waste to prevent contamination of surface or ground waters of the state (i.e. construction materials, concrete washout, chemicals, litter, fuels, lubricants, coolants, hydraulic fluids, any other petroleum products, and sanitary waste).
  - (b) Inspect E&SC/Stormwater devices at least once every 7 calendar days, twice weekly for 303(d) impaired streams, and within 24 hours after a significant rainfall event of 0.5 inches within 24 hours.
  - (c) Maintain an onsite rain gauge and a record of rainfall amounts and dates.
  - (d) Maintain E&SC/Stormwater inspection records for review by Department and Regulatory personnel upon request.
  - (e) Implement approved reclamation plans on all borrow pits and waste sites.
  - (f) Maintain a log of turbidity test results as outlined in the Department's Procedure for Monitoring Borrow Pit Discharge.
  - (g) Provide secondary containment for bulk storage of liquid materials.
  - (h) Provide training for employees concerning general E&SC/Stormwater awareness, the NPDES Permit requirements, and the requirements of the *General Permit, NCG010000*.

- (i) Report violations of the NPDES permit to the Engineer who will notify the DWQ Regional Office within 24 hours.
- (3) Quality Control Program - Maintain a quality control program to control erosion, prevent sedimentation and follow provisions of permits. The quality control program shall:
- (a) Follow permit requirements related to the Contractor and subcontractors' construction activities.
  - (b) Ensure that all operators and/or subcontractor(s) on site have the proper erosion and sediment/stormwater control certification.
  - (c) Notify the Engineer when the required certified erosion and sediment/stormwater control personnel are not available on the job site when needed.
  - (d) Conduct the inspections required by the NPDES permit.
  - (e) Take corrective actions in the proper timeframe as required by the NPDES permit for problem areas identified during the NPDES inspections.
  - (f) Incorporate erosion control into the work in a timely manner and stabilize disturbed areas with mulch/seed or vegetative cover on a section-by-section basis.
  - (g) Maintain temporary erosion and sediment control devices.
  - (h) Remove temporary erosion or sediment control devices when they are no longer necessary as agreed upon by the Engineer.
  - (i) The Contractor's quality control and inspection procedures shall be subject to review by the Engineer. Maintain NPDES inspection records and make records available at all times for verification by the Engineer.
- (B) *Certified Foreman* - At least one Certified Foreman shall be onsite for each type of work listed herein during the respective construction activities to control erosion, prevent sedimentation and follow permit provisions:
- (1) Foreman in charge of grading activities
  - (2) Foreman in charge of bridge or culvert construction over jurisdictional areas
  - (3) Foreman in charge of utility activities

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

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

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

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

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

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

### **Preconstruction Meeting**

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

### **Ethical Responsibility**

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

### **Revocation or Suspension of Certification**

Upon recommendation of the Chief Engineer - Operations to the certification entity, certification for *Supervisor*, *Certified Foremen*, *Certified Installers* and *Certified Designer* may be revoked or suspended with the issuance of a *Continuing Immediate Corrective Action (Continuing ICA)*, *Notice of Violation*, or *Cease and Desist Order* for erosion and sediment control/stormwater related issues.

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

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

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

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

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

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

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

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

### **Measurement and Payment**

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

**GUARDRAIL ANCHOR UNITS, TYPE 350:**

(4-20-04)

SP8 R65

**Description**

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

**Materials**

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

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

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

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

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

Prior to installation the Contractor shall submit to the Engineer:

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

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

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

**Construction Methods**

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

**Measurement and Payment**

Measurement and Payment will be included in the unit bid price for "Guardrail Anchor Units, Type 350." This price shall be full compensation for all materials, tools, equipment, labor, and for all incidentals necessary to complete the work. The cost of guardrail delineators shall be included in the unit bid price for "Steel BM Guardrail."

**GALVANIZED HIGH STRENGTH BOLTS, NUTS AND WASHERS:**

(2-17-09)

SP10 R02

Revise the *Standard Specifications* as follows:

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

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

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

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

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

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

**PORTLAND CEMENT CONCRETE (Alkali-Silica Reaction):**

2-20-07

SP10 R16

Revise the *2006 Standard Specifications* as follows:

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

Certain combinations of cement and aggregate exhibit an adverse alkali-silica reaction. The alkalinity of any cement, expressed as sodium-oxide equivalent, shall not exceed 1.0 percent. For mix designs that contain non-reactive aggregates and cement with an alkali content less than 0.6%, straight cement or a combination of cement and fly ash, cement and ground granulated blast furnace slag or cement and microsilica may be used. The pozzolan quantity shall not exceed the amount shown in Table 1024-1. For mixes that contain cement with an alkali content between 0.6% and 1.0%, and for mixes that contain a reactive aggregate documented by the Department, regardless of the alkali content of the cement, use a pozzolan in the amount shown in Table 1024-1.



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

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

## **CONSTRUCTION OF SUBSTRUCTURE**

### **Description:**

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

### **Materials:**

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

### **Construction Methods:**

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

### **Basis of Payment:**

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

"HP12 x 53 Galvanized Steel Piles", "3'-6" Dia Drilled Piers in Soil", "3'-6" Dia Drilled Piers in Not Soil", "Permanent Steel Casing for 3-6" Dia Drilled Piers", "SID Inspection" and "Crosshole Sonic Logging" will be paid for in accordance with other provisions in this Contract.

**CONSTRUCTION OF SUPERSTRUCTURE**

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

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

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

Payment will be made under:

Construction of Superstructure.....Lump Sum

**STEEL PILES:****GALVANIZING STEEL PILES****Description**

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

**Basis of Payment**

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

**SUBMITTAL OF WORKING DRAWINGS****(1-27-2010)****1.0 General**

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

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

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

## **2.0 Addresses and Contacts**

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

**Via US mail:**

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

**Via other delivery service:**

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

Submittals may also be made via email.

Send submittals to:

[dholderman@ncdot.gov](mailto:dholderman@ncdot.gov) (Dan Holderman)

The status of the review of structure-related submittals sent to the Bridge Management Unit can be viewed from the Unit's web site, via the "Contractor Submittal" link.

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

Primary Structures Contact:	Dan Holderman
	(919) 835 – 8217
	(919) 733 – 2348 facsimile
	<a href="mailto:dholderman@ncdot.gov">dholderman@ncdot.gov</a>

## **3.0 Submittal Copies**

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

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

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

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

### **STRUCTURE SUBMITTALS**

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

WBS ELEMENT: 42558.3.1	Nash County, Br. #120	Page 45
Metal Stay-in-Place Forms	8	Article 420-3
Metalwork for Elastomeric Bearings <sup>4,5</sup>	7	Article 1072-10
Miscellaneous Metalwork <sup>4,5</sup>	7	Article 1072-10
Optional Disc Bearings <sup>4</sup>	8	“Optional Disc Bearings”
Overhead Signs	13	Article 903-3(C) & Applicable Provisions
Pile Splicers	7	Subarticle 450-7(C) & “Piles”
Pile Points	7	Subarticle 450-7(D) & “Piles”
Placement of Equipment on Structures (cranes, etc.)	7	Article 420-20
Pot Bearings <sup>4</sup>	8	“Pot Bearings”
Precast Concrete Box Culverts	2, then 1 reproducible	“Optional Precast Reinforced Concrete Box Culvert at Station ____”
Precast Retaining Wall Panels	10	Article 1077-2
Prestressed Concrete Cored Slab (detensioning sequences) <sup>3</sup>	6	Article 1078-11
Prestressed Concrete Deck Panels	6 and 1 reproducible	Article 420-3
Prestressed Concrete Girder (strand elongation and detensioning sequences)	6	Articles 1078-8 and 1078-11
Removal of Existing Structure over Railroad	5	Railroad Provisions
Revised Bridge Deck Plans (adaptation to prestressed deck panels)	2, then 1 reproducible	Article 420-3
Revised Bridge Deck Plans (adaptation to modular expansion joint seals)	2, then 1 reproducible	“Modular Expansion Joint Seals”
Sound Barrier Wall Casting Plans	10	Article 1077-2 & “Sound Barrier Wall”
Sound Barrier Wall Steel Fabrication Plans <sup>5</sup>	7	Article 1072-10 & “Sound Barrier Wall”
Structural Steel <sup>4</sup>	2, then 7	Article 1072-10

Temporary Detour Structures 10

Article 400-3 &  
“Construction,  
Maintenance and Removal  
of Temporary Structure at  
Station \_\_\_\_\_”TFE Expansion Bearings <sup>4</sup> 8

Article 1072-10

**FOOTNOTES**

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

**GEOTECHNICAL SUBMITTALS**

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

**FOOTNOTES**

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

**FALSEWORK AND FORMWORK:****(8-4-09)****1.0 Description**

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

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

**2.0 Materials**

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

### 3.0 Design Requirements

#### A. Working Drawings

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

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

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

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

#### 1. Wind Loads

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

**Table 2.2 - Wind Pressure Values**

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

#### 2. Time of Removal

The following requirements replace those of Article 3.4.8.2.



Do not remove forms until the concrete has attained strengths required in Article 420-16 of the Standard Specifications and these Special Provisions.

Do not remove forms until the concrete has sufficient strength to prevent damage to the surface.

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

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

Duplin	90 (144.8)	New Hanover	100 (160.9)	Yadkin	70 (112.7)
Durham	70 (112.7)	Northampton	80 (128.7)	Yancey	70 (112.7)
Edgecombe	80 (128.7)	Onslow	100 (160.9)		
Forsyth	70 (112.7)	Orange	70 (112.7)		

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

#### B. Review and Approval

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

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

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

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

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

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

#### 4.0 Construction Requirements

All requirements of Section 420 of the Standard Specifications apply.

Construct temporary works in conformance with the approved working drawings. Ensure that the quality of materials and workmanship employed is consistent with that assumed in

the design of the temporary works. Do not weld falsework members to any portion of the permanent structure unless approved. Show any welding to the permanent structure on the approved construction drawings.

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

#### A. Maintenance and Inspection

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

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

#### B. Foundations

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

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

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

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

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

### 5.0 Removal

Unless otherwise permitted, remove and keep all temporary works upon completion of the work. Do not disturb or otherwise damage the finished work.

Remove temporary works in conformance with the contract documents. Remove them in such a manner as to permit the structure to uniformly and gradually take the stresses due to its own weight.

## **6.0 Method of Measurement**

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

## **7.0 Basis of Payment**

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

### **PRESTRESSED CONCRETE MEMBERS:**

**(4-02-07)**

The 2006 Standard Specifications shall be revised as follows:

In Section 1078-1 "General" of the Standard Specifications, add the following after the second paragraph:

#### **(A) Producer Qualification**

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

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

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

Categories for other elements will be as required by the project special provision or plans.

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

### **1.0 General**

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

### **2.0 Installation**

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

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

### **3.0 Field Testing**

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

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

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

Level Two Field testing: Test a minimum of 2 anchors but not less than 10% of the all anchors to 80% of the yield load shown on the plans. If less than 60 anchors are to be installed, install and test the required number of anchors prior to installing the remaining anchors. If more than 60 anchors are to be installed, test the first 6 anchors prior to installing the remaining anchors, then test 10% of the number in excess of 60 anchors.

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

**4.0 Removal and Replacement of Failed Test specimens:**

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

**5.0 Usage**

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

**6.0 Basis of Payment**

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

**GROUT FOR STRUCTURES****7-12-07****Description**

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

**Materials**

Refer to Division 10 of the *Standard Specifications*:

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

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

### Requirements

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

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

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

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

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

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

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

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

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

### **Sampling and Placement**

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

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

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

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

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

### **Miscellaneous**

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

### **HIGH STRENGTH BOLTS**

(11-17-06)

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

“Make sure that plain bolts and washers have a thin coat of lubricant at the time of installation.”

“Use nuts that are pre-waxed by the producer/supplier prior to shipping to the project.”



**CRANE SAFETY****(8-15-05)**

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

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

**Crane Safety Submittal List**

- A. **Competent Person:** Provide the name and qualifications of the "Competent Person" responsible for crane safety and lifting operations. The named competent person will have the responsibility and authority to stop any work activity due to safety concerns.
- B. **Riggers:** Provide the qualifications and experience of the persons responsible for rigging operations. Qualifications and experience should include, but not be limited to, weight calculations, center of gravity determinations, selection and inspection of sling and rigging equipment, and safe rigging practices.
- C. **Crane Inspections:** Inspection records for all cranes shall be current and readily accessible for review upon request.

**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.

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**SEEDING AND MULCHING****Seed Mixes for Bridge Maintenance P.O. Contracts ONLY****Seed Mix East****Divisions:**      **Counties:**

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

**Seed Mix West****Divisions:**      **Counties:**

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

**Seed Mix WestEd**

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

**SEEDING AND MULCHING:**

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

**All Roadway Areas****March 1 - August 31**

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

**September 1 - February 28**

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

**Waste and Borrow Locations****March 1 – August 31**

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

**September 1 - February 28**

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

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

**Approved Tall Fescue Cultivars**

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

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

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

#### **TEMPORARY SEEDING:**

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

#### **FERTILIZER TOPDRESSING:**

Fertilizer used for topdressing on all roadway areas except slopes 2:1 and steeper shall be 10-20-20 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 10-20-20 analysis and as directed.

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

#### **SUPPLEMENTAL SEEDING:**

The kinds of seed and proportions shall be the same as specified for *Seeding and Mulching*, with the exception that no centipede seed will be used in the seed mix for supplemental seeding. The rate of application for supplemental seeding may vary from 25# to 75# per acre. The actual rate per acre will be determined prior to the time of topdressing and the Contractor will be notified in writing of the rate per acre, total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for incorporating seed into the soil as to prevent disturbance of existing vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

#### **Seed Mix West**

#### **SEEDING AND MULCHING:**

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

**August 1 - June 1**

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

**May 1 - September 1**

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

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

**August 1 - June 1**

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

**May 1 - September 1**

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

## Approved Tall Fescue Cultivars

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

## Approved Kentucky Bluegrass Cultivars:

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

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

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

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

#### **TEMPORARY SEEDING:**

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

#### **FERTILIZER TOPDRESSING:**

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

#### **SUPPLEMENTAL SEEDING:**

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

Seed Mix WestEd

#### **SEEDING AND MULCHING:**

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

**August 1 - June 1**

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

**May 1 - September 1**

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

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

**August 1 - June 1**

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

**May 1 - September 1**

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

## Approved Tall Fescue Cultivars

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

## Approved Kentucky Bluegrass Cultivars:

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

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

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

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

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

#### **TEMPORARY SEEDING:**

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

#### **FERTILIZER TOPDRESSING:**

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

#### **SUPPLEMENTAL SEEDING:**

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



**BASIS OF PAYMENT:**

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

**DRILLED PIERS****(11-17-06)****1.0 GENERAL****A. Description**

This special provision governs the construction of Drilled Piers, also known as "Drilled Shafts" and "Caissons". Drilled piers are a reinforced concrete section, cast-in-place against in situ material or permanent steel casing. Drilled piers are a straight shaft type and vertical. Construct drilled piers in accordance with the details and dimensions shown on the plans and this special provision.

**B. Prequalification and Experience Requirements**

Use a Drilled Pier Contractor prequalified by the Contractual Services Unit of the Department of Transportation for drilled pier work (work code 3090).

Submit documentation that the Drilled Pier Contractor has successfully completed at least 5 drilled pier projects within the last 3 years with diameters, lengths and subsurface conditions similar to those anticipated for this project. Documentation should include the General Contractor and Owner's name and current contact information with descriptions of each past project. Also, submit documentation of experience with dry and wet placement of concrete and the use of temporary casing or slurry.

Provide a list of the Drilling Superintendent, Drill Rig Operators and Project Manager that will be assigned to this project. Submit documentation for these personnel verifying employment with the Drilled Pier Contractor and a minimum of 5 years experience in drilled pier construction with past projects of scope and complexity similar to that anticipated for this project. Documentation should include resumes, references, certifications, project lists, experience descriptions and details, etc. Perform work with the personnel submitted and accepted. If personnel changes are required during construction, suspend drilled pier construction until replacement personnel are submitted and accepted.

**C. Construction Sequence Plan**

Submit two hard copies and an electronic copy (pdf or jpeg format on CD or DVD) of a drilled pier construction sequence plan for all the drilled piers 30 days before beginning drilled pier construction. Provide detailed project specific information in this plan including:

1. Experience documentation in accordance with Section 1.0, Item B.
2. List and size of proposed equipment including: cranes, kelly bars, drill rigs, vibratory hammers, augers, core barrels, cleanout buckets, airlifts and/or submersible pumps, tremies and/or concrete pumps, casing (diameters, thicknesses and lengths), desanding equipment (for slurry construction), etc.
3. Order of drilled pier construction.
4. Casing installation and temporary casing removal methods including the order of telescoped casing removal.
5. Drilled pier excavation and bottom cleaning methods.
6. Reinforcement placement methods including how the cage will be supported and centered in the excavation
7. Concrete placement procedures including how the tremie or pump will be controlled and what type of discharge control will be used to prevent concrete contamination when the tremie or pump is initially placed in the excavation.
8. Concrete mix design in accordance with Section 1000 of the Standard Specifications.
9. Slurry details (if applicable) including intended purpose, product information, manufacturer's recommendations for use, slurry equipment information and written approval from the slurry supplier that the mixing water is acceptable.
10. Procedures for handling drilling spoils and slurry overflow including environmental controls to prevent the loss of concrete, slurry and spoils.
11. Methods of how the slurry level will be maintained above the highest piezometric head (if applicable).
12. Crosshole sonic logging (CSL) submittals (if applicable) in accordance with the Crosshole Sonic Logging Special Provision.
13. Other information shown in the plans or requested by the Engineer.

Do not begin drilled pier construction until the construction sequence plan is accepted. If alternate drilled pier construction procedures are proposed or necessary, a revised submittal may be required. If the work deviates from the accepted submittal without prior approval, the Engineer may suspend drilled pier construction until a revised drilled pier construction sequence plan is submitted and accepted.

#### D. Preconstruction Meeting

Conduct a drilled pier preconstruction meeting with the Project Manager, Drilling Superintendent, the Resident or Bridge Maintenance Engineer and/or his or her representatives, the Bridge Construction Engineer and the Geotechnical Operations Engineer to discuss construction and inspection of the drilled piers. This meeting should occur after the Drilled Pier Contractor has mobilized to the site and the construction sequence plan has been reviewed and accepted.

#### E. Definition of Rock

For the purposes of this provision, "Rock" is defined as a continuous intact natural material in which the penetration rate with a rock auger is less than 2 in (50 mm) per 5 minutes of drilling at full crowd force. This definition excludes discontinuous loose natural materials such as boulders and man-made materials such as concrete, steel, timber, etc. This definition of rock is not for pay purposes; see Section 8.0 for method of measurement of "Drilled Piers Not in Soil".

#### F. Rock Socket

When required by a note on plans, provide a minimum penetration into rock as directed by the Engineer.

### 2.0 EXCAVATION

Perform the excavations required for the drilled piers to the dimensions and elevations shown on the plans or otherwise required by the Engineer, including any miscellaneous grading or excavation to install the pier.

Excavate with a drill rig of adequate capacity. Use a rig that is capable of drilling through soil and non-soil including rock, boulders, timbers, man-made objects and any other materials encountered. Blasting is not permitted to advance the excavation. Blasting for core removal is only permitted when approved by the Engineer.

Use a drill rig capable of drilling a minimum of 25% deeper than the deepest drilled pier shown on the plans. Use drilling tools equipped with vents designed to stabilize the hydrostatic pressure above and below the tool during extraction from the excavation. For drilled piers constructed with slurry, monitor the rate at which the drilling tools are inserted and extracted so as to minimize sidewall suction action in the excavation. Drilling below the tip elevations shown on the plans may be required to achieve adequate bearing.

A drilling log signed by the Drilled Pier Contractor that includes material descriptions and depths and drilling times and tools used for each material is required for each pier.

Dispose of drilling spoils in accordance with Section 802 of the Standard Specifications and as directed by the Engineer. Drilling spoils consist of all excavated material including water removed from the excavation either by pumping or drilling tools. Construct drilled piers at the locations shown on the plans and within the tolerances

specified herein. If tolerances are exceeded, the Engineer may require corrective measures to meet the tolerances specified. Construct the drilled piers such that the axis at the top of the piers is no more than 3 in (75 mm) in any direction from the position shown in the plans. Build drilled piers within 2% of the plumb deviation for the total length of the piers. Verify the plumbness of the drilled pier excavations by an accurate procedure, such as an inclinometer on the kelly bar or other approved techniques. Unless a plan note requires the construction joint to be moved below the ground line, construct the finished top of pier elevation between 1 in (25 mm) above and 3 in (75 mm) below the top of pier elevation shown on the plans.

When drilling from a barge, use a fixed template that maintains pier position and alignment during all excavation and concrete placement operations. Floating templates (attached to a barge) are not allowed.

