-- STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, N.C.

DESIGN-BUILD PACKAGE

VOID FOR BIDDING

DATE AND TIME OF TECHNICAL AND PRICE PROPOSAL SUBMISSION: ~~APRIL 3, 2002~~ MAY 8, 2002 JAG AT 4:00 PM

DATE AND TIME OF PRICE PROPOSAL OPENING: ~~APRIL 19, 2002~~ MAY 24, 2002 JAG AT 10:00 AM

PROJECT NO: 8.1402212 KILOMETERS: 15.51

FEDERAL-AID NO. NHF-64 (73)

CONTRACT ID C200376

COUNTY: WAKE

ROUTE NO: US-64 Knightdale Bypass

T.I.P. NO : R-2547 BB,C and CC

LOCATION: US 64 - KNIGHTDALE BYPASS FROM EAST OF NEW HOPE ROAD TO EXISTING US 64 EAST OF KNIGHTDALE

TYPE OF WORK: DESIGN-BUILD AS SPECIFIED IN THE SCOPE OF WORK CONTAINED IN THE DESIGN-BUILD PACKAGE

NOTICE:

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

_____

5% BID BOND OR BID DEPOSIT REQUIRED

_____

PROPOSAL FORM FOR THE CONSTRUCTION OF PROJECT NO. 8.1402212

IN WAKE COUNTY, NORTH CAROLINA

Date_____ 20___

DEPARTMENT OF TRANSPORTATION,

RALEIGH, NORTH CAROLINA

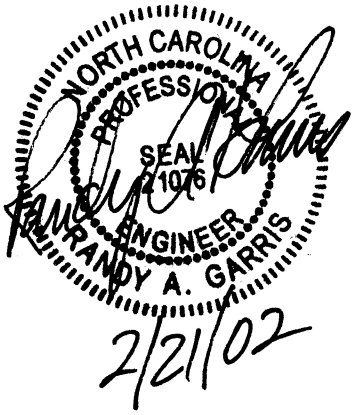
The Design-Builder has carefully examined the location of the proposed work to be known as Project No. 8.1402212; has carefully examined the preliminary plans and specifications, which are acknowledged to be part of the proposal, the special provisions, the Design-Build Package, the form of contract, and the forms of contract payment bond and contract performance bond; and thoroughly understands the stipulations, requirements and provisions. The undersigned Design-Builder agrees to bound upon his execution of the proposal and subsequent award to him by the Board of Transportation in accordance with this proposal to provide the necessary contract payment bond and contract performance bond within fourteen calendar days after the written notice of award is received by him. The undersigned Design-Builder further agrees to provide all design services and all necessary machinery, tools, labor, and other means of construction; and to do all the work and to furnish all materials, except as otherwise noted, necessary to perform and complete the said contract in accordance with the 2002 Standard Specifications for Roads and Structures by the dates(s) specified in the Design-Build Package and in accordance with the requirements of the Engineer, and at the lump sum price(s) for the various items given on the sheets contained herein.

The Design-Builder shall provide a Technical Proposal, a Price Proposal and furnish all the materials, machinery, implements, appliances and tools, and perform the work and required labor to design construct and complete State Highway Project No. 8.1402212 in WAKE county, for the lump sum price(s) bid by the Design-Builder in his Price Proposal and according to the proposal, plans, and specifications prepared by said Department and/or Design-Builder, which proposal, plans, and specifications show the details covering this project, and hereby become a part of this contract.

The published volume entitled "North Carolina Department of Transportation, Raleigh, Standard Specifications for Roads and Structures, JANUARY 2002 with all amendments and supplements thereto, is by reference incorporated into and made a part of this contract; that, except as herein modified, all the Construction and work included in this contract is to be done in accordance with the specifications contained in said volume, and amendments and supplements thereto, under the direction of the Engineer.

If the proposal is accepted and the award is made, the contract is valid only when signed either by the Contract Officer or such other person as may be designated by the Secretary to sign for the Department of Transportation. The conditions and provisions herein cannot be changed except over the signature of the said Contract Officer.

Accompanying this Proposal is a bid bond secured by a corporate surety, or certified check payable to the order of the Department of Transportation, for five percent of the total bid price, which deposit is to be forfeited as liquidated damages in case this bid is accepted and the Design-Builder shall fail to provide the required payment and performance bonds with the Department of Transportation, under the condition of this proposal, within 14 calendar days after the written notice of award is received by him, as provided in the Standard Specifications; otherwise said deposit will be returned to the Design-Builder.



Revised 4-16-02

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PROJECT: 8.1402212 WAKE COUNTY

SCOPE OF WORK (GREEN SHEETS)

STANDARD SPECIAL PROVISIONS (YELLOW SHEETS)

PROPOSAL FORM ITEM SHEET, ETC.

PROJECT SPECIAL PROVISIONS

CONTRACT TIME AND LIQUIDATED DAMAGES: 7-1-95

The date of availability for this contract is July 1, 2002, except that work in jurisdictional waters and wetlands shall not begin until a meeting between the DOT, Regulatory Agencies, and the Design-Builder is held as stipulated in the permits contained elsewhere in this package. This delay in availability has been considered in determining the contract time for this project.

The completion date for this contract is no later than August 1, 2005.

When observation periods are required by the special provisions, they are not a part of the work to be completed by the completion date and/or intermediate contract times stated in the contract. Should an observation period extend beyond the final completion date, the acceptable completion of the observation period shall be a part of the work covered by the performance and payment bonds.

The liquidated damages for this contract are Ten Thousand Dollars ($10,000.00) per calendar day. As an exception to this amount, where the contract has been determined to be substantially complete as defined in Section 105-18 contained elsewhere in this package, the liquidated damages will be reduced to Two Thousand Dollars ($2,000.00) per calendar day.

PROGRESS SCHEDULE:

The Design-Builder shall be responsible for planning, scheduling and reporting the progress of the work to ensure timely completion of the contract.