Stabilize all drilled pier excavations with steel casing and/or slurry except, as approved by the Engineer, the portions of the excavations in rock as defined by Section 1.0, Item E. Stabilize excavations at all times from the beginning of drilling through concrete placement. When using multiple casings in a telescoped arrangement, overlap subsequent casings a minimum of 2 ft (600 mm). Provide casing or slurry in rock if unstable material is anticipated or encountered during drilling. When slurry is used, a partially excavated pier is subject to the time requirements in Section 2.0, Item C, Number 1. When slurry is not used, do not leave a drilled pier excavation open overnight unless it is cased to rock.

If a note on plans does not prohibit dewatering and the tip of the drilled pier excavation is in rock as defined by Section 1.0, Item E, dewater the excavation to the satisfaction of the Engineer. The minimum diameter of a drilled pier excavation in rock or an excavation constructed with slurry may be 2 in (50 mm) less than the design drilled pier diameter shown on the plans.

In order to remove a casing and substitute a larger diameter or longer casing through unstable or caving material, either backfill the excavation, stabilize the excavation with slurry before removing the casing to be replaced or insert the larger casing around the casing to be replaced before removal.

#### A. Permanent Steel Casing

Use permanent steel casings as directed by the Engineer and/or as required by a note on plans. Use permanent casings that are clean smooth non-corrugated watertight steel of ample strength to withstand handling and driving stresses and the pressures imposed by concrete, earth or backfill. Provide permanent steel casings conforming to ASTM A252, Grade 2 and the following minimum wall thickness requirements.

**CASING WALL THICKNESS**

Casing Diameter	Minimum Wall Thickness
Less than or equal to 48 inches (1220 mm)	3/8 inch (9 mm)
Greater than 48 inches (1220 mm) and less than or equal to 78 inches (1982 mm)	1/2 inch (12 mm)
Greater than 78 inches (1982 mm)	5/8 inch (16 mm)

Provide permanent casings with an outside diameter not less than the specified size of the drilled pier. If approved by the Engineer, a permanent casing larger in diameter than the drilled pier design diameter is permitted. However, no payment will be made for any costs associated with larger permanent casings. Extend the permanent casings from the top of pier elevation or top of permanent casing elevation, if shown on the plans, to a depth no deeper than the permanent casing tip elevation shown on the plans or the revised permanent casing tip elevation approved by the Engineer. Do not extend permanent casings below the permanent casing tip elevation shown on the plans without prior approval from the Engineer. Additional drilled pier length and reinforcement may be required if permanent casings are extended below the permanent casing tip elevation shown on the plans. No payment will be made for the resulting additional drilled pier length, reinforcement and permanent casing unless the Engineer approves the revised permanent casing tip elevation. Install permanent casings in one continuous unit. If splices are necessary for the casing, use an approved method of splicing. Splices are considered incidental and no additional compensation will be made.

Remove any portion of the permanent steel casing that extends above the top of the drilled pier after the Drilled Pier Concrete has achieved a compressive strength of 4500 psi (31.0 MPa). The cost of casing removal will be considered incidental to the cost of the permanent steel casing.

**B. Temporary Steel Casing**

Provide temporary steel casing to stabilize drilled pier excavations, protect personnel and prevent caving or sloughing, that is clean smooth non-corrugated watertight steel of ample strength to withstand handling and driving stresses and the pressures imposed by concrete, earth or backfill. Use temporary steel casings with a minimum wall thickness of 3/8 in (9 mm) and an outside diameter not less than the specified size of the drilled pier.

Temporary steel casings that become bound or fouled during construction and cannot be practically removed may constitute a defect in the drilled pier. Improve defective piers to the satisfaction of the Engineer by removing the concrete and extending the pier deeper, providing a replacement drilled pier or other acceptable means. Complete all corrective measures including any additional design work to the satisfaction of the Engineer without additional compensation or an extension of the completion date of the project.

### C. Slurry

When slurry use is not noted on the plans, slurry construction is an option. If slurry use is required or an option, polymer slurry use may either be required or prohibited as noted on the plans. If slurry use is required or an option and polymer slurry use is not noted on the plans, polymer slurry use is an option.

If polymer slurry is required or an option, use one of the following polymers listed in the table below:

PRODUCT	MANUFACTURER
SlurryPro CDP	KB Technologies Ltd. 3648 FM 1960 West, Suite 107 Houston, TX 77068 (800) 525-5237
Super Mud	PDS Company 105 West Sharp Street El Dorado, AR 71730 (800) 243-7455
Shore Pac GCV	CETCO Drilling Products Group 1500 West Shure Drive Arlington Heights, IL 60004 (800) 527-9948
Novagel Polymer	Geo-Tech Drilling Fluids 220 North Zapata Hwy, Suite 11A Laredo, TX 78043 (210) 587-4758

Use polymer slurry and associated additives in accordance with the manufacturer's guidelines and recommendations unless otherwise approved by the Engineer. The Drilled Pier Contractor should be aware that polymer slurry might not be appropriate for a given site. Polymer slurry should not be used for excavations in soft or loose soils as determined by the Engineer. When using polymer slurry, a representative of the manufacturer must be on-site to assist and guide the Contractor during the construction of the first three drilled piers unless otherwise approved by the Engineer. This representative must also be available for on-site assistance to the Contractor if problems are encountered during the construction of the remaining drilled piers as requested by the Engineer. The cost of all on-site assistance and representation will be considered incidental to the cost of the drilled piers.

If mineral slurry is required or an option, use mineral slurry composed of bentonite having a mineral grain size that remains in suspension and sufficient viscosity and gel characteristics to transport excavated material to a suitable screening system to minimize bottom sedimentation. Provide bentonite slurry to maintain the stability of the excavation and allow for proper concrete placement. The Drilled Pier

Contractor should be aware that salt water with salt concentrations in excess of 500 ppm may adversely affect bentonite slurry.

When slurry is used and permanent steel casing is not required, use temporary casing a minimum of 10 ft (3 m) long at the top of the excavation. Maintain the top of the temporary casing a minimum of 1 ft (300 mm) above the ground surface surrounding the casing.

Maintain the slurry in the pier excavation at a level not less than 5 ft (1.5 m) or the drilled pier diameter (whichever is greater) above the highest piezometric head along the depth of the pier. It is anticipated that the highest piezometric head is the static water or groundwater elevation (elevation head). However, the Drilled Pier Contractor is responsible for determining the highest piezometric head. The use of steel casing to maintain the required slurry level is permitted; however, no payment will be made for casing that is used for this purpose. If the slurry level in the excavation suddenly changes or cannot be practically maintained, or the slurry construction method does not produce the desired result, stop the pier construction until an alternate construction procedure is accepted by the Engineer.

Thoroughly premix the slurry with water in tanks before introducing the slurry into the excavation. Submit written approval from the slurry supplier that the mixing water is acceptable. Allow bentonite slurry to hydrate 24 hours in tanks before use. Slurry tanks of adequate capacity are required for slurry circulation, storage and treatment. Excavated slurry pits are not allowed in lieu of slurry tanks without prior approval from the Engineer. Take all steps necessary to prevent the slurry from "setting up" in the excavation. Such methods include, but are not limited to agitation, circulation and/or adjusting the properties of the slurry. Perform desanding operations as necessary to achieve the acceptable sand contents before placing reinforcing steel.

#### 1. Time

Adjust the excavation operations so that the maximum time the slurry is in contact with the sidewalls of the uncased portions of the drilled pier excavation (from time of drilling to concrete placement) does not exceed 36 hours. Do not work on more than two drilled piers per drill rig below the steel casing at any time.

Agitate bentonite slurry in the drilled pier excavations a minimum of every 4 hours. If the bentonite slurry is not agitated a minimum of every 4 hours or the 36 hour time limit is exceeded, the Engineer may require the excavation to be overreamed beneath the steel casing a minimum of 1 in (25 mm) and a maximum of 3 in (75 mm) before performing any other operations in the excavation. Overream with a grooving tool, overreaming bucket or other approved equipment at a minimum spacing of 12 in (300 mm). All costs associated with both overreaming and the resulting additional concrete placement will be considered incidental to the cost of the drilled piers.

If concrete placement is not completed within three days of beginning drilling, enlarge the design drilled pier diameter by a minimum of 6 inches (150 mm), or as required by the Engineer, the entire length of the pier at no additional cost to the Department. Enlarging the drilled pier includes replacing the steel casing with steel casing the same size to which the drilled pier is enlarged at no additional cost to the Department.

## 2. Sampling

Collect all slurry samples using an approved sampling tool. Test slurry samples to determine density, viscosity, pH and sand content to establish an acceptable working pattern during slurry use. Test a minimum of 4 samples during each 8 hours of slurry use for each drilled pier. Take the first sample for the first 8 hours from the slurry tank before introducing slurry into the excavation. Collect the remaining samples from the bottom of the pier excavation. When the test results are acceptable and consistent, a decrease in the testing frequency to one sample per 4 hours of slurry use is permitted.

Before placing reinforcing steel in the drilled pier excavation, extract slurry samples from the bottom of each excavation and at intervals not exceeding 10 ft (3 m) up the excavation, until two consecutive samples produce acceptable values for density, viscosity, pH and sand content.

## 3. Testing

Have qualified personnel conduct slurry tests to determine density, viscosity, pH and sand content. The following tables show the acceptable range of values for the slurry properties:



<b>BENTONITE SLURRY</b> Sodium Montmorillonite (Commercial Bentonite) Acceptable Range of Values			
Property (units)	At Time of Slurry Introduction	In Excavation Immediately Before Concrete Placement	Test Method
Density, pcf (kg/m <sup>3</sup> )	64.3 – 69.1 (1030-1107)	64.3 – 75.0 (1030-1201)	Mud Weight (Density) API 13B-1 Section 1
Viscosity, sec./quart (sec./0.95 liters)	28 – 45	28 – 45	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	8 – 11	8 – 11	pH Paper or Glass Electrode pH Meter
Sand Content (percent)	Less than or equal to 4	Less than or equal to 2	Sand API 13B-1 Section 5
Notes: 1. Perform tests when the slurry temperature is above 40°F (4.4°C). 2. Increase density by 2 pcf (32 kg/m <sup>3</sup> ) in saltwater.			

<b>SLURRYPRO CDP</b> KB Technologies Ltd. Acceptable Range of Values			
Property (units)	At Time of Slurry Introduction	In Excavation Immediately Before Concrete Placement	Test Method
Density, pcf (kg/m <sup>3</sup> )	Less than or equal to 67 (1073)	Less than or equal to 64 (1025)	Mud Weight (Density) API 13B-1 Section 1
Viscosity, sec./quart (sec./0.95 liters)	50 – 120	Less than or equal to 70	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	6 – 11.5	6 – 11.5	pH Paper or Glass Electrode pH Meter
Sand Content (percent)	Less than or equal to 0.5	Less than or equal to 0.5	Sand API 13B-1 Section 5
Notes: 1. Perform tests when the slurry temperature is above 40°F (4.4°C). 2. Increase density by 2 pcf (32 kg/m <sup>3</sup> ) in saltwater.			

<b>SUPER MUD</b> PDS Company Acceptable Range of Values			
Property (units)	At Time of Slurry Introduction	In Excavation Immediately Before Concrete Placement	Test Method
Density, pcf (kg/m <sup>3</sup> )	Less than or equal to 64 (1025)	Less than or equal to 64 (1025)	Mud Weight (Density) API 13B-1 Section 1
Viscosity, sec./quart (sec./0.95 liters)	32 – 60	Less than or equal to 60	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	8 – 10	8 – 10	pH Paper or Glass Electrode pH Meter
Sand Content (percent)	Less than or equal to 0.5	Less than or equal to 0.5	Sand API 13B-1 Section 5
Notes: 1. Perform tests when the slurry temperature is above 40°F (4.4°C). 2. Increase density by 2 pcf (32 kg/m <sup>3</sup> ) in saltwater.			

<b>SHORE PAC GCV</b> CETCO Drilling Products Group Acceptable Range of Values			
Property (units)	At Time of Slurry Introduction	In Excavation Immediately Before Concrete Placement	Test Method
Density, pcf (kg/m <sup>3</sup> )	Less than or equal to 64 (1025)	Less than or equal to 64 (1025)	Mud Weight (Density) API 13B-1 Section 1
Viscosity, sec./quart (sec./0.95 liters)	33 – 74	Less than or equal to 57	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	8 – 11	8 – 11	pH Paper or Glass Electrode pH Meter
Sand Content (percent)	Less than or equal to 0.5	Less than or equal to 0.5	Sand API 13B-1 Section 5
Notes: 1. Perform tests when the slurry temperature is above 40°F (4.4°C). 2. Increase density by 2 pcf (32 kg/m <sup>3</sup> ) in saltwater.			

<b>NOVAGEL POLYMER</b> Geo-Tech Drilling Fluids Acceptable Range of Values			
<b>Property (units)</b>	<b>At Time of Slurry Introduction</b>	<b>In Excavation Immediately Before Concrete Placement</b>	<b>Test Method</b>
Density, pcf (kg/m <sup>3</sup> )	Less than or equal to 67 (1073)	Less than or equal to 64 (1025)	Mud Weight (Density) API 13B-1 Section 1
Viscosity, sec./quart (sec./0.95 liters)	45 – 104	Less than or equal to 104	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	6.5 – 11.5	6.5 – 11.5	pH Paper or Glass Electrode pH Meter
Sand Content (percent)	Less than or equal to 0.5	Less than or equal to 0.5	Sand API 13B-1 Section 5
Notes: 1. Perform tests when the slurry temperature is above 40°F (4.4°C). 2. Increase density by 2 pcf (32 kg/m <sup>3</sup> ) in saltwater.			

When any slurry samples are found to be unacceptable, take whatever action is necessary to bring the slurry within specification requirements. Do not place reinforcement steel until resampling and testing produce acceptable results.

Sign and submit reports of all slurry tests required above to the Engineer upon completion of each drilled pier. The Department reserves the right to perform comparison slurry tests at any time.

#### 4. Slurry Disposal

Comply with all applicable local, state and federal regulations, as well as with the environmental permits of the project when disposing of excavated materials contaminated with slurry. Keep all excavated materials, spoils from the desanding unit and slurry out of the water and contain them at all times. The cost of the containment, removal and disposal of excavated materials contaminated with slurry, as well as the slurry itself, is incidental to the cost of the drilled piers.

### 3.0 CLEANING

Excavate the bottom of the drilled pier to a level plane or stepped with a maximum step height of 12 in (300 mm). Clean the bottom of the excavation of loose material using a technique accepted in the construction sequence plan. When the drilled pier

excavation is not hand cleaned, clean the bottom of the excavation with a cleanout bucket and an airlift or submersible pump.

#### 4.0 INSPECTION METHODS AND REQUIREMENTS

After the drilled pier excavation is complete and immediately before placing reinforcing steel and concrete, demonstrate the proper condition of the drilled pier excavation to the Engineer. Provide bosun chairs, gas meters, safety equipment, lights, mirrors, weighted tape measures, steel probes, personnel and all assistance required for the Engineer to inspect the drilled pier excavations.

##### A. Bearing Capacity

If the required end bearing capacity is not satisfied, increase the drilled pier length as directed by the Engineer. Payment for the additional drilled pier length to achieve adequate bearing will be made per the drilled pier pay items.

One or more of the following tests may be used to verify the conditions and continuity of the bearing material before placing reinforcing steel.

##### 1. Visual Inspection

The end bearing of the drilled pier excavation may be inspected either by entering the excavation or visually from the top of the excavation.

##### 2. Test Hole

If the tip of the drilled pier excavation is in rock as defined by Section 1.0, Item E, drill a 1-1/2 in (38 mm) diameter test hole in each drilled pier to a depth at least 6 ft (1.8 m) below the tip elevation.

##### 3. Standard Penetration Test (SPT)

When noted on the plans that a SPT is required, drive a split barrel sampler a minimum of 18 in (450 mm) below the drilled pier tip elevation or to refusal in accordance with ASTM D1586, "Penetration Test and Split-Barrel Sampling of Soils". Complete the SPT using NW rods through casing or another stabilizing method as approved by the Engineer. Extend the SPT rods from the top of the drilled pier excavation to the drilled pier tip elevation. Firmly support the SPT casing at the top of the drilled pier excavation and rest it on the bottom of the excavation. Conduct the SPT a minimum of 12 in (300 mm) away from the sidewalls of the excavation and be sure not to scrape the sidewalls of the excavation while inserting or withdrawing the SPT equipment. Have the SPT device on-site before reaching the drilled pier tip elevation. Report the number of blows for each 6 in (150 mm) increment driven and a description of the recovered soil sample to the

Engineer. The Engineer determines the number of blows required for bearing.

## B. Bottom Cleanliness

The pier excavation bottom is considered clean if a minimum of 50% of the bottom area has less than 1/2 in (13 mm) of sediment and no portion of the bottom area has more than 1-1/2 in (38 mm) of sediment as determined by the Engineer.

One or more of the following inspection procedures may be used to inspect the cleanliness of the pier excavation bottom before placing the reinforcing steel and concrete.

### 1. Visual Inspection

The cleanliness of the drilled pier excavation bottom may be observed either by entering the excavation or from the top of the excavation.

### 2. Steel Probe

If the excavation is not dewatered or if the Engineer requires it, lower a steel probe to the bottom of the drilled pier excavation to ensure that cleaning has been satisfactorily completed. Supply a steel probe that is 2 ft (0.6 m) long with a flat tip on the sounding end, weighs approximately 9 lbs, #10 rebar (4 kg, #32 rebar), and is suspended from the opposite end with a non-stretch cable.

### 3. Shaft Inspection Device (SID)

The Department may use the SID to take sediment measurements and observe the bottom conditions of the drilled pier excavation at a minimum of five locations selected by the Engineer. The SID is a remotely operated camera capable of observing bottom conditions and measuring sediment underwater and slurry. Each SID inspection (including all 5 locations) takes approximately 1 hour after the equipment has been set up. The Engineer provides the SID and the personnel to operate the device. Notify the Engineer a minimum of 2 days before beginning the drilled pier excavation so the Engineer can arrange for the transportation of the SID to the site and the personnel to perform the inspections. SID inspections are required until the cleanliness of the drilled pier excavation bottom is acceptable in accordance with Section 4.0, Item B of this provision. Do not conduct operations that interfere with the SID inspections. Remove all cleaning and drilling equipment from the drilled pier excavation during any SID inspection. Provide a working area large enough for the SID equipment and within reach of the cabling supplied and clear sight distance of the drilled pier excavation. Assist the Engineer in the transportation and handling of the SID and all the associated equipment and in supporting the electric hoist and/or hoisting tripod

for the SID. If required, provide a safe and secure location to park the trailer for the SID while it is unattended on the project site. If any of the SID equipment is damaged due to the Contractor's negligence, then replace the equipment at no additional cost to the Department. Provide replacement equipment that exactly matches the damaged equipment as directed by the Engineer. All costs involved with the initial SID inspection of each drilled pier excavation will be made per the SID pay item. No additional payment will be made for subsequent or repeated SID inspections of the same drilled pier excavation. No claims for either lost time or actual expense of any SID inspections that do not find the cleanliness of the drilled pier excavation bottom in compliance with this provision will be paid.

## 5.0 REINFORCING STEEL

Reinforcing steel shall conform to Section 1070 of the Standard Specifications. Completely assemble a cage of reinforcing steel, consisting of longitudinal and spiral bars and place it in the drilled pier excavation as a unit immediately after the proper condition of the excavation is demonstrated to the Engineer. When concrete placement does not follow immediately after cage placement, remove the steel from the pier excavation unless the Engineer directs otherwise. If the cage is removed, recheck pier excavation cleanliness in accordance with this provision before reinstalling the cage.

If the drilled pier excavation is cased down to rock, immediate placement of the reinforcing steel and the concrete is not required. If electing to delay placement of the reinforcing steel and concrete due to the presence of rock, recheck the excavation for proper cleanliness immediately before placing reinforcing steel.

### A. Construction, Placement, Support and Alignment

If it is determined in the field that the drilled pier must be longer, adequate reinforcement may be required in the extended length as directed by the Engineer. Lift the cage so racking and cage distortion does not occur. Keep the cage plumb during concrete operations and casing extraction. Check the position of the cage before and after placing the concrete. Position the splice length of the drilled pier cage so that the column or footing has the minimum concrete cover shown on the plans.

Securely cross-tie the vertical and spiral reinforcement at each intersection with double wire. Support or hold down the cage so that the vertical displacement during concrete placement and casing extraction does not exceed 6 in (150 mm).

### B. Bolsters and Spacers

Set the rebar cage directly on the bottom of the drilled pier excavation with plastic bolsters under each vertical reinforcing bar. Ensure that spacers are tall enough to

raise the rebar cage off the bottom of the drilled pier excavation a minimum of 3 in (75 mm). If approved by the Engineer, the rebar cage may be hung in the excavation provided the mechanisms supporting the cage are left in place until the Drilled Pier Concrete strength has achieved 3000 psi (20.7 MPa).

In order to ensure the minimum required concrete cover and achieve concentric spacing of the cage within the pier, attach plastic spacer wheels at five points around the cage perimeter. Use spacer wheels that provide a minimum of 4 in (100 mm) "blocking" from the outside face of the spiral bars to the outermost surface of the drilled pier except in rock as defined by Section 1.0, Item E and when using slurry construction. Use spacer wheels for slurry construction or in rock that provide a minimum of 2 in (50 mm) "blocking". Tie spacer wheels that snap together with wire and allow them to rotate. Use spacer wheels that span at least two adjacent vertical bars. Start placing spacer wheels at the bottom of the cage and continue up along its length at maximum 10 ft (3 m) intervals.

## 6.0 CONCRETE

Drilled Pier Concrete shall conform to Section 1000 of the Standard Specifications. Begin concrete placement immediately after inserting reinforcing steel into the drilled pier excavation.

### A. Concrete Mix

As an option, use Type IP blended cement with a minimum cement content of 665 lbs/yd<sup>3</sup> (395 kg/m<sup>3</sup>) and a maximum cement content of 833 lbs/yd<sup>3</sup> (494 kg/m<sup>3</sup>). Use No. 78M coarse aggregate in the mix.

Use an approved water-reducer, water-reducing retarder, high-range water-reducer or high-range water-reducing retarder to facilitate placement of the concrete if necessary. Do not use a stabilizing admixture as a retarder in Drilled Pier Concrete without approval of the Engineer. Use admixtures that satisfy AASHTO M194 and add them at the concrete plant when the mixing water is introduced into the concrete. Redosing of admixtures is not permitted.

### B. Concrete Placement

Place concrete such that the drilled pier is a monolithic structure. Vibration is only permitted, if needed, in the top 10 ft (3 m) of the drilled pier. Remove any contaminated concrete from the top of the drilled pier at the time of concrete placement. Contain and remove all wasted concrete that spills over the casing.

Do not twist, move or otherwise disturb temporary casings until the concrete depth in the casing is in excess of 10 ft (3 m) above the bottom of the casing being disturbed. If the head is greater than 30 ft (9 m), the Engineer may require a concrete depth greater than 10 ft (3 m). The head is defined as the difference between the highest piezometric head along the depth of the pier and the static water

elevation inside the excavation. If the Engineer requires a concrete depth greater than 10 ft (3 m), the Drilled Pier Contractor may choose to either place concrete with this required concrete depth or place concrete with the wet method and a minimum concrete depth of 10 ft (3 m).

Maintain the required concrete depth above the bottom of the innermost casing during casing removal, except when the concrete level is at or above the top of drilled pier elevation. Sustain a sufficient concrete depth above the bottom of casing to overcome outside soil and water pressure. As the casing is withdrawn, exercise care in maintaining an adequate concrete depth within the casing so that fluid trapped behind the casing is displaced upward and discharged at the ground surface without contaminating or displacing the Drilled Pier Concrete. Exerting downward pressure, hammering and/or vibrating the temporary casing is permitted to facilitate removal.

Use the water inflow rate to determine the concrete placement procedure after any pumps have been removed from the excavation. If the inflow rate is less than 6 in (150 mm) per half hour, the concrete placement is considered dry. If the water inflow rate is greater than 6 in (150 mm) per half hour, the concrete placement is considered wet.

Keep a record of the volume of concrete placed in each drilled pier excavation and make it available to the Engineer. For drilled piers constructed with slurry or as directed by the Engineer, record a graphical plot of the depth versus theoretical concrete volume and actual measured concrete volume for each drilled pier and provide it to the Engineer when finished placing concrete.

#### 1. Dry Placement

Before concrete placement, make certain the drilled pier excavation is dry so the flow of concrete around the reinforcing steel can be verified by visual inspection. If the concrete free fall does not exceed 60 ft (18.3 m), placing the concrete by a central drop method where the concrete is chuted directly down the center of the excavation is permitted.

For drilled piers exceeding 60 ft (18.3 m) in length, use a tremie or a pump to place concrete unless otherwise approved by the Engineer. Support the tremie or pump pipe so that the concrete free fall is less than 60 ft (18.3 m) at all times.

#### 2. Wet Placement

Maintain a static water or slurry level in the excavation before placing concrete underwater. When temporary casing is used as the method to stabilize the excavation, place concrete with a sectional tremie or pump (no continuous tremie).



Once the concrete in the excavation reaches the same elevation as the static water level, placing concrete with the dry method is permitted. Before changing to the dry method of concrete placement, remove the water above the concrete and clean the concrete surface of all scum and sediment to expose clean, uncontaminated concrete.

### 3. Pump and Tremie

Pump concrete in accordance with Article 420-5 of the Standard Specifications. Use a steel tremie with watertight joints and a minimum diameter of 10 in (250 mm). Use a discharge control to prevent concrete contamination when the tremie tube or pump pipe is initially placed in the excavation. Extend the tremie tube or pump pipe into the concrete a minimum of 5 ft (1.5 m) at all times except when the concrete is initially introduced into the pier excavation. If the tremie tube or pump pipe pulls out of the concrete for any reason after the initial concrete is placed, restart concrete placement with a steel capped tremie tube or pump pipe.

### 4. Placement Time

Place concrete within the time frames specified in Table 1000-2 of the Standard Specifications for Class AA concrete. Do not place concrete so fast as to trap air, slurry, water, fluids, soil or any other deleterious materials in the vicinity of the reinforcing steel and the annular zone between the rebar cage and the excavation walls.

## 7.0 SCHEDULING AND RESTRICTIONS

If caving or sloughing occurs, compensation will not be provided for additional concrete to fill the resulting voids.

For the first 16 hours after a drilled pier has achieved its initial concrete set (as determined by the Engineer), do not drill adjacent piers, do not install adjacent piles, and do not allow any equipment wheel loads or "excessive" vibrations within 20 ft (6 m) of the drilled pier.

In the event that the procedures described herein are performed unsatisfactorily, the Engineer may suspend drilled pier construction in accordance with Article 108-7 of the Standard Specifications. If the integrity of the drilled pier is in question, the Engineer reserves the right to reject the drilled piers and require remediation. Remedial measures are proposed by the Contractor and require approval of the Engineer. No compensation will be paid for losses or damage due to remedial work or any investigation of drilled piers found defective or not in accordance with this provision or the plans.

## 8.0 MEASUREMENT AND PAYMENT

### A. Method of Measurement

#### 1. Drilled Piers in Soil

The quantity of "Drilled Piers in Soil" to be paid for will be the linear feet (meters) of the drilled piers exclusive of the linear feet (meters) of "Drilled Piers Not in Soil" computed from elevations and dimensions as shown on the plans or from revised dimensions authorized by the Engineer. Drilled piers through air or water will be paid for as "Drilled Piers in Soil".

#### 2. Drilled Piers Not in Soil

The quantity of "Drilled Piers Not in Soil" to be paid for will be the linear feet (meters) of drilled piers excavated in non-soil as determined by the Engineer. Non-soil is defined as material that can not be cut with a rock auger and requires excavation by coring, air tools, hand removal or other acceptable methods. Top of non-soil elevation is that elevation where the rock auger penetration rate is less than 2 in (50 mm) per 5 minutes of drilling at full crowd force and coring, air tools, etc. are used to advance the excavation. For pay purposes, after non-soil is encountered, earth seams, rock fragments and voids in the excavation less than 3 ft (0.9 m) in total length will be considered "Drilled Piers Not in Soil". If the non-soil is discontinuous, payment will revert to "Drilled Piers in Soil" at the elevation where non-soil is no longer encountered.

#### 3. Permanent Steel Casing

The quantity of "Permanent Steel Casing" to be paid for will be the linear feet (meters) of permanent steel casing as directed or required to be used. The length to be paid for will be measured along the permanent casing from the top of the casing elevation or top of the pier elevation, whichever is lower, to the permanent casing tip elevation. The Department will also pay for up to an additional 3 ft (1 m) of permanent casing cut off if the casing can not be installed to the permanent casing tip elevation shown on the plans. Permanent casing will be paid for only when permanent casing is authorized or when the Engineer directs the Contractor to leave a casing in place such that it becomes a permanent part of the pier. No payment will be made for temporary steel casings that become bound or fouled during pier construction and cannot be practically removed.

#### 4. Shaft Inspection Device (SID)

The quantity of "SID Inspection" to be paid for will be per drilled pier as noted on the plans and/or directed by the Engineer. SID inspections are performed until the bottom cleanliness of the drilled pier excavation is acceptable by this provision; however, payment will only be made for the initial SID inspection of each drilled pier excavation.

#### 5. Standard Penetration Test (SPT)

The quantity of "SPT Testing" to be paid for will be the actual number of SPT tests performed as noted on the plans and/or directed by the Engineer.

### B. Basis of Payment

#### 1. Drilled Piers in Soil

Payment will be made at the contract unit price per linear foot (meter) for "3'-6" Dia. Drilled Piers in Soil". Such payment will include, but is not limited to, furnishing all labor, tools, equipment, materials including concrete complete and in place and all incidentals necessary to excavate the drilled piers and complete the work as described in this provision. No additional payment will be made for slurry use. No additional payment will be made for any miscellaneous grading or excavation to install the drilled pier. "Reinforcing Steel" and "Spiral Column Reinforcing Steel" will be paid for separately and will not be part of the unit bid price for "Drilled Piers in Soil".

#### 2. Drilled Piers Not in Soil

Payment will be made at the contract unit price per linear foot (meter) for "3'-6" Dia. Drilled Piers Not in Soil". Such payment will include, but is not limited to, furnishing all labor, tools, equipment, materials including concrete complete and in place and all incidentals necessary to excavate the drilled piers and complete the work as described in this provision. No additional payment will be made for slurry use. No additional payment will be made for any miscellaneous grading or excavation to install the drilled pier. "Reinforcing Steel" and "Spiral Column Reinforcing Steel" will be paid for separately and will not be part of the unit bid price for "Drilled Piers Not in Soil".

#### 3. Permanent Steel Casing

Payment will be made at the contract unit price per linear foot (meter) for "Permanent Steel Casing for 3'-6" Dia. Drilled Pier". Such payment will include, but is not limited to, furnishing all material,

labor, tools, equipment and all incidentals necessary to install the casing in the pier excavation.

#### 4. Shaft Inspection Device (SID)

Payment for SID will be at the contract unit price per each for "SID Inspection". Such payment will include, but is not limited to, furnishing all materials, labor, tools, equipment and all incidentals necessary to complete the SID inspection as described in this provision.

#### 5. Standard Penetration Test (SPT)

Payment for SPT will be at the contract unit price per each for "SPT Testing". Such payment will include, but is not limited to, furnishing all materials, labor, tools, equipment and all incidentals necessary to complete the SPT at each test location.

### **CROSSHOLE SONIC LOGGING**

**(11-17-06)**

#### 1.0 GENERAL

In this section (VI) of the special provisions, the term "Engineer" shall refer to the Geotechnical Engineer of Record for the project or his approved representative.

Use the non-destructive testing method crosshole sonic logging (CSL) to verify the integrity of the drilled pier and quality of concrete. The CSL test method is described in ASTM D6760, "Integrity Testing of Concrete Deep Foundations by Ultrasonic Crosshole Testing". The Engineer will determine the number of CSL tests and which drilled piers will be CSL tested. Drilled piers are referred to as piers in this special provision.

The CSL test measures the time for an ultrasonic pulse to travel from a signal source in one tube to a receiver in another tube. In uniform, good quality concrete, the travel time between equidistant tubes should yield relatively consistent arrival times and correspond to a reasonable pulse velocity, signal amplitude and energy from the bottom to the top of the pier. Longer travel times, decrease in pulse velocity and lower amplitude/energy signals indicate the presence of irregularities such as poor quality concrete, voids, honeycombing, cracking and soil intrusions. The signal may be completely lost by the receiver and CSL recording system for severe defects such as voids.

Retain a CSL Consultant to perform CSL testing on the selected drilled piers. The CSL Consultant shall supply the Contractor with technical assistance and guidance during preparation and testing. Provide suitable access to the site and to the top of piers to be tested. Follow instructions from the CSL Consultant unless directed otherwise by the Engineer.

Place CSL tubes in all drilled piers. Perform CSL testing after concrete achieves a minimum compressive strength of 3000 psi (20.7 MPa) and within 7 to 30 days after concrete placement. After CSL test results have been reviewed and the Engineer has accepted the drilled pier, dewater the tubes and core holes, if any, and fill with an approved grout. If the Engineer elects not to CSL test a pier, obtain approval from the Engineer to dewater the tubes and fill them with an approved grout. Provide, mix and place grout in accordance with the Grout for Structures Special Provision.

## 2.0 PREQUALIFICATION AND EXPERIENCE REQUIREMENTS

Use a CSL Consultant prequalified by the Contractual Services Unit of the North Carolina Department of Transportation for Non-Destructive Foundation Testing work (work code 3070).

Submit documentation that the CSL Consultant has successfully completed at least 5 CSL testing projects within the last 3 years of a scope and complexity similar to that anticipated for this project. Documentation should include the General Contractor and Owner's name and current contact information with descriptions of each past project.

Provide the name of the Project Engineer that will be assigned to this project. Submit documentation for the Project Engineer verifying employment with the CSL Consultant, registration as professional engineer in North Carolina and a minimum of 5 years experience in CSL testing with past projects of scope and complexity similar to that anticipated for this project. Documentation should include resumes, references, certifications, project lists, experience descriptions and details, etc.

## 3.0 PREPARATION FOR CSL

Submit grout mix design or packaged grout type, CSL Consultant experience documentation, CSL tube size and Type 7 Contractor's Certification, cap details, couplings or joint details and the method for attaching the tubes. Provide this information with the drilled pier construction sequence plan.

Install 4 tubes in each drilled pier with a diameter of 5 ft (1524 mm) or less and 6 tubes in each pier with a diameter of greater than 5 ft (1524 mm). Provide 2 in (50 mm) inside diameter Schedule 40 steel pipe conforming to ASTM A53, Grade A or B, Type E, F or S. The tubes shall have a round, regular internal diameter free of defects or obstructions, including any at tube joints, in order to permit the free, unobstructed passage of source and receiver probes. The tubes shall provide a good bond with the concrete and be watertight.

Fit the tubes with a watertight threaded cap on the bottom and a removable threaded cap on the top. Securely attach the tubes to the interior of the reinforcing cage. Install the tubes in each drilled pier in a regular, symmetric pattern such that each tube is equally spaced from the others around the perimeter of the cage. Place tubes such that large vertical reinforcing bars do not block the direct line between adjacent tubes. The tubes are typically wire-tied to the reinforcing cage every 3 ft (1 m) or otherwise secured such that the tubes remain in position during placement of the cage and concrete. Install tubes

as near to vertical and as parallel as possible, **as non-vertical tubes can adversely affect data analysis**. Extend the tubes from 6 in (150 mm) above the pier tip to at least 3 ft (1 m) above the top of the pier. If the pier top elevation is below ground elevation, extend tubes at least 2 ft (610 mm) above ground surface. If the drilled pier tip elevation is excavated more than 1 ft (305 mm) below the tip elevation shown on the plans, extend the tubes using proper threaded mechanical couplings to within 6 in (150 mm) of the revised pier tip elevation.

Before placing the reinforcing cage, record the tube lengths and positions along the length of the cage. After concrete placement, measure the stickup of the tubes above the top of the drilled piers and verify tube spacing.

After placing reinforcement and before placing concrete, fill the CSL tubes with clean water and cap them to keep out debris. CSL tubes that are not filled with water and capped will be rejected. When removing the caps, use care not to apply excess torque, force or stress, which could break the bond between the tubes and the concrete.

#### 4.0 CSL EQUIPMENT

The minimum requirements of the CSL equipment are as follows:

- A microprocessor based CSL system for display of individual CSL records, analog-digital conversion and recording of CSL data, analysis of receiver responses and printing of report quality CSL logs
- Ultrasonic source and receiver probes which can travel through 2 in (50 mm) I.D. steel pipe
- An ultrasonic voltage pulser to excite the source with a synchronized triggering system to start the recording system
- A depth measurement device to electronically measure and record the source and receiver depths associated with each CSL signal
- Appropriate filter/amplification and cable systems for CSL testing
- An acquisition system that stores each log in digital format, with drilled pier identification, date, time and test details, including the source and receiver gain and displays arrival time data graphically during data acquisition
- 3D tomographic imaging software or source for completing the work

#### 5.0 CSL TEST PROCEDURE

Perform CSL testing between each adjacent perimeter CSL tube pair and opposite tube pairs along the cross section diameter. Maintain the source and receiver probes in the same horizontal plane unless test results indicate defects or poor concrete zones, in which case, further evaluate the defect zones with angle tests (source and receiver vertically offset at greater than 1.5 ft (460 mm) in the tubes). Report any defects indicated by decreased signal velocity and lower amplitude/energy signals at the time of testing and conduct angle tests in the zones of the defects as defined by the Concrete Condition

Rating Criteria (CCRC) in Section 6.0 of this provision. Make CSL measurements at depth intervals of 2.5 in (65 mm) or less from the bottom of the tubes to the top of each pier. Pull the probes simultaneously, starting from the bottom of the tubes, using a depth-measuring device to electronically measure and record the depths associated with each CSL signal. Remove any slack from the cables before pulling to provide for accurate depth measurements of the CSL records. In the event defects are detected, conduct additional logs at no additional cost to the Department.

If CSL probes will not pass through the entire length of the CSL tubes, core a 2 in (50 mm) diameter hole through the concrete the full length of the drilled pier for each inaccessible tube. If the CSL tubes debond from the concrete, core a 2 in (50 mm) diameter hole through the concrete to the depth of the debonding for each debonded tube. Locate core holes approximately 9 in (230 mm) inside the reinforcement as directed by the Engineer. Fill core holes with clean water and cover to keep out debris. No additional payment will be made for coring due to inaccessible or debonded tubes.

## 6.0 CSL RESULTS AND REPORTING

Submit two hard copies and an electronic copy (pdf or jpeg format on CD or DVD) of a CSL report sealed by the Project Engineer within 5 calendar days after field testing is complete. The CSL report should include but not limited to the following:

### A. Title Sheet

- NCDOT TIP number and WBS element number
- Project description
- County
- Bridge station number
- Pier location
- Personnel
- Report date

### B. Introduction

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

### D. Pier Details

- Pier and casing diameters, lengths and elevations
- Concrete compressive strength
- Installation methods and details including use of casing, slurry, pump, tremie, dry or wet placement of concrete, etc.

## E. CSL Logs

## F. Results/Conclusions

## G. Attachments

- Boring log(s)
- Field Drilled Pier Inspection Forms, Drilling Logs, SID Inspection Forms and Concrete Curves (from Engineer)
- CSL tube locations, elevations, lengths and identifications
- CSL hardware model
- Electronic copy of all CSL raw data

Include CSL logs for each tube pair tested with analysis of the initial pulse arrival time, velocity, relative pulse energy/amplitude and stacked waveform plotted versus depth. List all zones defined by the CCRC in a tabular format including the percent velocity reduction and the velocity values used from the nearby zone of good quality concrete. Discuss each zone defined by the CCRC in the CSL report as appropriate. Base the results on the percent reduction in velocity value from a nearby zone of good quality concrete with good signal amplitude and energy as correlated to the following:

<b>Concrete Condition Rating Criteria (CCRC)</b>			
<b>CCRC</b>	<b>Rating Symbol</b>	<b>Velocity Reduction</b>	<b>Indicative Results</b>
Good	G	$\leq 10 \%$	Good quality concrete
Questionable Defect	Q	$>10 \%$ & $< 20 \%$	Minor concrete contamination or intrusion and questionable quality concrete
Poor	P/D	$\geq 20 \%$	Defects exist, possible water/slurry contamination, soil intrusion and/or poor quality concrete
No Signal	NS	No Signal received	Soil intrusion or other severe defect absorbed the signal (assumes good bond of the tube-concrete interface)
Water	W	V = 4750 fps (1450 mps) to 5000 fps (1525 mps)	Water intrusion or water filled gravel intrusion with few or no fines present



The following are a few examples of types and causes of defects:

- Necking or arching of the concrete on withdrawal of the temporary casing.
- Necking or contamination of the concrete due to collapse of the side walls.
- Soft toe due to incomplete cleaning or collapse of the side walls.
- Horizontal lenses of silt/mud/slurry due to the tremie pipe rising above the concrete.
- Voids due to the use of low-slump concrete.
- Honeycombing due to washout of fines.
- Trapping of contaminants due to pumping concrete too fast.

The Engineer will require 5 working days to evaluate the CSL test results and determine whether or not the drilled pier is acceptable. Evaluation of CSL test results, with ratings other than good (G) per the CCRC may require further investigation and additional time for review and analysis of the data. Do not grout the CSL tubes or perform any further work on the CSL tested drilled pier until the Engineer determines whether the drilled pier is acceptable.