The Design-Builder shall submit a schedule in accordance with the following:

CRITICAL PATH METHOD PROJECT SCHEDULE (CPM):

DESCRIPTION:

The work of this provision consists of the Design-Builder planning, scheduling, designing, and constructing this project using a Critical Path Method Project Schedule (CPM). Use the CPM for coordinating and monitoring all the work specified in this contract including all activities of subcontractors, vendors, suppliers, utilities, railroads, NCDOT, and all other parties associated with the design or construction of this project. The work covered by this section includes but is not limited to submittals, major procurement, delivery, construction activities, submitting an initial CPM, and providing monthly updates to the CPM The schedule shall have considered the time requirement for ordering articles of special manufacture to meet specific requirements of the work and for any inspection requirements of the various sections of the specifications, such as Section 1072 when structural steel fabrication inspection is required. Make sure that all activities quantified in the contract are included in the CPM.

MATERIALS:

Use software for the CPM that generates files that are compatible with Primavera Project Planner.

REQUIREMENTS:

(A) Float

Float is defined as the amount of time between when an activity "can start or finish" (early start or early finish) and when an activity "must start or finish" (late start or late finish). Float is a shared commodity for the use of NCDOT and/or the Design-Builder and is not for the exclusive use or benefit of either party. Both parties have the full use of the float until it is depleted.

(B) Design-Builder's Scheduling Representative

Designate an individual from the Design-Builder's organization, prior to submission of the Initial Critical Path Method Schedule, who will be the Design-Builder's authorized representative responsible for the development, updating, and revising of the Design-Builder's CPM schedule. Have the scheduling representative represent the Design-Builder in all matters regarding the schedule and attend all schedule related meetings. The scheduling representative must be skilled in the application of computer network schedules on construction projects of the magnitude and complexity of this project.

(C) Initial Critical Path Method Schedule (ICPM)

Within thirty (30) calendar days of receiving the Notice of Award, submit an ICPM for approval. Within twenty-one (21) calendar days of receipt of the Design-Builder's ICPM, the Engineer will complete the review of the ICPM. If required, a Joint Review Conference will be convened at which the Engineer and the Design-Builder will make any necessary corrections or adjustments to the ICPM. If a revision to the ICPM is necessary due to the Engineer's review or a Joint Review Conference, submit a revised ICPM within seven (7) calendar days after the date of the Joint Review Conference. The Engineer will respond to the submitted revised ICPM with seven (7) calendar days of receipt.

Once the ICPM has been accepted, it becomes the CPM of record. Acceptance of the ICPM in no way attests to the validity of the assumptions, logic constraints, dependency relationships, resource allocations, manpower and equipment, or any other aspect of the ICPM. The Design-Builder is and will remain solely responsible for the planning and execution of work in order to meet project milestones or contract completion dates.

Include the following in the ICPM submittal:

(1) A time scale diagram containing the following:
   (a) an acceptable scale and format
   (b) all activities clearly labeled

(c) all activity identification clearly shown for each activity
(d) all relationships between activities shown

(2) Tabular reports containing the following:
(a) Precedence diagrams with activities listed and lead and lag times shown
(b) Activity duration shown. All activities must have a duration of not more than 20 days unless otherwise approved. Divide activities with longer durations into subgroups of activities not exceeding 20 working days in duration. Indicate logical start and end points (e.g. stationing, staging, etc.) for each subgroup.
(c) Activity descriptions shown
(d) Early start and finish dates shown
(e) Late start and finish dates shown
(f) Status (critical or not) shown
(g) Total float shown
(h) Responsibility (i.e. Design-Builder, specific subDesign-Builder, specific supplier, NCDOT, etc.) shown

(3) Written narrative complying with the requirements listed below

(4) Data disk containing all of the information in the ICPM. The disk must be compatible with Primavera Project Planner software.

(D) Written Narrative

Provide a written narrative that explains the sequence of work, the critical path, interim completion dates, project phasing, non-work days or periods, maintenance of traffic, and labor and equipment resources. In addition, explain in the written narrative how the Design-Builder has provided for permit requirements, environmental requirements, coordination with other public contractors, milestone dates, other entities, coordination with utility companies, special non-work days or periods, and weather in the ICPM.

Provide the following information for each activity listed in the ICPM:

(1) Estimated start and completion date
(2) Description of work to be done including the type and quantity of equipment, labor, and material to be used
(3) Description of the location on the project where activity occurs
(4) Description of planned production rates (e.g. cubic yards (cubic meters) of excavation per day/week)
(5) Description of work days per week, holidays, number of shifts per day, and number of hours per shift

(6) Description of expected and critical delivery dates for equipment or material that can affect timely completion of the project
(7) Identify the vendor, supplier, or subDesign-Builder to perform the activity. State all assumptions made in the scheduling of the subDesign-Builder's or supplier's work.
(8) Utilize the written narrative to explain the following:
  (a) relationship between activities not obviously identified
  (b) equipment usage and limitation
  (c) manpower usage and limitations
  (d) use of additional shifts and/or overtime
  (e) activity codes, abbreviations, and activity identification system
  (f) all calendars used in the CPM
  (g) constraints (date or time constraints)
  (h) all abbreviations used in the ICPM
  (i) scheduling of weather and/or temperature sensitive activities
  (j) describe critical completion dates for maintaining the design and construction schedule

(E) Schedule Updates

Submit an update of the CPM of record monthly and at the preconstruction conference. The data date for the CPM update will be seven days prior to the cut-off date for the monthly partial payment. Submit the update within seven calendar days of the data date. Failure to submit the CPM update may result in the Engineer withholding partial payments. Upon acceptance, the monthly update will become the CPM of record for the time period between its data date and the next approved update or revision.

Include in the monthly updates activity data as specified in (1) through (4) under (C) Initial Critical Path Method Schedule using actual activity start dates. Use the monthly update to describe the project progress to date. Include in the written narration a description of the work performed during the update period, the current critical path, the amount of float on the critical path, any delays or disruptions experienced during the update period, any change in manpower or equipment, and any potential delays or disruptions.