Perform tomography in order to further investigate and delineate the boundaries of any defective/unconsolidated zones with 20% or more reduction in velocity value as correlated to the CCRC. Process CSL data to construct easy to understand 2D/3D (2D cross-sections between tubes and 3D volumetric images for the entire pier) *color-coded* tomographic images indicating velocity variations along the pier. Identify the location and geometry of defective/unconsolidated zones in 3D color images with detailed discussion in the CSL report. Any further tests deemed necessary by the Engineer in order to determine the acceptability of the drilled pier will be determined after reviewing the CSL report. Additional test or analysis options include 3D tomographic imaging, single-hole sonic testing, sonic echo or impact response tests and concrete coring.

The Engineer determines the depth, location, diameter (PQ or NQ size) and number of core holes when concrete coring is required. If the Engineer is concerned about concrete strength or requires the use of a borehole camera for inspection, large diameter cores (PQ size) are required. Drill a minimum of 2 core holes to intercept the suspected defect zones. Use a coring method that provides maximum core recovery and minimizes abrasion and erosion. Provide concrete cores properly marked in a wooden crate labeled with the drilled pier depth at each interval of core recovery to the NCDOT Materials and Test Unit for evaluation and testing. Submit coring records, signed by the Contractor that include NCDOT project number, name of the Drilling Contractor, date cored and percent core recovery. Allow 5 working days after submitting the core records for the Engineer's review.

## 7.0 CORRECTION OF UNACCEPTABLE DRILLED PIER

When the Engineer determines a drilled pier is unacceptable, submit remedial measures to the Engineer for approval. No compensation will be made for remedial work or losses or damage due to remedial work of drilled piers found defective or not in accordance with

the Drilled Piers Special Provision or the plans. Modifications to the drilled pier design or any load transfer mechanisms required by the remedial action shall be designed by a Registered North Carolina Professional Engineer. Include supporting calculations and drawings sealed by a Registered North Carolina Professional Engineer for all foundation elements affected. Do not begin remedial action work until the Engineer has reviewed and accepted the remedial action plan. Allow 5 working days after submitting the remedial work plan for the Engineer's review and acceptance. Furnish all materials and work necessary to correct defective drilled piers.

## 8.0 MEASUREMENT AND PAYMENT

The complete and accepted CSL will be paid for at the unit bid price for "Crosshole Sonic Logging" per each. The Department will only pay for the initial CSL test on a drilled pier; no additional payment will be made for subsequent CSL tests performed on the same drilled pier. Include in this unit bid price all costs incurred for procurements, conducting the CSL testing, reporting of results and incidentals necessary to complete the work including any other test required to determine the acceptability of the drilled pier.

Include the cost of the crosshole sonic logging tubes in the unit bid price for drilled piers. No separate payment will be made for the CSL tubes. The unit bid price for the drilled piers will include full compensation for furnishing, installing, extending tubes, dewatering and grouting of all CSL tubes and core holes, if applicable, and all materials, labor, tools, equipment and incidentals necessary to complete the work.

## NATIVE GRASS SEEDING AND MULCHING

## BERMUDA

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

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

### March 1 - August 31

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

### September 1 - February 28

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

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

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

### **Measurement and Payment**

Payment for Native Grass *Seeding and Mulching* will be included in the contract bid price for Lump Sum - *Generic Erosion Control Item*.

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.

### **CRIMPING STRAW MULCH:**

Crimping shall be required on this project adjacent to any section of roadway where traffic is to be maintained or allowed during construction. In areas within six feet of the edge of pavement, straw is to be applied and then crimped. After the crimping operation is complete, an additional application of straw shall be applied and immediately tacked with a sufficient amount of undiluted emulsified asphalt.

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

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

### **REFORESTATION:**

#### **Description**

*Reforestation* will be planted in areas as directed. *Reforestation* is not shown on the plan sheets. See the Reforestation Detail Sheet.

All non-maintained riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated with native woody species.

The entire *Reforestation* operation shall comply with the requirements of Section 1670 of the *Standard Specifications*.

**Materials**

*Reforestation* shall be bare root seedlings 12"-18" tall.

**Construction Methods**

*Reforestation* shall be planted as soon as practical following permanent *Seeding and Mulching*. The seedlings shall be planted in a 16-foot wide swath adjacent to mowing pattern line, or as directed.

Root dip: The roots of reforestation seedlings shall be coated with a slurry of water, and either a fine clay (kaolin) or a superabsorbent that is designated as a bare root dip. The type, mixture ratio, method of application, and the time of application shall be submitted to the Engineer for approval.

With the approval of the Engineer, seedlings may be coated before delivery to the job or at the time of planting, but at no time shall the roots of the seedlings be allowed to dry out. The roots shall be moistened immediately prior to planting.

Seasonal Limitations: *Reforestation* shall be planted from November 15 through March 15.

**Measurement and Payment**

Payment for *Reforestation* will be included in the contract bid price for Lump Sum - *Generic Erosion Control Item*.

**ENVIRONMENTALLY SENSITIVE AREAS:****Description**

This project is located in an *Environmentally Sensitive Area*. This designation requires special procedures to be used for clearing and grubbing, temporary stream crossings, and grading operations within the Environmentally Sensitive Areas identified on the plans and as designated by the Engineer. This also requires special procedures to be used for seeding and mulching and staged seeding within the project.

The Environmentally Sensitive Area shall be defined as a 50-foot buffer zone on both sides of the stream or depression measured from top of streambank or center of depression.

**Construction Methods****(A) Clearing and Grubbing**

In areas identified as Environmentally Sensitive Areas, the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Article 200-1 of the *Standard Specifications*. Only clearing operations (not grubbing) shall be allowed in this buffer zone until

immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.

(B) Grading

Once grading operations begin in identified Environmentally Sensitive Areas, work shall progress in a continuous manner until complete. All construction within these areas shall progress in a continuous manner such that each phase is complete and areas are permanently stabilized prior to beginning of next phase. Failure on the part of the Contractor to complete any phase of construction in a continuous manner in Environmentally Sensitive Areas will be just cause for the Engineer to direct the suspension of work in accordance with Article 108-7 of the *Standard Specifications*.

(C) Temporary Stream Crossings

Any crossing of streams within the limits of this project shall be accomplished in accordance with the requirements of Subarticle 107-13(B) of the *Standard Specifications*.

(D) Seeding and Mulching

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

Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the Environmentally Sensitive Areas.

(E) Stage Seeding

The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes that are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above.

Additional payments will not be made for the requirements of this section, as the cost for this work shall be included in the contract bid price for Lump Sum - *Generic Erosion Control Item*.

**MINIMIZE REMOVAL OF VEGETATION:**

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

**STOCKPILE AREAS:**

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

**ACCESS AND HAUL ROADS:**

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

**GRAVEL CONSTRUCTION ENTRANCE:****Description**

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

**Materials**

Refer to Division 10

<b>Item</b>	<b>Section</b>
Filter Fabric for Drainage, Type 2	1056
Stone for Erosion Control, Class A	1042

**Construction Methods**

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

**Measurement and Payment**

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

**SPECIAL SEDIMENT CONTROL FENCE:****Description**

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

**Materials****(A) Posts**

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

**(B) 1/4" Hardware Cloth**

Hardware cloth shall have 1/4" openings constructed from #24 gauge wire. Install hardware cloth in accordance with Standard Drawing No. 1606.01.

**(C) Sediment Control Stone**

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

**Construction Methods**

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

**Measurement and Payment**

The quantity of Sediment Control Stone shall be paid for at the contract unit price per ton for "Sediment Control Stone". The quantity of 1/4" Hardware Cloth shall be paid for at the contract unit price per linear foot for "1/4" Hardware Cloth". Payment for all other labor and materials necessary to complete the work of *Special Sediment Control Fence* will be included in the contract bid price for Lump Sum – *Generic Erosion Control Item*.

**SAFETY FENCE:****Description**

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

**Materials**

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

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

**Construction Methods**

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

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

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

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

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

**Measurement and Payment**

The quantity of Safety Fence shall be paid for at the contract unit price per linear foot for "Safety Fence". Such payment will be full compensation including but not limited to



clearing and grading, furnishing and installing fence fabric with necessary posts and post bracing, staples, tie wires, tools, equipment and incidentals necessary to complete this work.

### **WATTLES WITH POLYACRYLAMIDE (PAM):**

#### **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, PAM application, and removing wattles.

#### **Materials**

Wattle shall meet the following specifications:

100% Curled Wood(Excelsior) Fibers	
Minimum Diameter	12 in.
Minimum Density	2.6 lb/ft <sup>3</sup> +/- 10%
Net Material	Synthetic
Net Openings	1 in. x 1 in.
Net Configuration	Totally Encased
Minimum Weight	20 lb. +/- 10% per 10 ft. length

Anchors: Stakes shall be used as anchors.

#### **Wooden Stakes:**

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

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

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

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

**Construction Methods**

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

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

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

Apply PAM over the lower center portion of the wattle where the water is going to flow over at a rate of 2 ounces per wattle, and 1 ounce of PAM on matting on each side of the wattle. PAM applications shall be done during construction activities after every rainfall event that is equal to or exceeds 0.50 in.

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 *Standard Specifications*.

**Measurement and Payment**

The quantity of wattle shall be paid for at the contract unit price per linear foot for "Wattle". The quantity of Polyacrylamide shall be paid for at the contract unit price per linear foot for "Polyacrylamide (PAM)". Payment for all other labor and materials necessary to complete the work of *Wattles with Polyacrylamide* will be included in the contract bid price for Lump Sum - *Generic Erosion Control Item*.

**SPECIAL STILLING BASIN:****Description**

This work consists of furnishing, placing, and removing special stilling basin(s) as directed. The special stilling basin can be used to filter pumped water during construction of drilled piers, footing excavation, and/or culvert construction. The special stilling basin can also be used for sediment storage at the outlet of temporary slope drain pipe(s).

**Materials**

Refer to Division 10

Item	Section	
Filter Fabric for Drainage, Type 2		1056
Sediment Control Stone		1005

The filter fabric and sediment control stone shall be clean and shall not contain debris.

The special stilling basin shall be a water permeable fabric bag that traps sand, silt, and fines as sediment-laden water is pumped into it, or as runoff flows into it through the temporary slope drain pipe(s).

The special stilling basin shall be a bag constructed to a minimum size of 10' x 15' made from a nonwoven fabric. It shall have a sewn-in 8" (maximum) spout for receiving pump discharge. The bag seams shall be sewn with a double needle machine using a high strength thread. The seams shall have a minimum wide width strength as follows:

Test Method	Minimum Specifications
ASTM D-4884	60 lb/in

The fabric used to construct the bag shall be stabilized to provide resistance to ultra-violet degradation and meet the following specifications for flow rates, strength, and permeability:

Property	Test Method	Minimum Specifications
Weight	ASTM D-3776	8.0 oz/yd
Grab tensile	ASTM D-4632	200.0 lb
Puncture	ASTM D-4833	130.0 lb
Flow rate	ASTM D-4491	80.0 gal/min/sf
Permittivity	ASTM D-4491	1.2 l/sec
UV Resistance	ASTM D-4355	70.0%

### Construction Methods

The Contractor shall install the special stilling basin(s), filter fabric, and stone in accordance with Standard Drawing No. 1630.06 and at locations on the plans and as directed. The special stilling basin(s) shall be placed on level ground.

The special stilling basin(s) shall be constructed such that it is portable and can be used adjacent to each drilled pier, footing and/or culvert, as required by the project commitments. If needed, temporary slope drain pipe(s) or pump discharge hoses will be attached to the special stilling basin(s) to divert runoff or pumped effluent directly into the special stilling basin(s). The special stilling basin may be cut to allow slope drain pipe to be inserted if needed and tied off tightly. The remaining sleeve or spout of the bag, if present, may be used to connect more than one special stilling basin in series as directed. If not used in this manner, the sleeve shall be tied off tightly to allow the bag to contain the effluent and force it to filter through the sides of the special stilling basin. The special stilling basin(s) shall be placed so the incoming runoff or pumped effluent flows into and through it without causing erosion to adjacent slopes or streambanks. In areas of turbidity and water quality concern, the

special stilling basin(s) shall be placed up grade and its runoff directed into a sediment control measure before being allowed to discharge into jurisdictional waters.

The special stilling basin(s) shall be replaced and disposed of when it is  $\frac{3}{4}$  full of sediment or when it is impractical for the bag to filter the sediment out at a reasonable flow rate. Prior approval from the Engineer shall be received before removal and replacement.

The Contractor shall be responsible for providing a sufficient quantity of bags to contain silt from pumped effluent during construction of drilled piers, footing excavation, and/or culvert construction. A sufficient quantity of special stilling basins shall be provided to contain sediment from temporary slope drain runoff.

### **Measurement and Payment**

Payment for all labor and materials necessary to complete the work of *Special Stilling Basin*, including furnishing all materials, placing and maintaining the special stilling basin(s), and removal and disposal of silt accumulations and bag, will be included in the contract bid price for Lump Sum - *Generic Erosion Control Item*.

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

(10-16-07)(Rev 10-20-09)

SP1G62

**Policy**

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

**Obligation**

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

**Definitions**

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

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

*Department* - North Carolina Department of Transportation

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

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

*Goal* - The DBE participation specified herein

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

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

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

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

*Form RS-1-D* - Form for subcontracts involving DBE subcontractors attesting to the agreed upon unit prices and extensions for the affected contract items.

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

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

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

### **Contract Goal**

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

Disadvantaged Business Enterprises (6) %

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

### **Contract Requirement**

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

### **Certified Transportation Firms Directory**

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

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

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

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

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

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

The bidder shall submit written documentation of the bidder/offeror's commitment to use a DBE subcontractor whose participation it submits to meet a contract goal and written confirmation from each DBE, listed in the proposal, indicating their participation in the contract. This documentation shall be submitted on the Department's form titled "Letter of Intent to Perform as a Subcontractor". This letter of intent form is available at:

<http://www.ncdot.org/doh/preconstruct/ps/contracts/letterofintent.pdf>. It shall be received in the office of the State Bridge Management Engineer no later than 2:00 pm of the sixth calendar day following opening of bids.

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

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

- (A) If a firm is determined to be an eligible DBE firm, the total dollar value of the participation by the DBE will be counted toward the contract requirement. The total dollar value of participation by a certified DBE will be based upon the value of work actually performed by the DBE and the actual payments to DBE firms by the Contractor.
- (B) When a DBE performs as a participant in a joint venture, the Contractor may count toward its DBE goal a portion of the total value of participation with the DBE in the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the DBE performs with its forces.
- (C)
  - (1) The Contractor may count toward its DBE requirement only expenditures to DBEs that perform a commercially useful function in the work of a contract. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE shall also be responsible with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, the Department will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors.
  - (2) A DBE may enter into subcontracts. Work that a DBE subcontracts to another DBE firm may be counted toward the contract requirement. Work that a DBE subcontracts to a non-DBE firm does not count toward the contract requirement. If a DBE contractor or subcontractor subcontracts a significantly greater portion of the work of the contract than would be expected on the basis of standard industry practices, the DBE shall be presumed not to be performing a commercially useful function. The DBE may present evidence to rebut this presumption to the Department for commercially useful functions. The Department's decision on the rebuttal of this presumption is subject to review by the Federal Highway Administration but is not administratively appealable to USDOT.
  - (3) The following factors will be used to determine if a DBE trucking firm is performing a commercially useful function.



- (a) The DBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there shall not be a contrived arrangement for the purpose of meeting DBE goals.
  - (b) The DBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
  - (c) The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
  - (d) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
  - (e) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE lessees not to exceed the value of transportation services provided by DBE-owned trucks on the contract. Additional participation by non-DBE lessees receives credit only for the fee or commission it receives as a result of the lease arrangement. The value of services performed under lease agreements between the DBE and Contractor will not count towards the contract requirement.
  - (f) For purposes of this paragraph, a lease shall indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks shall display the name and identification number of the DBE.
- (D) A contractor may count toward its DBE requirement 60 percent of its expenditures for materials and supplies required to complete the contract and obtained from DBE regular dealer and 100 percent of such expenditures to a DBE manufacturer.
- (E) A contractor may count toward its DBE requirement the following expenditures to DBE firms that are not manufacturers or regular dealers:
- (1) The fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, provided the fees or commissions are determined to be reasonable and not excessive as compared with fees and commissions customarily allowed for similar services.

- (2) The fees or commissions charged for assistance in the procurement of the materials and supplies, or for transportation charges for the delivery of materials or supplies required on a job site (but not the cost of the materials and supplies themselves), provided the fees are not from a manufacturer or regular dealer and provided the fees are determined to be reasonable and not excessive as compared with fees customarily allowed for similar services.

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

If the DBE participation submitted in the bid by the apparent lowest responsive bidder does not meet or exceed the DBE contract goal, the apparent lowest responsive bidder shall submit to the Department documentation of its good faith efforts made to reach the contract goal. One complete set and one copy of this information shall be received in the office of the State Bridge Management Engineer no later than 2:00 pm of the sixth calendar day following opening of bids. Where the information submitted includes repetitious solicitation letters it will be acceptable to submit a representative letter along with a distribution list of the firms that were solicited. Documentation of DBE quotations shall be a part of the good faith effort submittal as necessary to demonstrate compliance with the factors listed below which the Department considers in judging good faith efforts. This documentation may include written subcontractor quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

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

- (A) Whether the bidder attended any pre-bid meetings that were scheduled by the Department to inform DBEs of subcontracting opportunities.
- (B) Whether the bidder provided solicitations through all reasonable and available means (e.g. advertising in newspapers owned and targeted to the Disadvantaged) at least 10 calendar days prior to bid opening. Whether the bidder provided written notice to all DBEs listed in the NCDOT Directory of Transportation Firms, within the Divisions and surrounding Divisions where the project is located, that specialize in the areas of work (as noted in the DBE Directory) that the bidder will be subletting.
- (C) Whether the bidder followed up initial solicitations of interests by contacting DBEs to determine with certainty whether they were interested. If a reasonable amount of DBEs within the targeted Divisions do not provide an intent to quote or no DBEs specialize in the subcontracted areas, the bidder shall notify DBEs outside of the targeted Divisions that specialize in the subcontracted areas, and contact the Director of Business and Opportunity Workforce Development to give notification of the bidder's inability to get DBE quotes.
- (D) Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the bidder might otherwise perform these work items with its own forces.

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

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

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

### **DBE Replacement**

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

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

**(A) Performance Related Replacement**

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

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

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

**(B) Decertification Replacement**

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

**Changes in the Work**

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

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

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

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

**Reports**

All requests for subcontracts involving DBE subcontractors shall be accompanied by a certification executed by both the Prime Contractor and the DBE subcontractor attesting to the agreed upon unit prices and extensions for the affected contract items. This information shall be submitted on the Department Form RS-1-D, located at: <http://www.ncdot.org/doh/forms/files/FORMRS-1-D.doc> unless otherwise approved by the Engineer. The Department reserves the right to require copies of actual subcontract agreements involving DBE subcontractors.

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

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

**Reporting Disadvantaged Business Enterprise Participation**

- (A) The Contractor shall provide the Engineer with an accounting of payments made to Disadvantaged Business Enterprise firms, including material suppliers, contractors at all levels (prime, subcontractor, or second tier subcontractor). This accounting shall

be furnished to the Engineer for any given month by the end of the following month. Failure to submit this information accordingly may result in the following action:

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

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

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

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

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

#### **Failure to Meet Contract Requirements**

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

#### **LIABILITY INSURANCE:**

(11-18-08)

SP1 G80

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

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

The Contractor shall at its sole cost and expense obtain and furnish to the Department an original standard ACORD form certificate of insurance evidencing commercial general liability with a limit for bodily injury and property damage in the amount of \$5,000,000.00 per occurrence and general aggregate, covering the Contractor from claims or damages for bodily injury, personal injury, or for property damages which may arise from operating under the contract by the employees and agents of the Contractor. The required limit of insurance may be obtained by a single general liability policy or the combination of a general liability and excess liability or umbrella policy. The State of North Carolina shall be named as an additional insured on this commercial general liability policy. The policy may contain the following language as relates to the State as an additional insured: "This insurance with respect to the additional insured applies only to the extent that the additional insured is held liable for your or your agent's acts or omissions arising out of and in the course of operations performed for the additional insured."

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

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

**PROGRESS SCHEDULE:**

(12-18-07)

SP1 G70

Revise the 2006 *Specifications* as follows:

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

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

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

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

The proposed progress schedule shall contain the following items:

- (A) A time scale diagram with major work activities and milestone dates clearly labeled.
- (B) A cash curve corresponding to the milestones and work activities established above.
- (C) A written narrative that explains the sequence of work, the controlling operation(s), intermediate completion dates, milestones, project phasing, anticipated work schedule, and estimated resources. In addition, explain how permit requirements, submittal tracking, and coordination with subcontractors, utility companies and other entities will be performed.

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

- Clearing and grubbing
- Grading
- Drainage
- Soil stabilization
- Aggregate base course
- Pavement
- Culverts



- Bridges (including removal)
- Signals, ITS, and lighting
- Overhead signs

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

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

**STANDARD SPECIAL PROVISION****PLANT AND PEST QUARANTINES**

**(Imported Fire Ant, Gypsy Moth, Witchweed, And Other Noxious Weeds)**  
(3-18-03)

Z-04a

**Within quarantined area**

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

**Originating in a quarantined county**

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

**Contact**

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

**Regulated Articles Include**

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

**TWELVE MONTH GUARANTEE:**

(7-15-03)

SP1 G145

- (A) The Contractor shall guarantee materials and workmanship against latent and patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve months following the date of final acceptance of the work for maintenance and shall replace such defective materials and workmanship without cost to the Department. The Contractor will not be responsible for damage due to faulty design, normal wear and tear, for negligence on the part of the Department, and/or for use in excess of the design.
- (B) Where items of equipment or material carry a manufacturer's guarantee for any period in excess of twelve months, then the manufacturer's guarantee shall apply for that particular piece of equipment or material. The Department's first remedy shall be through the manufacturer although the Contractor is responsible for invoking the warranted repair work with the manufacturer. The Contractor's responsibility shall be limited to the term of the manufacturer's guarantee. NCDOT would be afforded the same warranty as provided by the Manufacturer.

This guarantee provision shall be invoked only for major components of work in which the Contractor would be wholly responsible for under the terms of the contract. Examples would include pavement structures, bridge components, and sign structures. This provision will not be used as a mechanism to force the Contractor to return to the project to make repairs or perform additional work that the Department would normally compensate the Contractor for. In addition, routine maintenance activities (i.e. mowing grass, debris removal, ruts in earth shoulders,) are not parts of this guarantee.

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

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

**LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC:**

(12-19-06)(Rev 3-16-10)

SP1 G151

Revise the *2006 Standard Specifications* as follows:

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

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

**GIFTS FROM VENDORS AND CONTRACTORS:**

(12-15-09)

SP1 G152

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

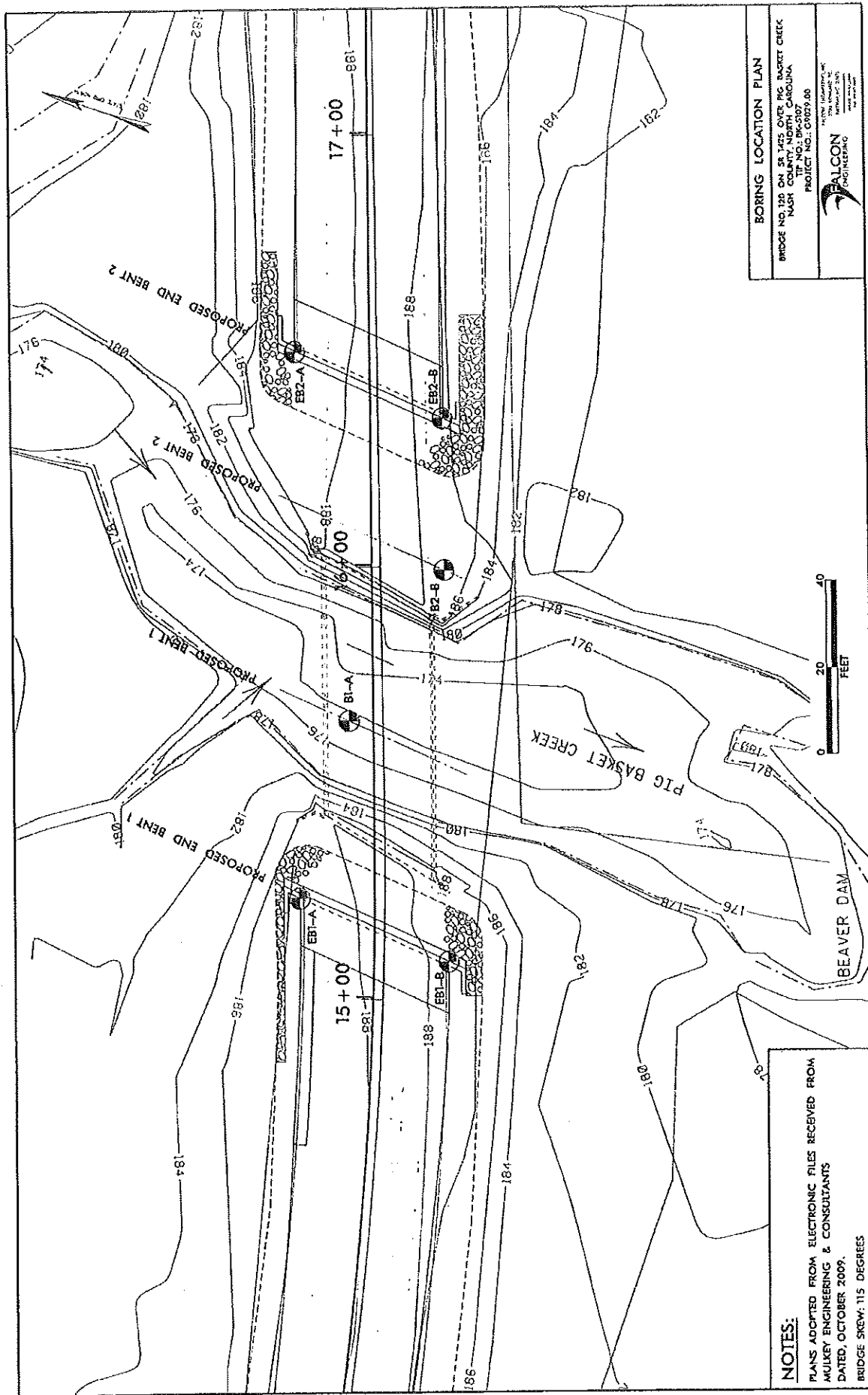
- (1) have a contract with a governmental agency; or
- (2) have performed under such a contract within the past year; or
- (3) anticipate bidding on such a contract in the future.