(F) Revisions to the Schedule of Record

A revision to the schedule of record is defined as one or more of the following:

(1) a change in the original duration of an activity
(2) a change in the logic of the schedule
(3) a change to resources
(4) a change to any Actual date, previously established
(5) the deletion or addition of an activity

(6) a change to, addition of, or deletion of a constraint (date or time constraint)
(7) a change to, addition of, or deletion of an activity code
(8) a change to an activity description
(9) any change other than updating an activity

Whenever a revision is proposed for any of the above reasons, contact the Engineer and verbally discuss the revision. If the revision is considered minor, the Engineer may allow the revision to be included in the next update of the CPM. If the revision is not considered minor, submit for approval the proposed revision with the same requirements as the ICPM including the following:

- an updated CPM including the proposed revision
- a written narrative that describes the reason for the revision, the resulting critical path, and all particulars of the revision including but not limited to:
  (1) changes in the method or manner of the work
  (2) changes in the specifications
  (3) changes in resources
  (4) extra work
  (5) addition or deletion of work
  (6) increased or decreased quantities
  (7) defective work
  (8) acceleration of work

Submitted revisions will be responded to within fourteen (14) calendar day after receipt. If the Design-Builder is required to resubmit the proposed revision, do so within seven (7) calendar days after receipt of the Engineer's comments. The Engineer reserves the right to reject any proposed revision which adversely affects the NCDOT, utilities, or other interested parties.

No measurement or direct payment will be made for Design-Builder costs relating to preparation and submission of schedules and reports and revisions thereto, the cost being considered as included in the lump sum Design-Build price

Acceptance of the Design-Builder's schedules by the Engineer is not to be construed as relieving the Design-Builder of its obligation to complete the work within the contract time; or as granting, rejecting, or in any other way acting on the Design-Builder's requests for adjustments to the date for completing contract work, or claims for additional compensation. Such requests shall be processed in strict compliance with other relevant provisions of the contract.

PARTNERING: **7-1-95**

As a part of its quality management program, the North Carolina Department of Transportation intends to encourage the formation of a cohesive relationship with the Design-Builder and its principal subContractors and suppliers. This relationship will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objectives are safe, effective, and efficient contract performance; and completion within budget, on schedule, and in accordance with the plans and specifications.

This relationship will be bilateral in makeup and participation will be totally voluntary. The cost associated with effectuating this relationship will be agreed to by both parties and shall be shared equally.

To implement this initiative prior to starting work in accordance with the requirements of Section 108 of the Standard Specifications and prior to the preconstruction conference, the Design-Builder's management personnel and NCDOT's Construction Engineer will initiate a partnering development seminar/team building workshop. Project personnel working with the assistance of the Construction Unit will make arrangements to determine attendees at the workshop, agenda of the workshop, duration, and location. Persons required to be in attendance will be the NCDOT Resident Engineer, the NCDOT Division Construction Engineer, and key project personnel; the Design-Builder's senior management personnel, the Design-Builder's on-site project manager, and key project supervisory personnel for both the prime Design-Builder ,the CEI Firm and principal subDesign-Builders and suppliers. The project design engineers, FHWA, and key local government personnel will also be invited to attend as necessary.

Follow-up workshops may be held periodically throughout the duration of the contract as agreed by the Design-Builder and the North Carolina Department of Transportation.

The establishment of the partnering charter on a project will not change the legal relationship to the contract nor relieve either party from any of the terms of the contract.

D1G16

BID DOCUMENTATION:

General:

The successful Proposer (Design-Builder) shall submit the original, unaltered bid documentation or a certified copy of the original, unaltered bid documentation used to prepare the Price Proposal for this contract to the Department. Such documentation shall be placed in escrow with a banking institution or other bonded document storage facility selected by the Department and preserved by that institution or facility as specified in the following sections of this provision.

Bid Documentation:

The term "bid documentation" as used in this provision means all written information, working papers, computer printouts and diskettes, charts, and all other data compilations which contain or

reflect information, data, and calculations used by the Proposer in the preparation of the Price Proposal. The term "bid documentation" includes, but is not limited to, Design-Builder equipment rates, Design-Builder overhead rates, labor rates, efficiency or productivity factors, arithmetical calculations, and quotations from subcontractors and material suppliers to the extent that such rates and quotations were used by the Proposer in formulating and determining the bid. The term "bid documentation" also includes any manuals which are standard to the industry used by the Proposer in determining the bid. Such manuals may be included in the bid documentation by reference. Such reference shall include the name and date of the publication and the publisher. The term does not include bid documents provided by the Department for use by the Proposer in bidding on this project.

Submittal of Bid Documentation:

A representative of the Proposer shall deliver the original, unaltered bid documentation or a certified copy of the original, unaltered bid documentation to the Department, in a container suitable for sealing, within ten (10) calendar days after the notice of award is received by him. Bid documentation will be considered a certified copy if the Proposer includes a letter to the Department from a chief officer of the company stating that the enclosed documentation is an EXACT copy of the original documentation. The letter must be signed by a chief officer of the company, have the person's name and title typed below the signature, and the signature MUST be notarized at the bottom of the letter. The Department will not execute the contract until the original, unaltered bid documentation or a certified copy of the original, unaltered bid documentation has been received by the Department. The container shall be clearly marked "Bid Documentation" and shall also show on the face of the container the Proposer's name, Proposer's address, the date of submittal, the Project Number, and the County.

Affidavit:

In addition to the bid documentation, an affidavit signed under oath by an individual authorized by the Proposer to execute the bid shall be included. The affidavit shall list each bid document with sufficient specificity so a comparison may be made between the list and the bid documentation to ensure that all of the bid documentation listed in the affidavit has been enclosed. The affidavit shall attest that the affiant has personally examined the bid documentation, that the affidavit lists all of the documents used by the Proposer to determine the bid for this project, and that all such bid documentation has been included.

Verification:

Upon delivery of the bid documentation, the Department's Contract Officer and the Proposer's representative will verify the accuracy and completeness of the bid documentation compared to the affidavit. Should a discrepancy exist, the Proposer's representative shall immediately furnish the Department's Contract Officer with any other needed bid documentation. The Department's Contract Officer upon determining that the bid documentation is complete will, in the presence of the Proposer's representative, immediately place the complete bid documentation and affidavit in

the container and seal it. Both parties will deliver the sealed container to a banking institution or other bonded document storage facility selected by the Department for placement in a safety deposit box, vault, or other secure accommodation.