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

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

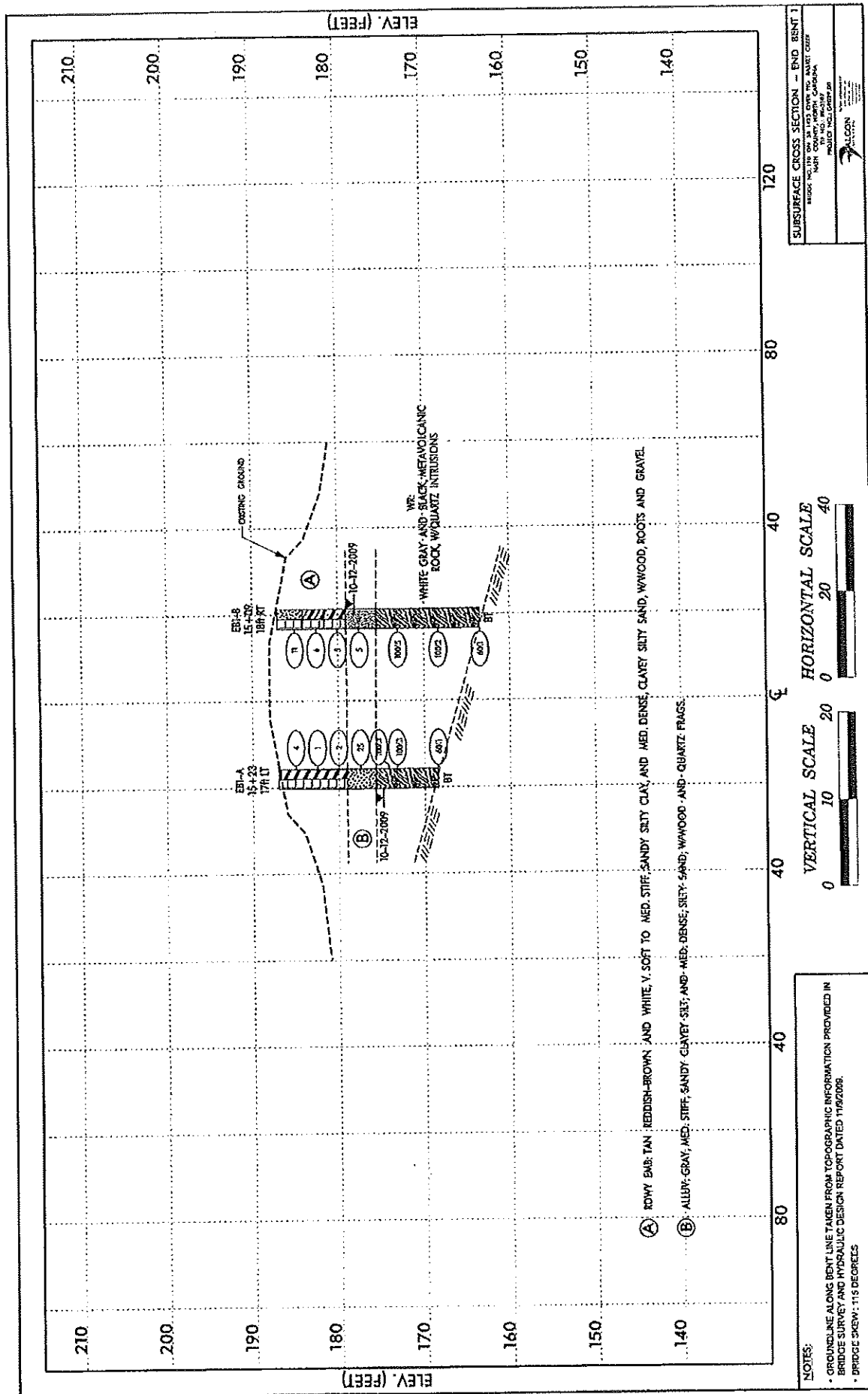


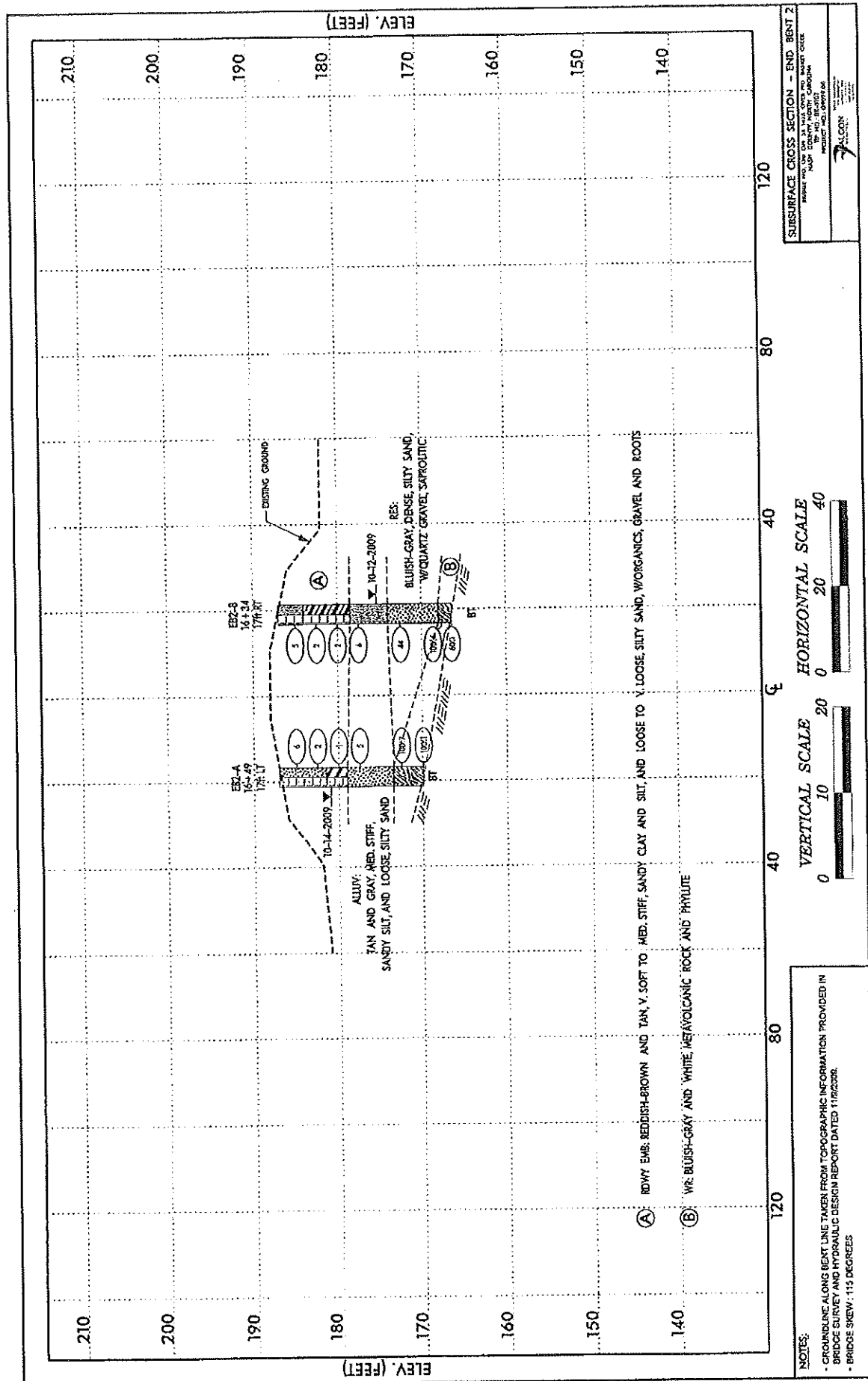




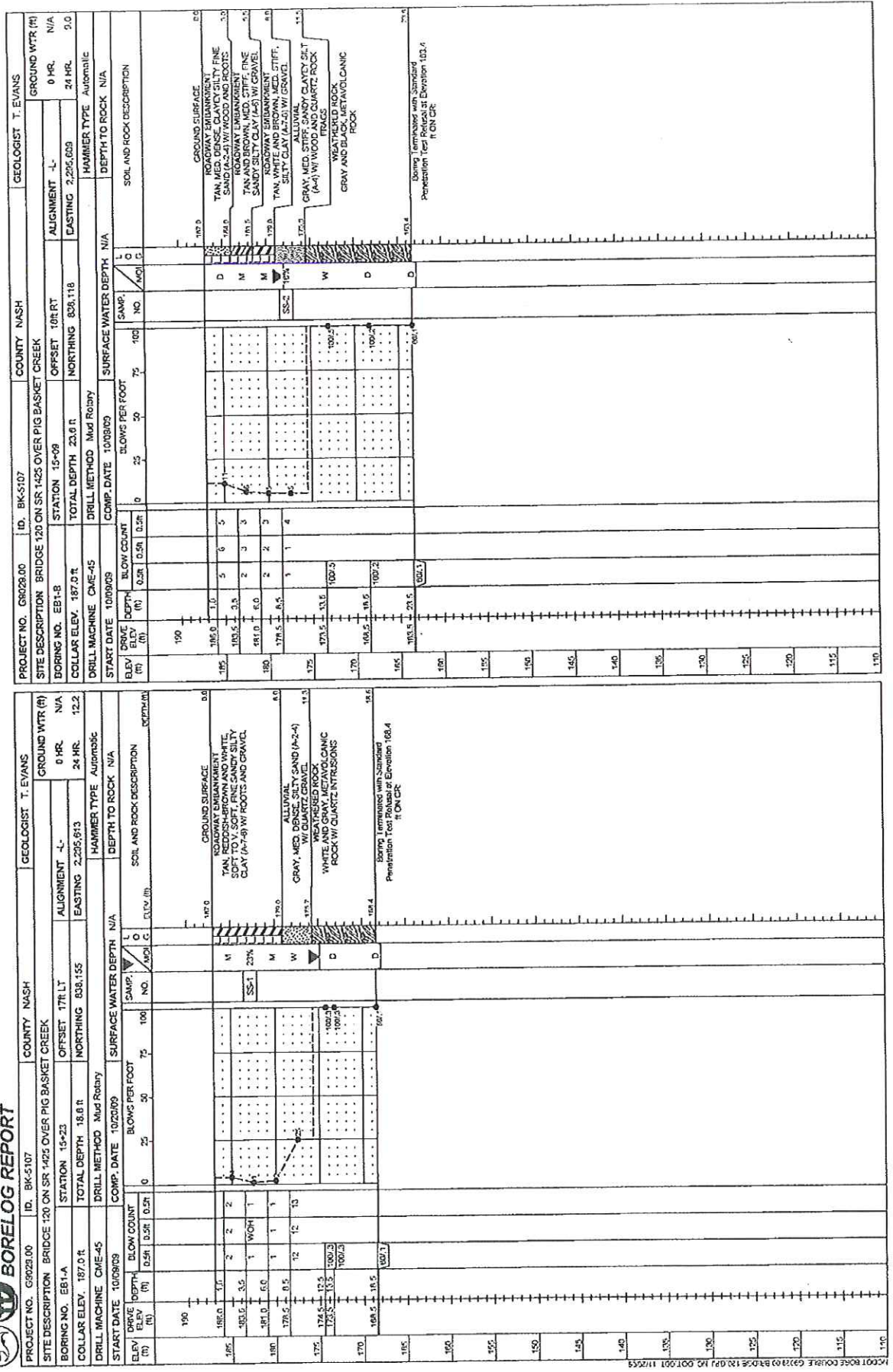






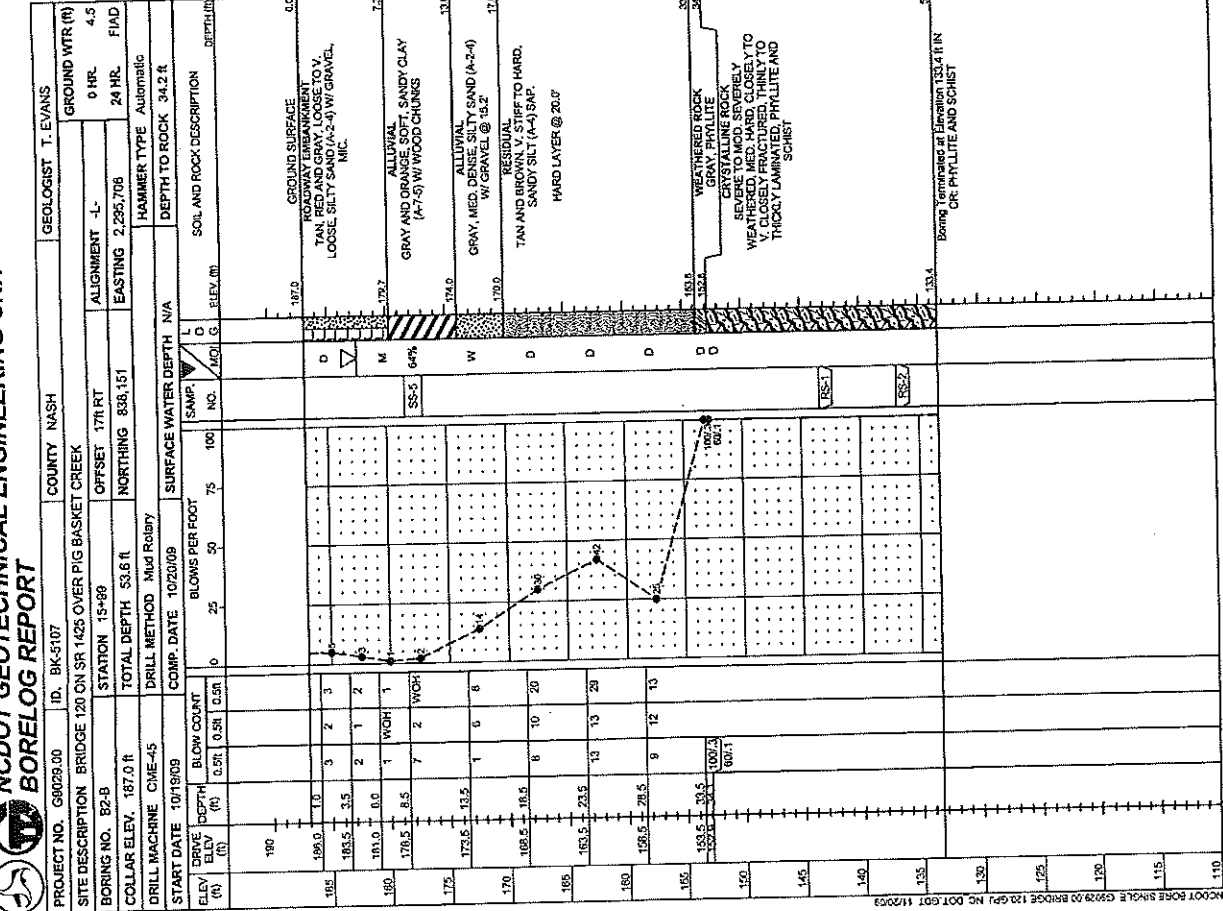


NC DOT GEOTECHNICAL ENGINEERING UNIT  
BORELOG REPORT

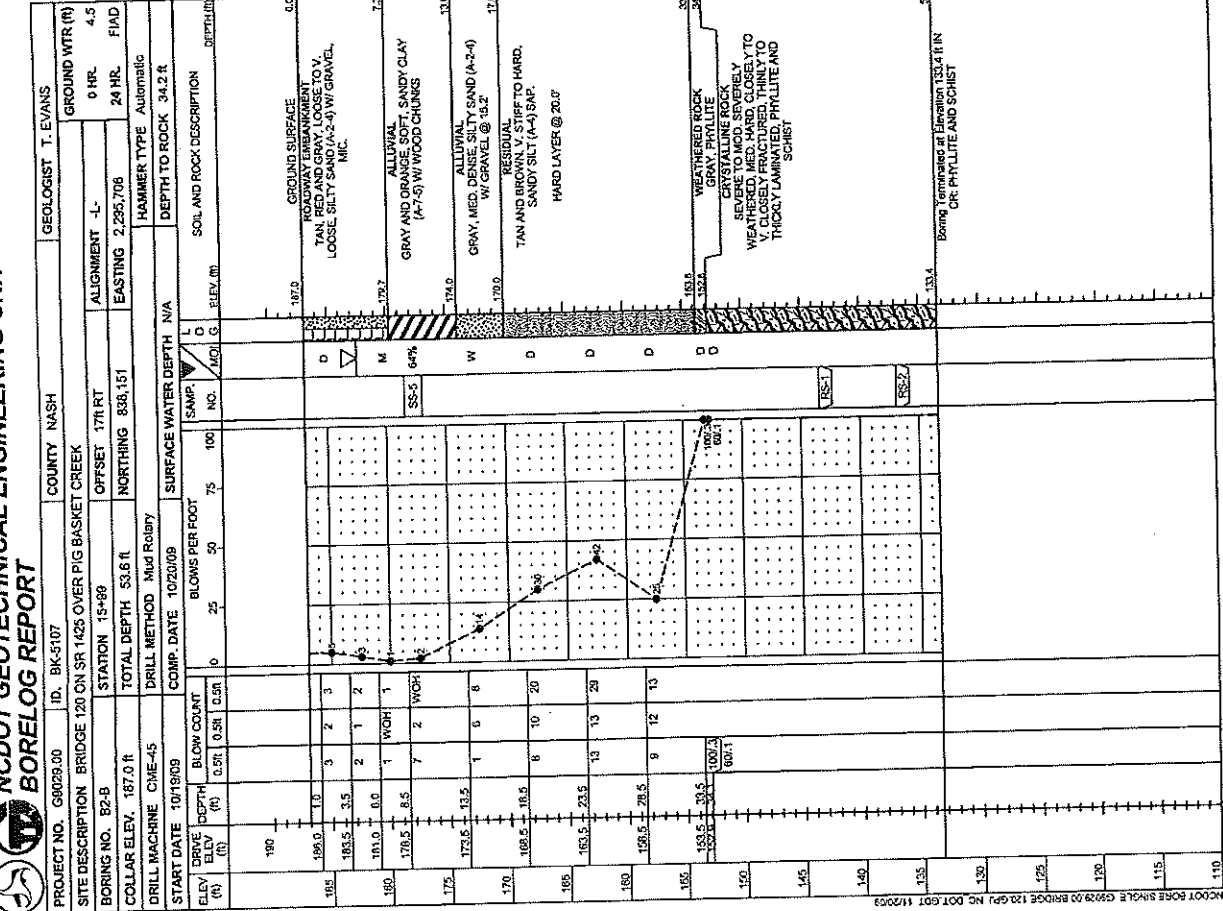




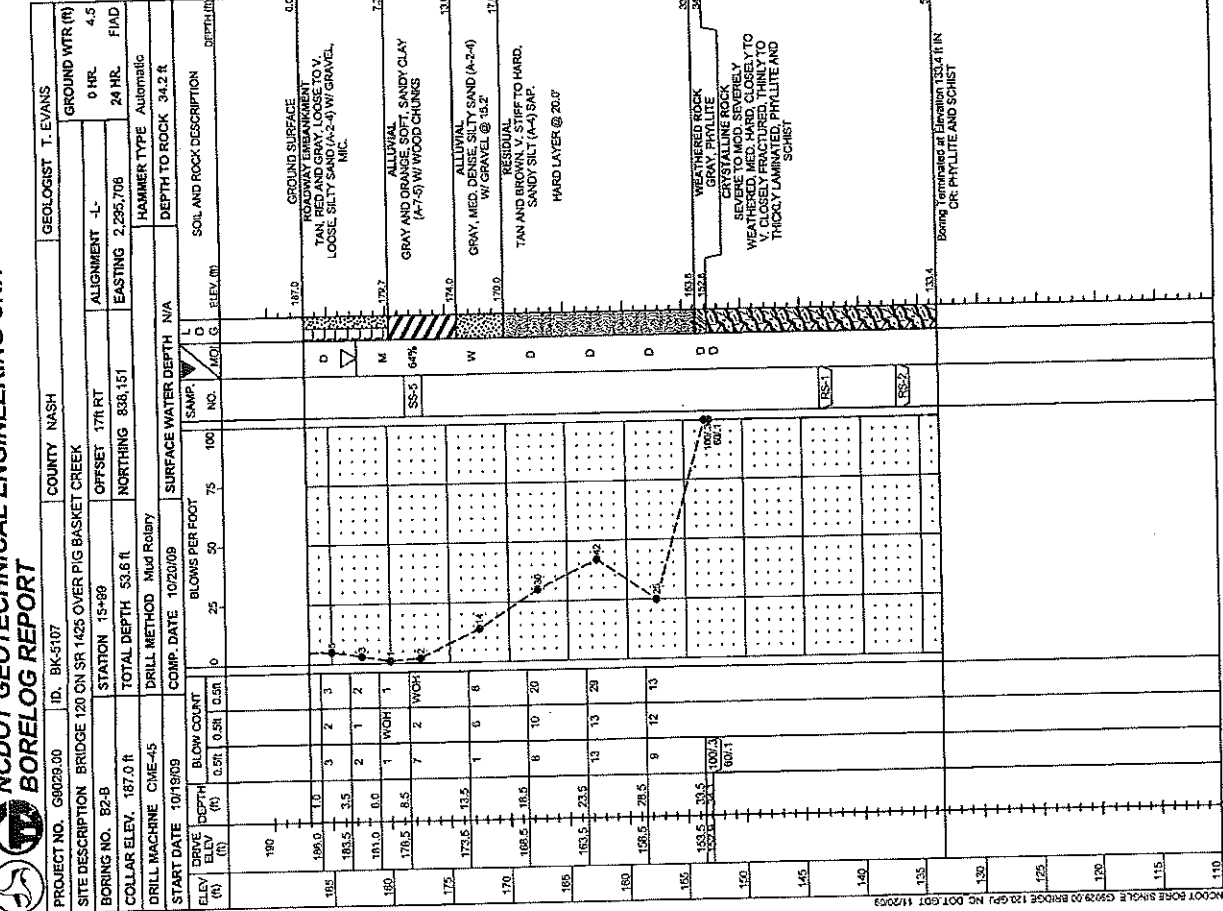
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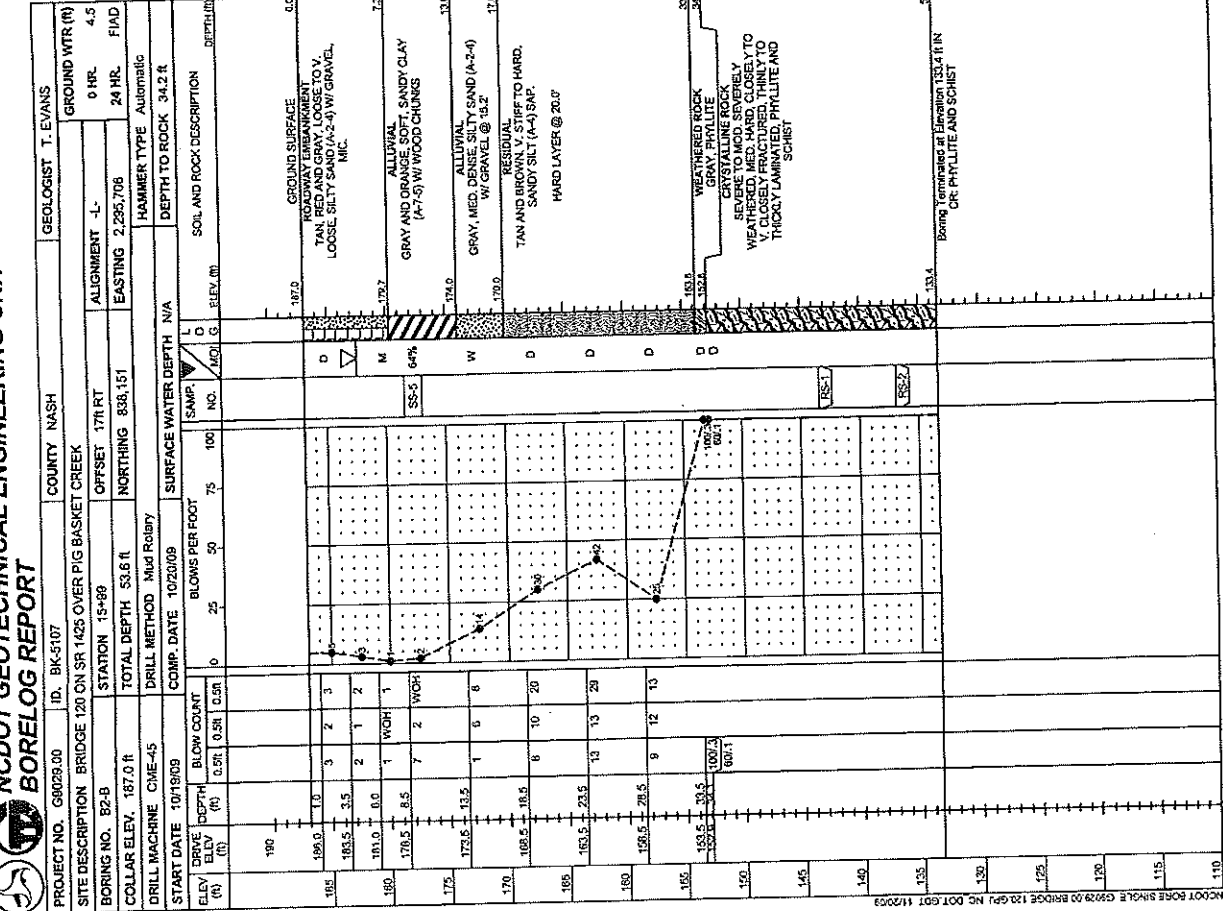
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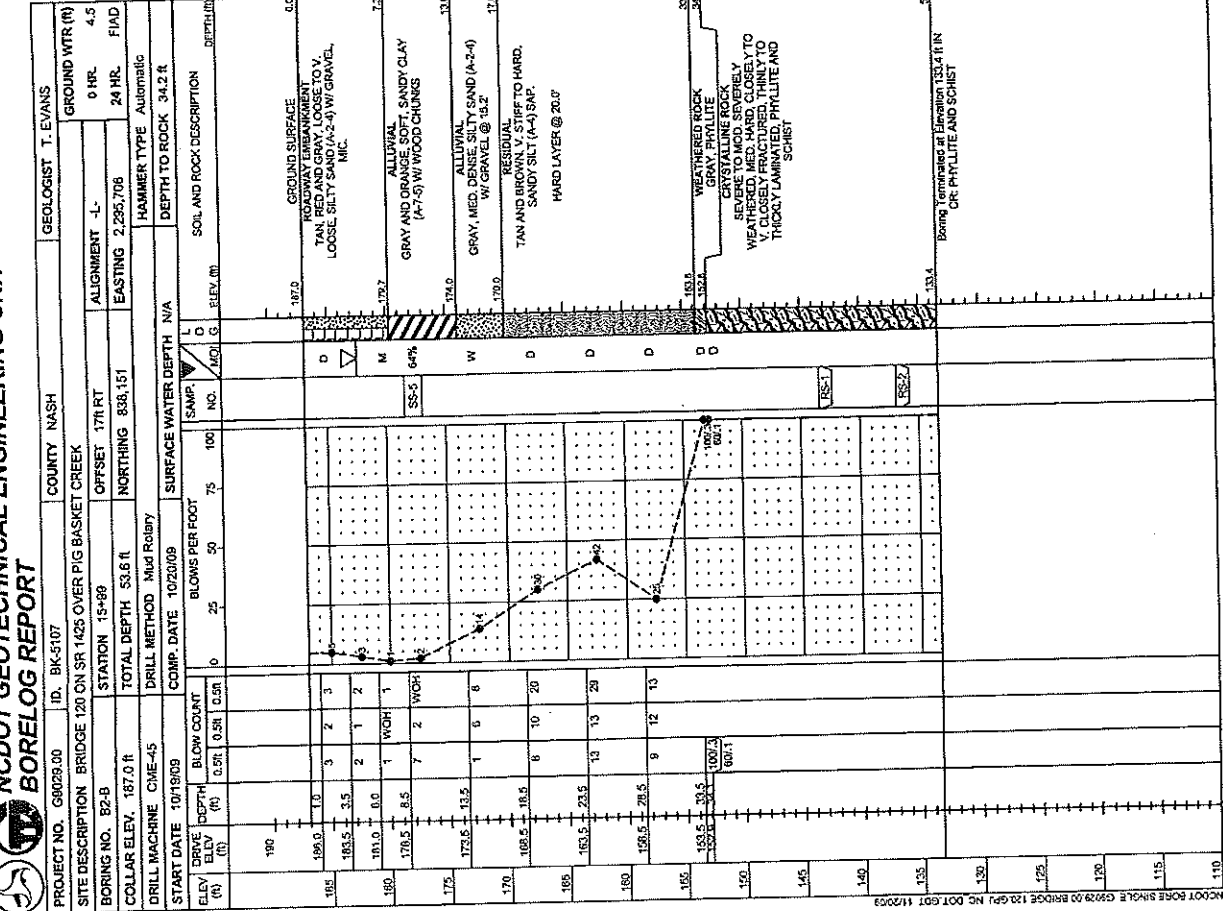
# NC DOT GEOTECHNICAL ENGINEERING UNIT CORE BORING REPORT



# NC DOT GEOTECHNICAL ENGINEERING UNIT CORE BORING REPORT



# NC DOT GEOTECHNICAL ENGINEERING UNIT CORE BORING REPORT





NCDOT GEOTECHNICAL ENGINEERING UNIT  
BORELOG REPORT

PROJECT NO. G9029.00		ID. BK-5107		COUNTY NASH		GEOLOGIST T. EVANS	
SITE DESCRIPTION BRIDGE 120 ON SR 1425 OVER PIG BASKET CREEK		STATION 16+49		OFFSET 171 LT		ALIGNMENT -L-	
BORING NO. EB2-A		TOTAL DEPTH 17.1 ft		NORTHING 838,200		EASTING 2,295,744	
COLLAR ELEV. 187.0 ft		TOTAL DEPTH 17.1 ft		NORTHING 838,200		EASTING 2,295,744	
DRILL MACHINE CME-45		DRILL METHOD Mud Rotary		SURFACE WATER DEPTH N/A		HAMMER TYPE Automatic	
START DATE 10/12/09		COMP. DATE 10/20/09		SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A	
ELEV. (ft)	DEPTH (ft)	BLOW COUNT		SAMP. NO.	BLOWS PER FOOT	L MOI. G.	O ELEV. (ft)
		0.5ft	1.0ft				
180	180.0	3	3	3	...		187.0
185	185.5	1	1	1	...		187.0
190	191.0	1	1	1	...		187.0
195	196.5	2	2	2	...		187.0
200	202.0	3	3	3	...		187.0
205	207.5	3	3	3	...		187.0
210	213.0	3	3	3	...		187.0
215	218.5	3	3	3	...		187.0
220	224.0	3	3	3	...		187.0
225	229.5	3	3	3	...		187.0
230	235.0	3	3	3	...		187.0
235	240.5	3	3	3	...		187.0
240	246.0	3	3	3	...		187.0
245	251.5	3	3	3	...		187.0
250	257.0	3	3	3	...		187.0
255	262.5	3	3	3	...		187.0
260	268.0	3	3	3	...		187.0
265	273.5	3	3	3	...		187.0
270	279.0	3	3	3	...		187.0
275	284.5	3	3	3	...		187.0
280	290.0	3	3	3	...		187.0
285	295.5	3	3	3	...		187.0
290	301.0	3	3	3	...		187.0
295	306.5	3	3	3	...		187.0
300	312.0	3	3	3	...		187.0
305	317.5	3	3	3	...		187.0
310	323.0	3	3	3	...		187.0
315	328.5	3	3	3	...		187.0
320	334.0	3	3	3	...		187.0
325	339.5	3	3	3	...		187.0
330	345.0	3	3	3	...		187.0
335	350.5	3	3	3	...		187.0
340	356.0	3	3	3	...		187.0
345	361.5	3	3	3	...		187.0
350	367.0	3	3	3	...		187.0
355	372.5	3	3	3	...		187.0
360	378.0	3	3	3	...		187.0
365	383.5	3	3	3	...		187.0
370	389.0	3	3	3	...		187.0
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395	416.5	3	3	3	...		187.0
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405	427.5	3	3	3	...		187.0
410	433.0	3	3	3	...		187.0
415	438.5	3	3	3	...		187.0
420	444.0	3	3	3	...		187.0
425	449.5	3	3	3	...		187.0
430	455.0	3	3	3	...		187.0
435	460.5	3	3	3	...		187.0
440	466.0	3	3	3	...		187.0
445	471.5	3	3	3	...		187.0
450	477.0	3	3	3	...		187.0
455	482.5	3	3	3	...		187.0
460	488.0	3	3	3	...		187.0
465	493.5	3	3	3	...		187.0
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715	768.5	3	3	3	...		187.0
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745	801.5	3	3	3	...		187.0
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765	823.5	3	3	3	...		187.0
770	829.0	3	3	3	...		187.0
775	834.5	3	3	3	...		187.0
780	840.0	3	3	3	...		187.0
785	845.5	3	3	3	...		187.0
790	851.0	3	3	3	...		187.0
795	856.5	3	3	3	...		187.0
800	862.0	3	3	3	...		187.0
805	867.5	3	3	3	...		187.0
810	873.0	3	3	3	...		187.0
815	878.5	3	3	3	...		187.0
820	884.0	3	3	3	...		187.0
825	889.5	3	3	3	...		187.0
830	895.0	3	3	3	...		187.0
835	900.5	3	3	3	...		187.0
840	906.0	3	3	3	...		187.0
845	911.5	3	3	3	...		187.0
850	917.0	3	3	3	...		187.0
855	922.5	3	3	3	...		187.0
860	928.0	3	3	3	...		187.0
865	933.5	3	3	3	...		187.0
870	939.0	3	3	3	...		187.0
875	944.5	3	3	3	...		187.0
880	950.0	3	3	3	...		187.0
885	955.5	3	3	3	...		187.0
890	961.0	3	3	3	...		187.0
895	966.5	3	3	3	...		187.0
900	972.0	3	3	3	...		187.0
905	977.5	3	3	3	...		187.0
910	983.0	3	3	3	...		187.0
915	988.5	3	3	3	...		187.0
920	994.0	3	3	3	...		187.0
925	999.5	3	3	3	...		187.0
930	1005.0	3	3	3	...		187.0
935	1010.5	3	3	3	...		187.0
940	1016.0	3	3	3	...		187.0
945	1021.5	3	3	3	...		187.0
950	1027.0	3	3	3	...		187.0
955	1032.5	3	3	3	...		187.0
960	1038.0	3	3	3	...		187.0
965	1043.5	3	3	3	...		187.0
970	1049.0	3	3	3	...		187.0
975	1054.5	3	3	3	...		187.0
980	1060.0	3	3	3	...		187.0
985	1065.5	3	3	3	...		187.0
990	1071.0	3	3	3	...		187.0
995	1076.5	3	3	3	...		187.0
1000	1082.0	3	3	3	...		187.0
1005	1087.5	3	3	3	...		187.0
1010	1093.0	3	3	3	...		187.0
1015	1098.5	3	3	3	...		187.0
1020	1104.0	3	3	3	...		187.0
1025	1109.5	3	3	3	...		187.0
1030	1115.0	3	3	3	...		187.0
1035	1120.5	3	3	3	...		187.0
1040	1126.0	3	3	3	...		187.0
1045	1131.5	3	3	3	...		187.0
1050	1137.0	3	3	3	...		187.0
1055	1142.5	3	3	3	...		187.0
1060	1148.0	3	3	3	...		187.0
1065	1153.5	3	3	3	...		187.0
1070	1159.0	3	3	3	...		187.0
1075	1164.5	3	3	3	...		187.0
1080	1170.0	3	3	3	...		187.0
1085	1175.5	3	3	3	...		187.0
1090	1181.0	3	3	3	...		187.0
1095	1186.5	3	3	3	...		187.0
1100	1192.0	3	3	3	...		187.0

PROJECT NO. G9029.00		ID. BK-5107		COUNTY NASH		GEOLOGIST T. EVANS	
SITE DESCRIPTION BRIDGE 120 ON SR 1425 OVER PIG BASKET CREEK							
BORING NO. EBD-8		STATION 16+34		OFFSET 17H RT		ALIGNMENT -L-	
COLLAR ELEV. 187.0 ft		TOTAL DEPTH 20.6 ft		NORTHING 838,183		EASTING 2,295,741	
DRILL MACHINE CME-45		DRILL METHOD Mud Rotary		SURFACE WATER DEPTH N/A		HAMMER TYPE Automatic	
START DATE 10/09/09		COMP. DATE 10/09/09		SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A	
DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft 0.5ft 0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP NO.	DIAGRAM	SOIL AND ROCK DESCRIPTION	
187.0	1.0	2	3	2		GROUND SURFACE	
186.5	3.5	1	1	1		ROADWAY EMBANKMENT	
181.0	6.0	1	1	1		BROWN, MED. STIFF, SANDY SILT (A-4) W/ ORGANICS	
178.5	8.5	2	3	3		ROADWAY EMBANKMENT TAN AND REDDISH-BROWN, SOFT, SILTY SAND/ SILTY CLAY W/ GRAVEL AND ROOTS	
173.5	13.5	7	13	31		ALLUVIAL GRAY AND TAN, MED. STIFF, CLAYEY SANDY SILT (A-4)	
170.0	18.5	17	100/4			RESIDUAL GRAY AND BLUSH-GRAY, DENSE, SILTY SAND (A-2-4) W/ QUARTZ GRAVEL, S&P.	
165.5	20.5	17	100/4			WEATHERED ROCK BLUSH-GRAY, METAVOLCANIC ROCK Boring Terminated with Standard Penetration Test Refused at Elevation 165.4 ft ON CR	







**STANDARD SPECIAL PROVISION****ERRATA**

(7-21-09)

Z-4

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

**Division 1**

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

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

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

**Division 2**

Page 2-9, Subarticle 225-1(C), 1<sup>st</sup> paragraph, 2<sup>nd</sup> line, last word, add a "d" to make the word grade become *graded*.

Page 2-15, Subarticle 226-3, 5th paragraph, first line, replace the word *in* with the word *is*.

Page 2-23, Subarticle 235-4(B)(9), at the end of the sentence, replace finished greater with finished *grade*.

Page 2-28, Article 260-3, First paragraph, second line, remove the word *foot*.

**Division 3**

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

**Division 4**

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

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

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

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

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

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

Page 4-80, change Pay Item \_\_\_ Steel Pile Retaining Walls, to *Sheet* Pile Retaining Walls.

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

**Division 5**

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

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

### Division 6

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

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

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

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

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

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

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

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

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

Item	Section
<b><i>Hot Applied Joint Sealer</i></b>	<b><i>1028-2</i></b>

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

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

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

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

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

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

### Division 7

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

Page 7-15, Article 710-9, 4th paragraph, last line, change 710-11(B) to 710-10(B).

### Division 8

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

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

**Division 9**

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

**Division 10**

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

Page 10-28, at the top of the page, substitute Section 1006 for 1005.

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

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

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

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

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

Type 1	Type 2	Type 3		Type 4
		Class A	Class B	Soil Stabilization
<b>45 lb</b>	<b>75 lb</b>	--	--	<b>75 lb</b>

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

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

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

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

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

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

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

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

**Division 12**

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

**Division 14**

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

**Division 15**

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

**Division 16**

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

**Division 17**

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

**END**

## MINIMUM WAGES

(7-21-09)

Z-5

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

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

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

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

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

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

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

## 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 grounds of race, color, or national origin.



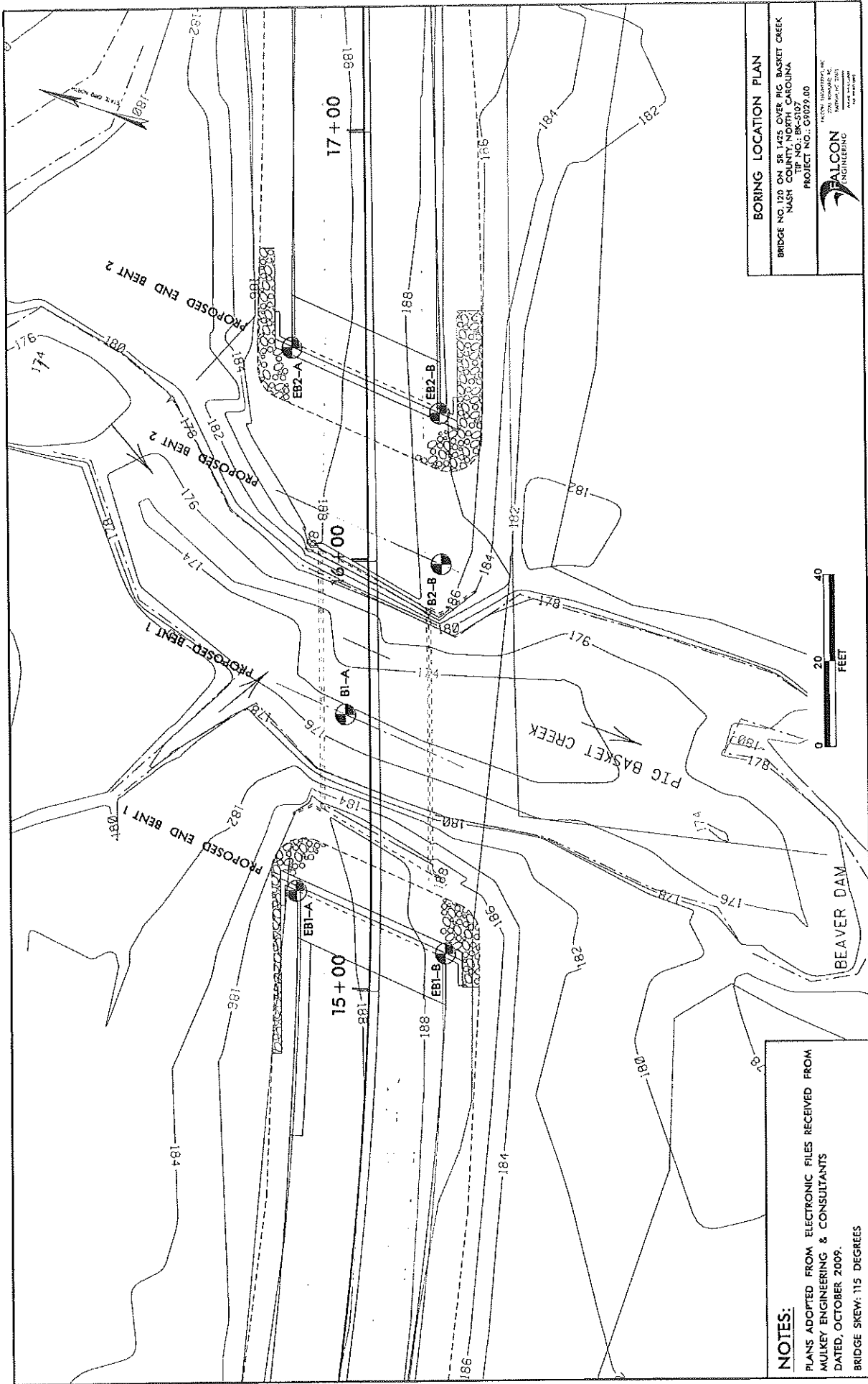
## **ATTACHMENT B**

### **GEOTECHNICAL BORING LOGS**

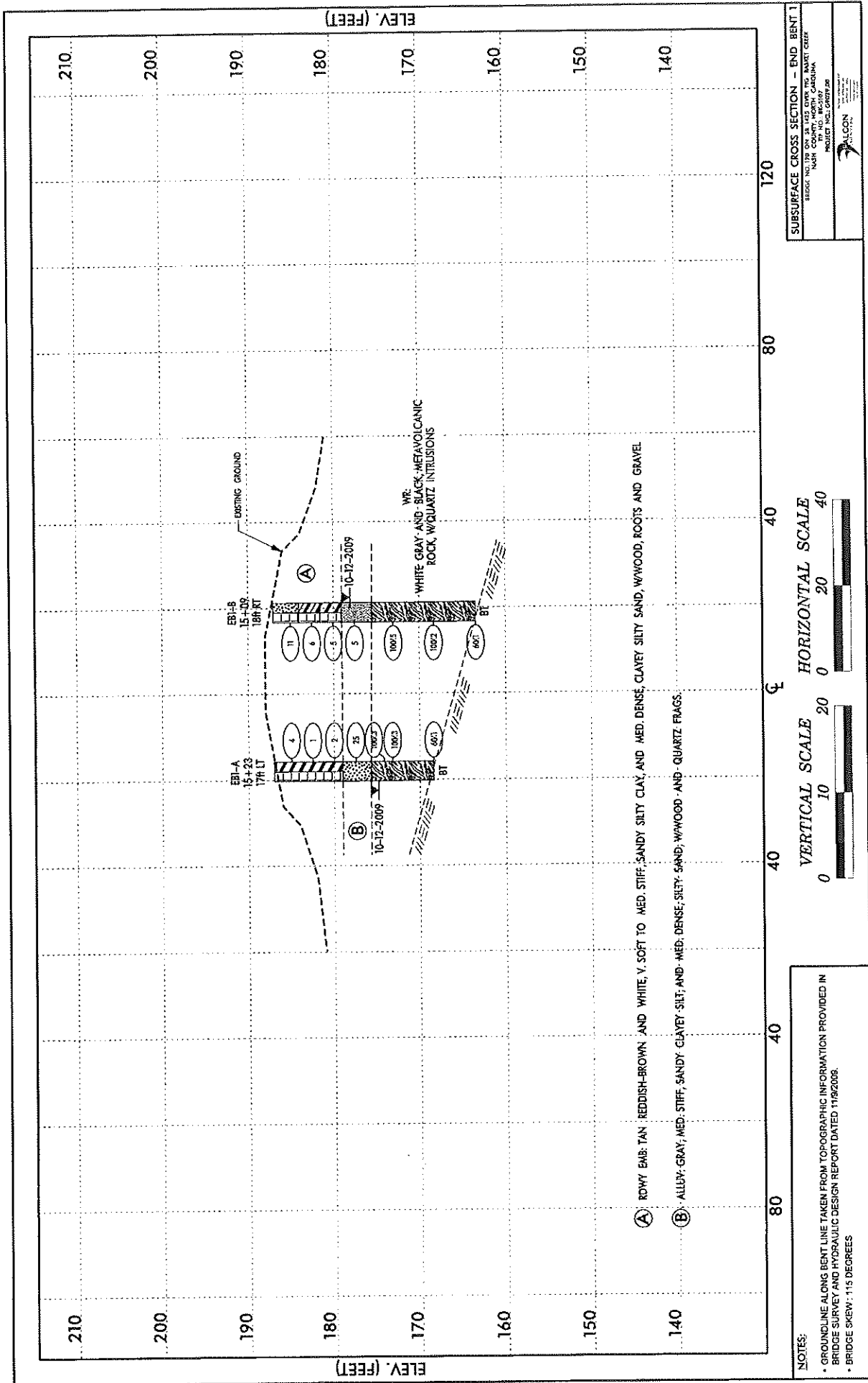
**The following Geotechnical Boring Logs are for information only and are not a part of this contract. These information are for investigation only and no accuracy is implied or guaranteed. No claim will be allowed as a result of the use of this information.**





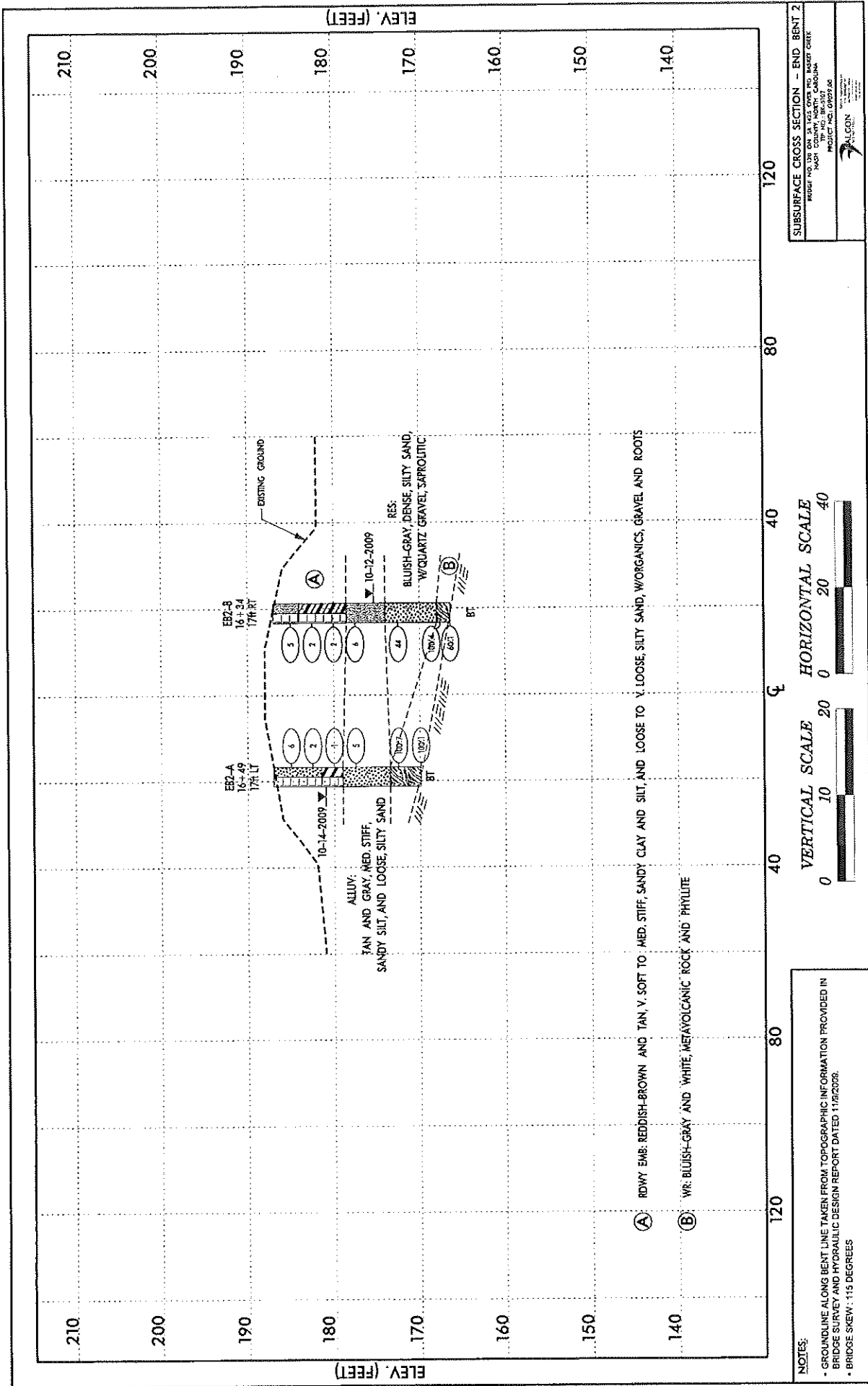






**SUBSURFACE CROSS SECTION - END BENT 1**  
 BRIDGE NO. 119 ON 34<sup>TH</sup> ST. OVER I-5 AND I-10  
 NORTH  
 DATE: 11/9/2008  
 PROJECT NO. 80-0107  
 PROJECT NAME: GAVIN  
 SCALE: 1" = 10' VERTICALLY  
 1" = 40' HORIZONTALLY

**NOTES:**  
 • GROUNDLINE ALONG BENT LINE TAKEN FROM TOPOGRAPHIC INFORMATION PROVIDED IN  
 BRIDGE SURVEY AND HYDRAULIC DESIGN REPORT DATED 11/9/2008.  
 • BRIDGE SKEW: 115 DEGREES



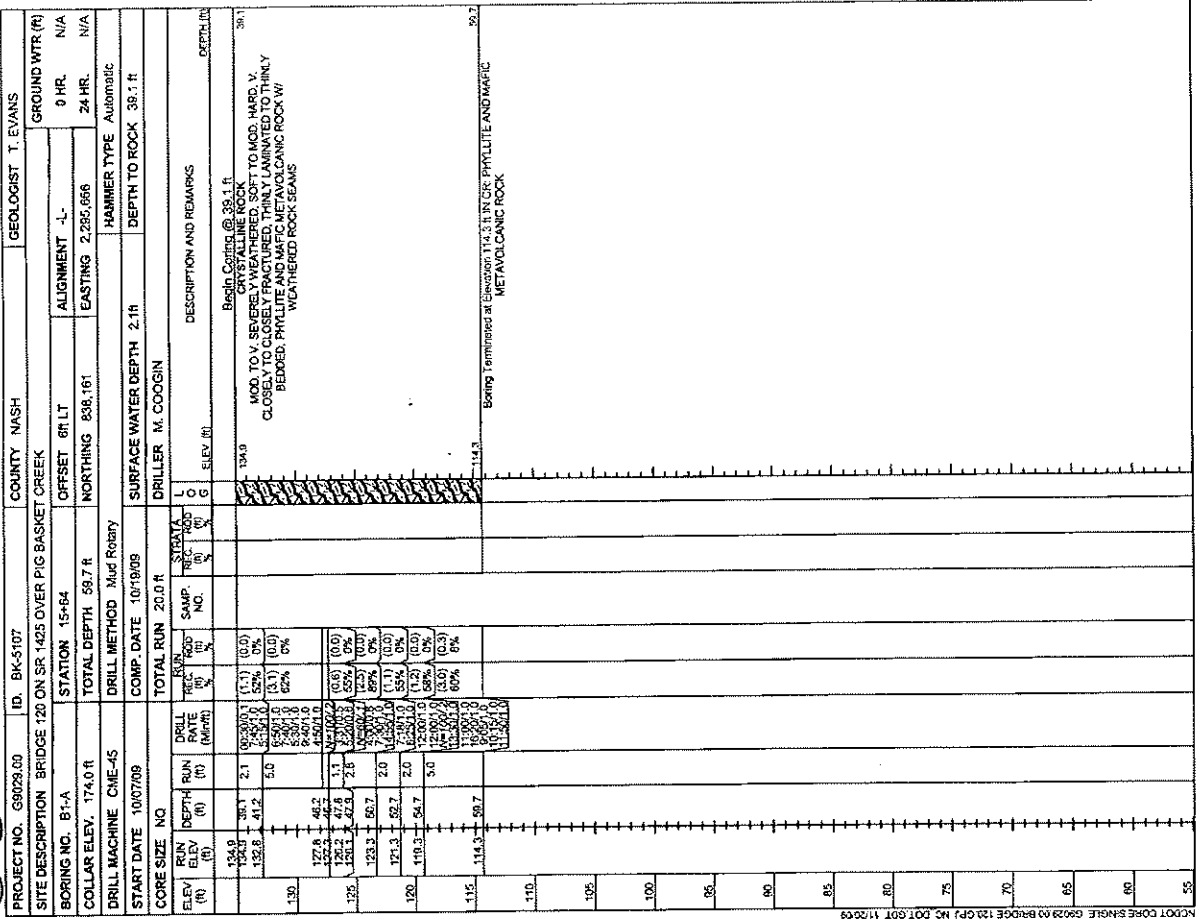
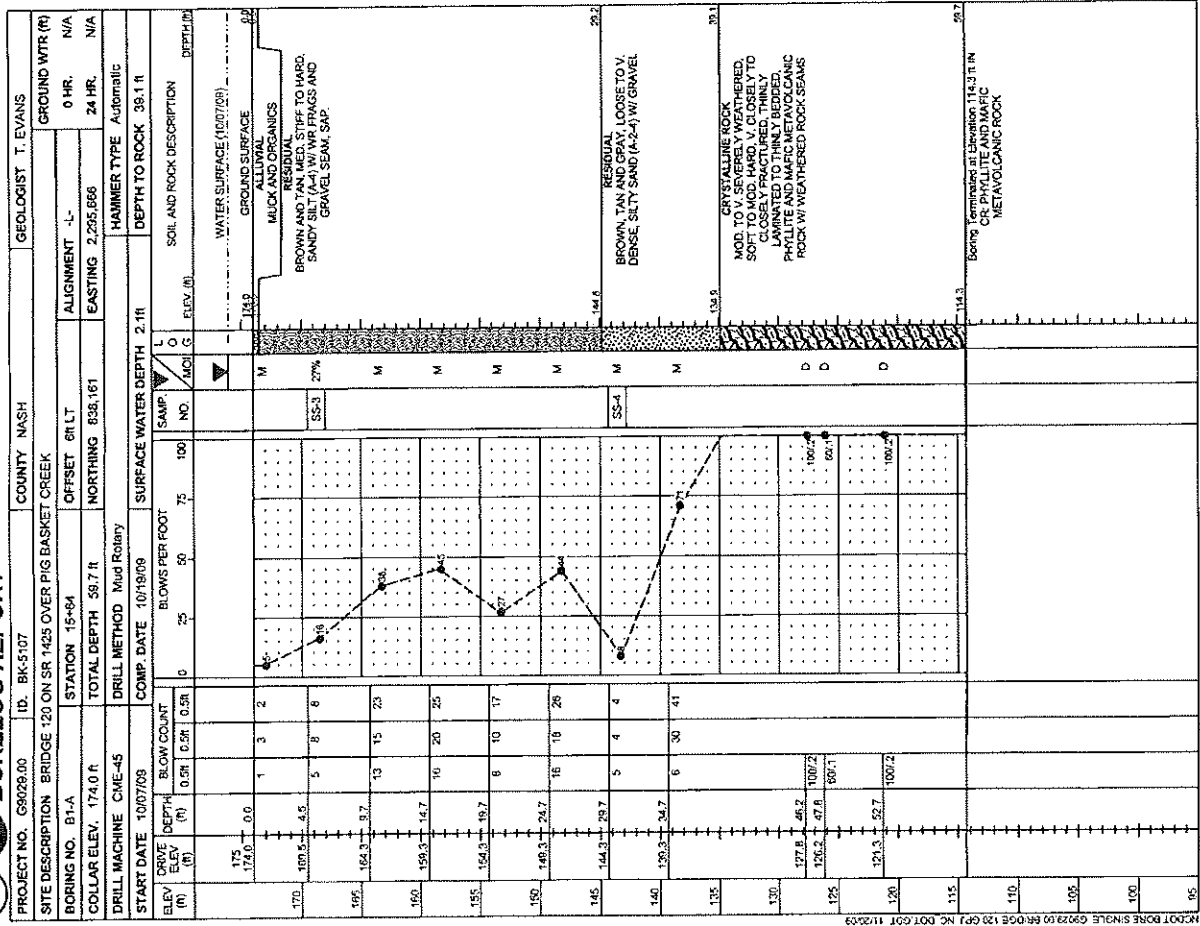
BORELOG REPORT