Duration and Use:

The bid documentation and affidavit shall remain in escrow until sixty (60) calendar days from the time the Design-Builder receives the final estimate; or until such time as the Design-Builder gives written notice of intent to file a claim, files a written claim, files a written and verified claim, or initiates litigation against the Department related to the contract; or until authorized in writing by the Design-Builder. Upon the giving of written notice of intent to file a claim, filing a written claim, filing a written and verified claim, or the initiation of litigation by the Design-Builder against the Department, or receipt of a letter from the Design-Builder authorizing release, the Department may obtain the release and custody of the bid documentation. If the bid documentation remains in escrow sixty (60) calendar days after the time the Design-Builder receives the final estimate and the Design-Builder has not filed a written claim, filed a written and verified claim, or has not initiated litigation against the Department related to the contract, the Department shall instruct the banking institution or other bonded document storage facility to release the sealed container to the Design-Builder.

The Proposer certifies and agrees that the sealed container placed in escrow contains all of the bid documentation used to determine the bid and that no other bid documentation shall be relevant or material in litigation over claims brought by the Design-Builder arising out of this contract.

Failure to Provide Bid Documentation:

The Proposer's failure to provide the original, unaltered bid documentation or a certified copy of the original, unaltered bid documentation within ten (10) calendar days after the notice of award is received by him may be just cause for rescinding the award of the contract and may result in the removal of the Proposer from the Department's list of qualified Proposers for a period up to 180 days. Award may then be made to the next lowest responsible Proposer or the work may be readvertised and constructed under the contract or otherwise, as the Board of Transportation may decide.

Escrow Agreement:

The Proposer will be required to sign an Escrow Agreement within ten (10) calendar days after the notice of award is received by him. A copy of this Escrow Agreement document will be mailed to the Proposer with the notice of award. The Proposer and Department will sign the Escrow Agreement at the time that the bid documentation is delivered to a Banking Institution or other facility as outlined above. The Proposer's failure to sign the Escrow Agreement at the time the bid documentation is delivered may be just cause for rescinding the award of the contract and may result in the removal of the Proposer from the Department's list of qualified Proposers for a period up to 180 days. Award may then be made to the next lowest responsible Proposer or the work may

be readvertised and constructed under the contract or otherwise, as the Board of Transportation may decide.

Confidentiality of Bid Documentation:

The bid documentation and affidavit in escrow are, and will remain, the property of the Proposer. The Department has no interest in, or right to, the bid documentation and affidavit other than to verify the contents and legibility of the bid documentation unless the Design-Builder gives written notice of intent to file a claim, files a written claim, files a written and verified claim, or initiates litigation against the Department. In the event of such written notice of intent to file a claim, filing of a written claim, filing a written and verified claim, or initiation of litigation against the Department, or receipt of a letter from the Design-Builder authorizing release, the bid documentation and affidavit may become the property of the Department for use in considering any claim or in litigation as the Department may deem appropriate.

Any portion or portions of the bid documentation designated by the Proposer as a "trade secret" at the time the bid documentation is delivered to the Department's Contract Officer shall be protected from disclosure as provided by G.S. 132-1.2.

Cost and Escrow Instructions:

The cost of the escrow will be borne by the Department. The Department will provide escrow instructions to the banking institution or other bonded document storage facility consistent with this provision.

Payment:

There will be no separate payment for all costs of compilation of the data, container, or verification of the bid documentation. Payment at the lump sum price for the Design-Build project will be full compensation for all such costs.

EXECUTION OF SIGNATURE SHEETS AND DEBARMENT CERTIFICATION: 7-17-90

The Proposer's attention is directed to the various sheets in the Design-Build Package which are to be signed by the Proposer. A list of these sheets is shown below. The signature sheets are located behind the item sheets in the Design-Build Package. The bid bond is inserted in the Design-Build Package.

1. Applicable Signature Sheets: 1, 2, 3, 4, 5 or 6 (Bid)

2. Bid Bond (Proposal Insert)

The Proposer shall certify his and to the best of his knowledge all subcontractors, material suppliers and vendors utilized herein current status concerning suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency, in accordance with the "Debarment Certification" located behind the signature sheets in the Design-Build Packages. Execution of the bid signature sheets in conjunction with any applicable statements concerning exceptions, when such statements have been made on the "Debarment Certification", constitutes the Proposers certification of "status" under penalty of perjury under the laws of the United States.

D1G17

SUBMISSION OF DESIGN-BUILD PROPOSALS: 6-16-92

The Proposer's attention is directed to the fact that each Proposer's Design-Build Proposal shall comply with the following requirements in order for that Design-Build Proposal to be responsive and considered for award.

1. The Proposer shall be prequalified with the Department prior to submitting a Design-Build Proposal.

2. The Proposer shall deliver the Design-Build Proposal to the place, and prior to the time, indicated in the Design-Build Package.

3. The Design-Build Proposal documents shall be signed by an authorized employee of the Proposer.

4. The Design-Build Proposal shall be accompanied by Bid surety in the form of a Bid bond or Bid deposit.

5. If Disadvantaged Business Enterprises (DBE) goals are established for this contract, the Proposer shall complete the form Listing of DBE Subcontractors contained elsewhere in this proposal in accordance with the Project Special Provision entitled Disadvantaged Business Enterprises.

In addition to the above requirements, failure to comply with any of the requirements of Articles 102-8, 102-10 or 102-11 of the specifications may result in a Design-Build Proposal being rejected.

D1G18

SCHEDULE OF ESTIMATED COMPLETION PROGRESS: 7-16-90

The Design-Builder's attention is directed to the Standard Special Provision entitled "Availability Of Funds Termination Of Contracts" included elsewhere in this Design-Build Package. The Department of Transportation's schedule of estimated completion progress for this project as required by that Standard Special Provision is as follows:

Fiscal Year	Progress (Dollar Value)
2002 (7/1/01 - 6/30/02)	5% of Total Amount Bid
2003 (7/1/02 - 6/30/03)	44% of Total Amount Bid
2004 (7/1/03 - 6/30/04)	32% of Total Amount Bid
2005 (7/1/04 - 6/30/05)	19% of Total Amount Bid

The Design-Builder shall also furnish his own progress schedule in accordance with Article 108-2. Any acceleration of the progress as shown by the Design-Builder's progress schedule over the progress as shown above shall be subject to the approval of the Engineer.

D1G19

DISADVANTAGED BUSINESS ENTERPRISE 1-18-00

POLICY

It is the policy of the North Carolina Department of Transportation that Disadvantaged Business Enterprises shall have the opportunity to participate in the performance of contracts financed in whole or in part by Federal Funds in order to create a level playing field.

OBLIGATION

The Design-Builder, subcontractor, and sub-recipient shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Design-Builder shall carry out applicable requirements of 49 CFR 26 in the award and administration of federally assisted contracts as approved by the Federal Highway Administration. Failure by the Design-Builder to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Department deems necessary.

This obligation shall be incorporated into any subsequent contract at any level that is executed under the terms of this contract.

GOALS

The following goal for participation by Disadvantaged Business Enterprise (DBE) is established for this contract:

Disadvantaged Business Enterprises 10 %

This goal is to be met through utilization of highway construction contractors. Utilization of DBE firms performing design-related functions or Construction Engineering and Inspection are not included in this goal. DBE utilization for engineering related services is expected and is credited through the technical scoring process.

The Design-Builder 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 goals for this contract.

Only those firms certified by the Department can be counted toward this contract goal. The Department will provide oversight and direction in carrying forth this Program.

LISTING OF DBE SUBCONTRACTORS

All Proposers, at the time the Price proposal is submitted, must also submit a listing of DBE participation on the appropriate form (or facsimile thereof) contained elsewhere in this proposal in order for the bid to be considered responsive. Proposers must indicate the total dollar value of DBE participation for the contract. In the event the Proposer has no DBE participation, he is still required to indicate this on the forms by entering the word or number zero. Blank forms will not be deemed to represent zero participation. PROPOSALS SUBMITTED WHICH DO NOT HAVE DBE PARTICIPATION INDICATED ON THE APPROPRIATE FORM WILL NOT BE READ PUBLICLY. These Proposals will not be considered for award by the Department and they will be returned to the Proposer.

Only those DBE firms with current certification by the Department will be considered acceptable for listing in the Proposers submittal of DBE participation.

A. The Design-Builder shall indicate on the form for listing of DBE subcontractors contained elsewhere in this proposal the following required information:

REQUIRED INFORMATION

(1) The names and addresses of DBE firms committed to participate in the contract;

(2) The types of work and agreed upon prices of work to be performed by each DBE firm; and

(3) The total dollar amount to be paid to each DBE based on agreed upon prices.

Failure to indicate the required information on the specified form will cause the bid to be considered nonresponsive and it may be rejected.

The Proposer is required to submit written documentation of the Proposer/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 form, indicating their participation in the contract.

The Department will not allow any substitutions, deletions, or other alterations to the listing of firms committed for DBE participation and/or the respective listed types of work after opening of proposals. The Department will not allow adjustments to total dollar amount of DBE participation after the opening of proposals which would result in the DBE participation being less than the contract goal. The only exceptions to the requirements of this paragraph will be: (1) to allow for replacement of a DBE firm that had been decertified after opening of proposals, and (2) to allow alteration of the listed types of work subject to the Proposer submitting sufficient documentation to verify an obvious error in the initial submittal.

C. If the DBE participation submitted in the proposal by the apparent lowest responsive Proposer in response to Paragraph A does not meet or exceed the DBE contract goal, the apparent lowest responsive Proposer must submit information to satisfy the North Carolina Department of Transportation that sufficient Good Faith efforts have been made to meet the contract goals. One complete set and nine copies of this information must be received in the office of the State Contractual Services Engineer no later than 12:00 noon of the sixth day following opening of proposals. Where the information submitted includes repetitious solicitation letters it will be acceptable to submit a sample representative letter along with a distribution list of the firms being 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.

Where the Proposer fails to provide this information by the deadline, the Department may impose one or more of the following sanctions: (1) disqualify the Design-Builder and any affiliated companies from further bidding for a period of time of no more than 90 days from the date of disqualification as established in notification by certified mail, (2) disqualify the Design-Builder and any affiliated companies for award of all contracts for which bids have been received and opened, (3) disqualify the Design-Builder from the contract in question.

The following factors are what the Department will consider in judging whether or not the Proposer has made adequate good faith effort:

(1) Whether the Proposer attended any pre-bid meetings that were scheduled by the Department to inform DBEs of subcontracting opportunities.

(2) Whether the Proposer provided solicitations through all reasonable and available means (e.g. advertisings in newspapers owned and targeted to the Disadvantaged) at least 10 days prior to bid opening. Whether the Proposer provided written notice to all DBEs listed in the NCDOT DBE directory, 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 Proposer will be subcontracting.

(3) Whether the Proposer 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 Proposer must notify DBEs outside of the targeted Divisions that specialize in the subcontracted areas, as well as call the project Compliance Officer in the Office of Civil Rights to give notification of the Proposer inability to get DBE quotes.

(4) Whether the Proposer 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 prime Design-Builder might otherwise perform these work items with its own forces.

(5) Whether the Proposer provided interested DBEs with adequate and timely information about the plans, specifications and requirements of the contract.

(6) Whether the Proposer negotiated in good faith with interested DBEs not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

(7) 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 Proposer 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 Design-Builder to accept unreasonable quotes in order to satisfy contract goals.

(8) Whether the Proposer 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.

(9) Whether the Proposer 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.

(10) Any other evidence that the Proposer submits which show that the Proposer has made reasonable Good Faith efforts to include DBE participation.

In the event one Proposer is the apparent low Proposer 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 Proposer to combine the DBE participation as long as the overall goal value of all projects is achieved.

Where the apparent lowest responsive Proposer fails to submit sufficient participation by DBE firms to meet the contract goal and upon a determination by the Goal Compliance Committee based upon the information submitted that the apparent lowest responsive Proposer failed to make sufficient reasonable efforts to meet the contract goal, the Proposer will be offered the opportunity to meet in person for administrative reconsideration. Administrative reconsideration will be heard by a committee appointed by the Department. Members of this committee will be officials who did not take part in the original determination by the Goal Compliance Committee. The Proposer will have the opportunity to present written documentation or argument concerning the issue of whether it met the goal or made an adequate good faith effort. The Proposer will receive a written decision on the reconsideration. Explaining the basis for finding that the Proposer did or did not meet the goal or made adequate Good Faith efforts to do so. The result of the reconsideration process is not administratively appealable to the Department.

In the event that the Department does not award the contract to the apparent lowest responsive Proposer, the Department reserves the right to award the contract to the next lowest responsive Proposer 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 DIRECTORY

Included with this Design-Build Package is a list of Disadvantaged Business Enterprises (DBE) which have been certified as such by the North Carolina Department of Transportation. Only those DBE firms with current certification may be listed in the proposal form.

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

REPLACEMENT OF DBEs

(A) Performance Related

If any DBE Subcontractor submitted on the form for listing of DBE Subcontractors, contained elsewhere in this proposal form, is terminated or fails to complete its work on the contract for any reason, the Design-Builder shall take all necessary, reasonable steps to replace the DBE Subcontractor with another DBE Subcontractor to perform at least the same amount of work of the contract as the DBE that was terminated.

To demonstrate necessary, reasonable Good Faith efforts, the Design-Builder shall document the steps he has 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:

(a) 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.

(b) Efforts to negotiate with DBEs for specific subbids including, at a minimum:

(1) The names, addresses, and telephone numbers of DBEs who were contacted;

(2) A description of the information provided to DBEs regarding the plans and specifications for portions of the work to be performed; and

(c) For each DBE contacted but rejected as unqualified, the reasons for the Design-Builder' conclusion.

(d) Efforts made to assist the DBEs contacted, if needed, in obtaining bonding or insurance required by the Design-Builder.

The Design-Builder will not terminate a DBE subcontractor listed in the proposal form for convenience or perform the work with its own forces or those of an affiliate without the written approval of the Engineer. If the Design-Builder fails to demonstrate reasonable efforts to replace a DBE firm that does not perform as intended or completes the work with its own forces without the Engineer's approval, the Design-Builder will be disqualified from further bidding for a period of up to 6 months after notification by certified mail.

(B) Decertification

1. If a Prime Design-Builder has listed a DBE firm in his proposal and that DBE Subcontractor is subsequently decertified by the Department after a Request for Subcontract has been approved, then the Department will not require the Prime Design-Builder to solicit replacement DBE participation equal to the remaining work to be performed by the decertified firm. The participation equal to the remaining work performed by the decertified firm will count toward the contract goal but may not be counted toward the overall program goal.

2. If a Prime Design-Builder has listed a DBE firm in his proposal and the DBE firm is decertified prior to the Department approving a Request for Subcontract for the named DBE firm, the Prime Design-Builder 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.

DEFINITIONS

For purposes of this provision the following definitions will apply:

(1) Socially and economically disadvantaged individuals means a person who has a net worth of $750,000.00 or less and is a citizen or lawful permanent resident of the United States and who is:

(a) A Black American

(b) A Hispanic American

(c) A Subcontinent Asian American

(d) A Native American

(e) An Asian-Pacific American

(f) A Woman

(g) Members of other groups, or other individuals found to be economically and socially disadvantaged by the Small Business Administration under Section 8(d) of the Small Business Act, as amended (15 U.S.C. 637(d)).

(h) Members of other groups, or other individuals found to be economically and socially disadvantaged by the N. C. Department of Transportation under the Criteria for Disadvantaged Business Enterprises as published by the Department.

(2) Disadvantaged Business Enterprise (DBE) means a for-profit small business concern.

(a) That is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged or, in the case of a corporation in which 51 percent of the stock is owned by one or more such individuals; and

(b) Whose management and daily business operation are controlled by one or more of the socially and economically disadvantaged individuals who own it,

COUNTING DBE PARTICIPATION TOWARD MEETING THE DBE GOAL

(1) If a firm is determined to be an eligible DBE firm and certified by the Department, the total dollar value of the participation by the DBE will be counted toward the goal. 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 Design-Builder.

(2) When a DBE performs as a participant in a joint venture, the Design-Builder 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.

(3) (a) The Design-Builder may count toward its DBE goal only expenditures to DBEs that perform a commercially useful function in the work of a contract. A DBE is considered to perform a commercially useful function when it is responsible for execution of a distinct element of the work of a contract and carrying out its responsibilities by actually performing, managing, and supervising the work involved. 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.

(b) Consistent with normal industry practices, a DBE may enter into subcontracts. Work that a DBE subcontracts to another DBE firm may be counted toward the contract goal. Work that a DBE subcontracts to a non-DBE firm does not count toward the contract goal. If a DBE Design-Builder or Subcontractor subcontracts a significantly greater portion of the work of the contract than would be expected on the basis of normal industry practices, the DBE shall be presumed not to be performing a commercially useful function. The Departments decision on the rebuttal of this presumption is subject to review by the Federal Highway Administration but is not administratively appealable to USDOT.

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

(1) The DBE firm must be responsible for the management and supervision of entire trucking operation
(2) The DBE must itself own and operate at least one fully licensed, insured and operational truck
(3) The DBE will receive full credit for all trucks it owns, insures, operates, and employs drivers
(4) The DBE will receive full credit for all trucks leased from a certified DBE firm
(5) The DBE will only receive credit for the fees or commission for trucks leased from a non-DBE firm
(6) Trucks may be used by others during the term of the lease so long as the lease gives priority to the DBE for the use of the truck(s).

The DBE may present evidence to rebut this presumption to the Department for commercially useful functions.

(4) A Design-Builder may count toward its DBE goal 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.

(a) For purposes of this provision, a manufacturer is a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Design-Builder.

(b) For purposes of this provision, a regular dealer is 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. To be a regular dealer, the firm must engage in, as its principal business and in its own name, the purchase and sale 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 shall not be regarded as manufacturers or regular dealers within the meaning of this section.

(5) A Design-Builder may count toward its DBE goal the following expenditures to DBE firms that are not manufacturers or regular dealers:

(a) 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, toward DBE goal, provided the fees or commissions are determined to be reasonable and not excessive as compared with fees and commissions customarily allowed for similar services.

(b) 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), toward DBE goals, 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.

REPORTING DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION

When payments are made to Disadvantaged Business Enterprise firms, including material suppliers, contractors at all levels (prime, subcontractor, or second tier subcontractor) shall provide the Engineer with an accounting of said payments. This accounting shall be furnished the Engineer for any given month by the end of the following month. Failure to submit this information accordingly may result in (1) withholding of money due in the next partial pay estimate; or (2) removal of an approved Design-Builder from the prequalified Proposers list or the removal of other entities from the approved subcontractors list.

RETAINAGE AND PROMPT PAYMENT: **1-01-02**

Retainage:

The Department will not deduct and hold any retainage from the Design-Builder on this project.

The 2002 Standard Specifications shall be revised as follows:

Sub-Article 109-4(A), pages 1-69and 1-70

Delete the second, third, fourth, and fifth paragraphs of this subarticle.

Insert the following:

"The Department will withhold an amount sufficient to cover anticipated liquidated damages, as determined by the Engineer."

Prompt Payment of Monies Due SubContractors, Second Tier SubContractors and Material Suppliers and Release of Retainage

The Design-Builder, subContractor, or second tier Contractor, shall within seven calendar days of receipt of monies, resulting from work performed on the project or services rendered, pay subContractors, second tier subContractors, or material suppliers, as appropriate. This seven-day period begins upon knowledgeable receipt by the contracting firm obligated to make a subsequent periodic or final payment. These prompt payment requirements will be met if each firm mails the payment to the next level firm by evidence of postmark within the seven-day period.

This provision for prompt payment shall be incorporated into each subcontract or second tier subcontract issued for work performed on the project or for services provided.

The Design-Builder may withhold up to 3% retainage if any subcontractor does not obtain a payment and performance bond for their portion of the work. If any retainage is held on subcontractors, all retainage shall be released within seven calendar days of satisfactory completion of all work. For the purpose of release of retainage, satisfactory completion is defined as completion of all physical elements and corresponding documentation as defined in the contract, as well as agreement between the parties as to the final quantities for all work performed in the subcontract. The Department will provide internal controls to expedite the determination and processing of the final quantities for the satisfactorily completed subcontract portions of the project.

Failure of any entity to make prompt payment as defined herein may result in (1) withholding of money due to that entity in the next partial payment until such assurances are made satisfactory to this provision; or (2) removal of an approved Design-Builder from the prequalified bidders list or the removal of other entities from the approved subcontractors list.

D1G24

CERTIFICATION FOR FEDERAL-AID CONTRACTS: 3-21-90

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.

D1G27

DOMESTIC STEEL AND IRON PRODUCTS: 7-1-95

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

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

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

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

D1G31

U.S. DEPARTMENT OF TRANSPORTATION HOTLINE: **11-22-94**

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.

D1G32

SUBMISSION OF RECORDS - FEDERAL-AID PROJECTS: **12-15-98**

The Design-Builder's attention is directed to the Standard Special Provisions entitled "Required Contract Provisions - Federal-Aid Construction Contracts" contained elsewhere in this Design-Build Package.

This project is located on the National Highway System. If the final construction cost of this project equals or exceeds **One Million Dollars**, the Contractor must submit federal form FHWA-47. D1G34

SUBSURFACE INFORMATION: **7-1-95**

Subsurface information is available on this project. D1G37

PLANT PEST QUARANTINES: 9-18-95
(IMPORTED FIRE ANT, WITCHWEED, AND NOXIOUS WEEDS)

Regulated Articles:

The Design-Builder shall obtain a certificate or limited permit issued by the N.C. Department of Agriculture/United States Department of Agriculture (1-800-206-9333) or (919-733-6932) for any regulated article used on this project originating in a quarantined county. The certificate or limited permit shall accompany the article when it arrives at the project site.

Regulated article(s) included:

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 witchweed, imported fire ant or other noxious weeds.

D1G41

COOPERATION BETWEEN CONTRACTORS: 7-1-95

The Design-Builder's attention is directed to Article 105-7 of the Standard Specifications.

It is anticipated that a project (R-2547BA) on the west end of this project will be let to contract at the same time as this project. The contract for R-2547BA will contain a provision stating that the Contractor shall allow reasonable access thru his project to construct a haul road within the limits of R-2547BA from New Hope Road to the beginning of the Design-Build project.

The Design-Builder on this project shall cooperate with any Contractor working within or adjacent to the limits of this project to the extent that the work can be carried out to the best advantage of all concerned. D1G43

TRAINING REQUIREMENTS: **7-1-95**

The Proposer's attention is directed to the Standard Special Provision "Training Special Provision" included elsewhere in this Design-Build Package.

The number of trainees to be trained on this project shall be **25**.

D1G44

RECYCLED PRODUCTS OR SOLID WASTE MATERIALS: **7-1-95**

It is the policy of the Department of Transportation to aid in reduction of materials that become a part of our solid waste stream. To that extent the Department encourages contractors to initiate, develop, and utilize products and/or construction methods that incorporate the use of recycled or solid waste products in this project. For the purpose of this provision recycled products or waste materials will be those products or materials which would otherwise become solid waste and are collected, separated, or processed and reused or returned to reuse in the form of raw materials or products that are incorporated into a beneficial reuse on the project. Targeted materials include but are not limited to the following: plastic, glass, paper, cardboard, shingles, tires, fly ash, bottom ash, sludge and construction and demolition debris.

This provision will not be applicable to reclaimed asphalt materials used in accordance with the Section 611 of the Standard Specifications and shall not be applicable to any recycled or solid waste materials that are specified for use by the Department on this project.

To utilize recycled or solid waste materials, the Design-Builder shall submit to the Department of Transportation a Recycled Products or Solid Waste Materials Proposal for approval. This proposal shall be submitted to the Resident Engineer and the Design Services Unit. The proposal shall contain, as a minimum, the following.

1. A statement that the request for the modification is being made as a Recycled Products or Solid Waste Materials proposal.

2. A description of the difference between the existing contract requirements and the proposed modification and the comparative advantages and disadvantages of each.

3. If applicable, a complete drawing of the details covering the proposed modifications and supporting computations shall be included in the submittal. The preparation of new designs or revisions to the design shown in the contract drawings shall be accomplished by a professional engineer registered in North Carolina. The Department may waive this requirement based on the extent, detail, and complexity of the design needed to implement the proposal.

4. An itemized list of the contract requirements that would be modified and a recommendation of how to make each modification.

5. A statement of the time by which approval of the proposal must be issued by the Department to maintain the completion date of the contract.

The Design-Builder shall be responsible for obtaining any and all permits which may be required for the hauling, storing, or handling of the targeted materials.

The Design-Builder shall provide certification which verifies the source of the material, and the percentage of targeted materials to be utilized.

The Department reserves the right to reject, at its discretion, any Recycled Products or Solid Waste Materials proposal. The Engineer will be the sole judge of the acceptability.

The provisions of Article 104-3 of the Standard Specifications do not apply to a Recycled Products or Solid Waste Materials proposal.

Restrictions of conditions imposed by the Design-Builder for use of the proposal by the Department on other projects shall not be valid.

The Department will not be liable to the Design-Builder for failure to accept or act upon any Recycled Products or Waste Materials proposal submitted pursuant to this provision nor for any delays to the work attributable to any third party claims, or fines that may be levied as a result of the Design-Builder's decision to use targeted materials.

D1G45

SAFETY VESTS: **6-19-01**

All Design-Builder's personnel, all subcontractors and their personnel, and any material suppliers and their personnel must wear an OSHA approved reflective vest or outer garment at all times while at the project site.

D1G47

COAL FLY ASH IN EMBANKMENTS: 2-17-98

DESCRIPTION:

This specification allows the Design-Builder an option to use coal fly ash (coal combustion by-products) in embankments as a substitute for conventional borrow material.

When fly ash is used as a substitute for earth borrow material:

- Notify the Engineer and CEI Firm at the preconstruction conference or with at least forty days in advance of the intent to use fly ash.
- Provide the specific locations and construction details of the placement as stated in Section .1703 of the Solid Waste Management Law.
- Submit material properties and laboratory analysis of ash typical of the source to the Department prior to use for consideration of approval. Test data shall include characteristics of the ash leachate as determined by the EPA Toxicity Characteristic Leaching Procedure (Method 1311).
- Provide the material from a supplier including all transportation and all necessary permits for transportation and storage before placement.
- Coordinate delivery of volumes, trucking requirements and ash moisture content.

The Engineer and the Resource Conservation Engineer in the Design Services Unit will coordinate the requirements of Section .1700 of 15A NCAC 13B Solid Waste Management Rules and notify the Design-Builder that all the necessary requirements have been met before the placement of structural fill using coal combustion by-products is allowed.

MATERIAL:

Supply coal fly ash from a Department approved source. A list is maintained by the Resource Conservation Engineer.

The following fly ash is unacceptable:

- Frozen material.
- Ash from boilers fired with both coal and petroleum coke.

Deliver fly ash in covered vehicles.

Prevent dusting of fly ash by conditioning with water. Excessively wet or dry and uncovered material arriving at the site will be rejected.

CONSTRUCTION METHODS:

Place coal fly ash in the core of the embankment section with a minimum of 4 feet (1.2 meters) of earth cover to the outside limits of the embankments or subgrade and a minimum of 4 feet (1.2 meters) above the seasonal high ground-water table. Comply with Rule 15A NCAC 13-B Section 1704 Solid Waste Management Law.

Construct embankments by placing fly ash in level uniform lifts with a maximum lift of 10 inches (250 meters) but not greater than can be compacted to a minimum density of 95 percent as determined by test methods in AASHTO T-99, Determination of Maximum Density and Optimum Moisture Content, Method A or C depending upon particle size of the product. Provide a moisture content at the time of compaction of within 4 percent of optimum but not greater than 1 percent above optimum as determined by AASHTO T-99, Method A or C.

D2G02

CLEARING AND GRUBBING: **7-1-95**

Clearing on this project shall be performed to the limits established by Method "III" shown on Standard No. 200.03 of the Roadway Standards.

D2G03

BURNING RESTRICTIONS: **7-1-95**

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

M2G01

BORROW EXCAVATION:

Page 2-20, Article 230-6

After the first paragraph, add the following paragraph:

“No direct payment will be made for the work of Evaluation of Potential Wetlands and Endangered Species as outlined above. Payment at the contract lump sum price for Construction of Design-Build project will be considered full compensation for this work.”

SP2R37

AGGREGATE PRODUCTION: **11-20-01**

Provide aggregate from a producer who utilizes the new Aggregate Quality Control/Quality Assurance Program which is in effect at the time of shipment.

No price adjustment is allowed to Design-Builders or producers who utilize the new program. Participation in the new 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.

SP10R05

FINE AGGREGATE: **1-01-02**

The 2002 Standard Specifications shall be revised as follows:

Page 10-17, Table 1005-2

Add the following paragraph at the end of the table:

"**For Standard Sizes 2S and 2MS the following gradations apply.

The minimum percent shown above for material passing the No. 50 (.300mm) and No. 100 (.150mm) sieves may be reduced to 5 and 0, respectively, if the aggregate is to be used in air-entrained concrete containing more than 400 pounds of cementitious materials per cubic yard (237 kg/cubic meter) or in non-air-entrained concrete containing more than 500 pounds of cementitious material per cubic yard (297 kg/cubic meter) or as subdrain fine aggregate."

SP10R15

SHOULDER AND FILL SLOPE MATERIAL: **6-19-01**

General:

Perform the required shoulder and slope construction for this project in accordance with the applicable requirements of Section 560 and Section 235 of the Standard Specifications except as follows:

Construct the top 6 inches (150 mm) of shoulder and fill slopes with soils capable of supporting vegetation. Environmentally Sensitive Areas should be capped with this material before other areas