PROJECT NO. G8029.00				ID. BK-5107				COUNTY NASH				GEOLOGIST T. EVANS			
SITE DESCRIPTION BRIDGE 120 ON SR 1425 OVER PIG BASKET CREEK															
BORING NO. EB1-A				STATION 15+23				OFFSET 17R LT				ALIGNMENT -L-			
COLLAR ELEV. 187.0 ft				TOTAL DEPTH 18.6 ft				NORTHING 838,155				EASTING 2,295,613			
DRILL MACHINE CME-45				DRILL METHOD Mud Rotary				COMPT. DATE 10/20/09				HAMMER TYPE Automatic			
START DATE 10/09/09				COMP. DATE 10/20/09				SURFACE WATER DEPTH N/A				DEPTH TO ROCK N/A			
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			SAMP. NO.	BLOWS PER FOOT	L	O	D	SOIL AND ROCK DESCRIPTION	SAMP.	NO.	MOI	G
			0.5ft	0.5ft	0.5ft										
190											GROUND SURFACE				0.0
185	186.0	1.0	2	2	2						ROADWAY EMBANKMENT				3.0
	183.5	3.5	1	WOH	1						TAN, MED. DENSE, CLAYEY SILTY FINE SAND (A-2-4) W/ WOOD AND ROOTS				3.0
180	181.0	6.0	1								ROADWAY EMBANKMENT				5.0
	178.5	8.5	1	1	1						TAN, WHITE AND BROWN, MED. STIFF, SILTY CLAY (A-2-6) W/ GRAVEL				8.0
175	173.5	13.5	12	12	13						ROADWAY EMBANKMENT				11.0
	171.0	16.0	100.3								GRAY, MED. STIFF, CLAYEY SILT (A-4) W/ WOOD AND QUARTZ ROCK FRAGS				11.0
170	168.5	18.5	100.2								WEATHERED ROCK				11.0
165	165.5	23.5	100.1								GRAY AND BLACK, METAVOLCANIC ROCK				11.0
160															11.0
155															11.0
150															11.0
145															11.0
140															11.0
135															11.0
130															11.0
125															11.0
120															11.0
115															11.0
110															11.0
Boring Terminated with Standard Penetration Test at Elevation 168.4 ft ON GR.															

PROJECT NO. G8029.00				ID. BK-5107				COUNTY NASH				GEOLOGIST T. EVANS			
SITE DESCRIPTION BRIDGE 120 ON SR 1425 OVER PIG BASKET CREEK															
BORING NO. EB1-B				STATION 15+09				OFFSET 18R RT				ALIGNMENT -L-			
COLLAR ELEV. 187.0 ft				TOTAL DEPTH 23.6 ft				NORTHING 838,118				EASTING 2,295,609			
DRILL MACHINE CME-45				DRILL METHOD Mud Rotary				COMPT. DATE 10/09/09				HAMMER TYPE Automatic			
START DATE 10/09/09				COMP. DATE 10/09/09				SURFACE WATER DEPTH N/A				DEPTH TO ROCK N/A			
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			SAMP. NO.	BLOWS PER FOOT	L	O	D	SOIL AND ROCK DESCRIPTION	SAMP.	NO.	MOI	G
			0.5ft	0.5ft	0.5ft										
190											GROUND SURFACE				0.0
185	186.0	1.0									ROADWAY EMBANKMENT				3.0
	183.5	3.5									TAN, MED. DENSE, CLAYEY SILTY FINE SAND (A-2-4) W/ WOOD AND ROOTS				3.0
180	181.0	6.0									ROADWAY EMBANKMENT				5.0
	178.5	8.5									TAN, WHITE AND BROWN, MED. STIFF, SILTY CLAY (A-2-6) W/ GRAVEL				8.0
175	173.5	13.5									ROADWAY EMBANKMENT				11.0
	171.0	16.0									GRAY, MED. STIFF, CLAYEY SILT (A-4) W/ WOOD AND QUARTZ ROCK FRAGS				11.0
170	168.5	18.5									WEATHERED ROCK				11.0
165	165.5	23.5									GRAY AND BLACK, METAVOLCANIC ROCK				11.0
160															11.0
155															11.0
150															11.0
145															11.0
140															11.0
135															11.0
130															11.0
125															11.0
120															11.0
115															11.0
110															11.0
Boring Terminated with Standard Penetration Test at Elevation 162.4 ft ON GR.															

**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**CORE BORING REPORT**



**ATTACHMENT C**

**FHWA SPECIAL PROVISIONS**

**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 AreasArea 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

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Goals for FemaleParticipation in Each Trade

(Statewide) 6.9%

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

FHWA - 1273 Electronic Version - March 10, 1994

Z-8

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**ATTACHMENTS**

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

**I. GENERAL**

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

**II. NONDISCRIMINATION**

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

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

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.
3. **Dissemination of Policy:** All members of the contractor's staff who are to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual will be taken as a minimum:
  - a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.
  - b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
  - c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.
  - d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
  - e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.
  - a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.
  - b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)
  - c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.
5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:
  - a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
  - b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
  - c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
  - d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.
6. **Training and Promotion:**
  - a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.
  - b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.
  - c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
  - d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.
7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:
  - a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
  - b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
  - c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such

information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.

- d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.
8. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.
  - a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.
  - b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.
  - c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.
9. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.
  - a. The records kept by the contractor shall document the following:
    1. The number of minority and non-minority group members and women employed in each work classification on the project;
    2. The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;
    3. The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and
    4. The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.
  - b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the job training is being required by special provision, the contractor will be required to collect and report training data.

### III. NONSEGREGATED FACILITIES

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

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

### IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

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

#### 1. General:

- a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section

1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

- b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.
- c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. **Classification:**

- a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.
- b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:
  - 1. the work to be performed by the additional classification requested is not performed by a classification in the wage determination;
  - 2. the additional classification is utilized in the area by the construction industry;
  - 3. the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and
  - 4. with respect to helpers, when such a classification prevails in the area in which the work is performed.
- c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. **Payment of Fringe Benefits:**

- a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.
- b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. **Apprentices and Trainees (Programs of U.S. DOL) and Helpers:**

- a. **Apprentices:**
  - 1. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.
  - 2. The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.
  - 3. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the

apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

4. In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. **Trainees:**

1. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.
2. The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.
3. Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.
4. In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. **Helpers:**

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under an approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. **Apprentices and Trainees (Programs of the U.S. DOT):**

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. **Withholding:**

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. **Overtime Requirements:**

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. **Violation:**

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. **Withholding for Unpaid Wages and Liquidated Damages:**

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the

Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

## V. STATEMENTS AND PAYROLLS

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

### 1. Compliance with Copeland Regulations (29 CFR 3):

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

### 2. Payrolls and Payroll Records:

- a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.
- b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof of the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.
- c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.
- d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
  1. that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;
  2. that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;
  3. that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.
- f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.
- g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

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

## VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).
  - a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.



- b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.
2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.
3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.
4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

#### VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.
2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).
3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

#### IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

##### NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

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

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

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

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

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

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

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

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

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 *et seq.*, as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 *et seq.*, as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.
3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.
4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

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

1. **Instructions for Certification - Primary Covered Transactions:**  
(Applicable to all Federal-aid contracts - 49 CFR 29)
  - a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
  - b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
  - c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.
  - d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
  - e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.
  - f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
  - g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
  - h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.
  - i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
  - j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

\*\*\*\*\*

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

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
  - a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
  - b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and
  - d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

\* \* \* \* \*

**2. Instructions for Certification - Lower Tier Covered Transactions:**

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

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

\* \* \* \* \*

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

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

\* \* \* \* \*

**XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

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

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

**STANDARD SPECIAL PROVISION****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/](http://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****GENERAL DECISION NC20100010 03/12/2010 NC10**

Z-11

Date: March 12, 2010

General Decision Number NC20100010 03/12/2010

Superseded General Decision No. NC20080010

State: North Carolina

Construction Type: HIGHWAY

**COUNTIES:**

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

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

Modification Number  
0

Publication Date  
03/12/2010

SUNC1990-002 02/12/1990

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



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

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

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

#### WAGE DETERMINATION APPEALS PROCESS

- 1.) Has there been an initial decision in the matter? This can be:
  - \* an existing published wage determination
  - \* a survey underlying a wage determination
  - \* a Wage and Hour Division letter setting forth a position on a wage determination matter
  - \* a conformance (additional classification and rate) ruling

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

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

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

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

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

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

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

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

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

END OF GENERAL DECISION

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

Z-12

Date: March 12, 2010

General Decision Number NC20100011 03/12/2010

Superseded General Decision No. NC20080011

State: North Carolina

Construction Type: HIGHWAY

**COUNTIES:**

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

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

Modification Number  
0

Publication Date  
03/12/2010

SUNC1990-014 02/12/1990

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

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

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

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

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

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

## WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

END OF GENERAL DECISION

**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.

**SUBMISSION OF BIDS - ALTERNATES:**

(7-15-08)

SP1 G91

The *2006 Standard Specifications* are revised as follows:

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

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

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

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

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

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

(1-20-09)

SP1G59

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

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

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

**SUBMISSION OF RECORDS - FEDERAL-AID PROJECTS:**

(7-17-07)

SP1 G103

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

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

**U.S. DEPARTMENT OF TRANSPORTATION HOTLINE:**

(11-22-94)

SP1 G100

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

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

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

**ATTACHMENT D**

**Bid Sheet and Execution of Contract**





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

Line #	ITEM NUMBER	Section #	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT BID PRICE	AMOUNT BID
1	0000100000-N	800	MOBILIZATION	1	LS		
2	0248000000-N	SP	GENERIC GRADING ITEM (EXCAVATION AND EMBANKMENT)	1	LS		
3	0366000000-E	310	15" RC PIPE CULVERTS, CLASS III	104	LF		
4	1489000000-E	610	ASPHALT CONC BASE COURSE B25.0B	250	TON		
5	1498000000-E	610	ASPHALT CONC BASE COURSE I19.0B	280	TON		
6	1519000000-E	610	ASPHALT CONC SURF COURSE S9.5B	460	TON		
7	1560000000-E	620	ASPHALT FOR PLANT MIX PG64-22	55	TON		
8	2286000000-N	840	MASONRY DRAINAGE STRUCTURE	2	EA		
9	2367000000-N	840	FRAME WITH TWO GRATES, STD 840.29	2	EA		
10	2556000000-E	846	SHOULDER BERM GUTTER	80	LF		
11	3030000000-E	862	STEEL BM GUARDRAIL	25	LF		
12	3270000000-N	SP	GR ANCHOR UNITS, TYPE 350	4	EA		
13	3317000000-N	862	GR ANCHOR UNITS, TYPE B-77	4	EA		
14	3649000000-E	876	RIP RAP, CLASS B	1	TON		
15	6000000000-E	1605	TEMPORARY SILT FENCE	1900	LF		
16	6006000000-E	1610	STONE FOR EROSION CONT., CLASS A	175	TON		
17	6009000000-E	1610	STONE FOR EROSION CONT., CLASS B	15	TON		
18	6012000000-E	1610	SEDIMENT CONTROL STONE	380	TON		
19	6024000000-E	1622	TEMPORARY SLOPE DRAINS	200	LF		
20	6027000000-N	1622	INLET PROTECTION AT TEMPORARY SLOPE DRAINS	4	EA		
21	6029000000-E	SP	SAFETY FENCE	225	LF		
22	6030000000-E	1630	SILT EXCAVATION	20	CY		
23	6036000000-E	1631	MATTING FOR EROSION CONTROL	45	SY		
24	6042000000-E	1632	1/4" HARDWARE CLOTH	500	LF		
25	6070000000-E	SP	SPECIAL STILLING BASINS	12	EA		
26	6071010000-E	SP	WATTLE	25	LF		
27	6071020000-E	SP	POLYACRYLAMIDE (PAM)	5	LB		
28	6133000000-N	SP	GENERIC EROSION CONTROL ITEM	1	LS		
29	8017000000-N	SP	CONST., MAINT., & REM. OF TEMP. ACCESS	1	LS		
30	8035000000-N	402	REM OF EXIST STR. AT STA. 15+78.95	1	LS		
31	8105540000-E	SP	3'-6" DIA DRILLED PIER IN SOIL	237	LF		
32	8105640000-E	SP	3'-6" DIA DRILLED PIER NOT IN SOIL	84	LF		
33	8111400000-E	SP	PERM STEEL CASING FOR 3'-6" DIA DRILLED PIER	111	LF		



34	8113000000-N	SP	SID INSPECTION	1	EA	_____	_____
35	8115000000-N	SP	CROSSHOLE SONIC LOGGING	1	EA	_____	_____
36	8210000000-N	422	BRIDGE APPROACH SLAB, STA. 15+78.95	1	LS	_____	_____
37	8365000000-E	SP	HP12X53 GALVANIZED PILES	320	LF	_____	_____
38	8608000000-E	876	RIP RAP II (2'-0")	195	TON	_____	_____
39	8622000000-E	876	FILTER FABRIC FOR DRAINAGE	1372	SY	_____	_____
40	8765000000-N	SP	CONSTRUCTION OF SUBSTRUCTURE	1	LS	_____	_____
41	8766000000-N	SP	CONSTRUCTION OF SUPERSTRUCTURE	1	LS	_____	_____

**TOTAL PROJECT BID** \_\_\_\_\_



**EXECUTION OF PROPOSAL**

DATE: \_\_\_\_\_

In compliance with the foregoing request for proposals and subject to all terms and conditions thereof, the undersigned offers and agrees, if this proposal is accepted, to furnish the services for the prices quoted.

**TOTAL PROJECT BID: \$** \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_ PHONE: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_  
(SIGNATURE)

---

(TYPED OR PRINTED NAME)

CONTRACTOR'S LICENSE NUMBER: \_\_\_\_\_

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

---

**ACCEPTANCE OF PROPOSAL**

AGENCY: N. C. DEPARTMENT OF TRANSPORTATION CITY AND STATE:  
RALEIGH, NORTH CAROLINA

BY: \_\_\_\_\_, STATE BRIDGE MANAGEMENT ENGINEER  
(SIGNATURE)

12/19/89

**\*AWARD LIMITS ON MULTIPLE PROJECTS\***

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

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

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

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

\_\_\_\_\_  
\*\*Signature of Authorized Person

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

**EXECUTION OF CONTRACT  
NON-COLLUSION AFFIDAVIT AND DEBARMENT CERTIFICATION**

**CORPORATION**

The Contractor being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this Contract, and that the Contractor intends to do the work with his own bonafide employees or subcontractors and did not bid for the benefit of another contractor.

By submitting this Execution of Contract, Non-Collusion affidavit and Debarment Certification, the Contractor is certifying his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exception that are applicable.

**SIGNATURE OF CONTRACTOR**

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

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

Attest \_\_\_\_\_  
Secretary/ Assistant Secretary  
Select appropriate title

By \_\_\_\_\_  
President/ Vice President/ Assistant Vice President  
Select appropriate title

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

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

**CORPORATE SEAL**

**AFFIDAVIT MUST BE NOTARIZED**

**NOTARY SEAL**

Subscribed and sworn to before me this the

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

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

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

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

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

## DEBARMENT CERTIFICATION OF CONTRACTOR

### Conditions for certification:

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



Rev 7-20-08

## DEBARMENT CERTIFICATION

The Contractor certifies to the best of its knowledge and belief, that it and its principals:

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

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

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

☐

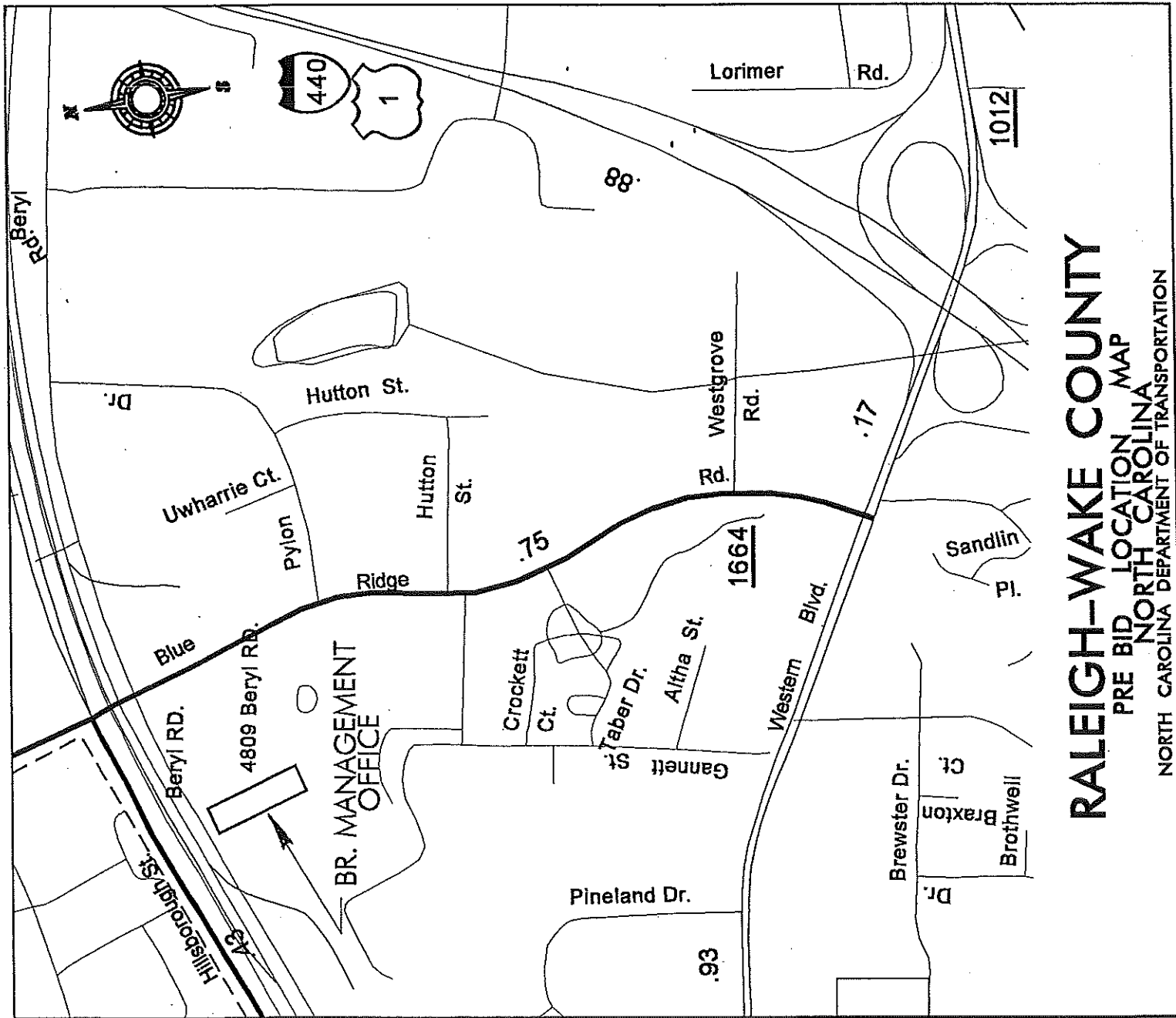
Check here if an explanation is attached to this Certification.



**ATTACHMENT E**  
**Environmental Permit**







# RALEIGH-WAKE COUNTY

PRE BID LOCATION MAP  
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION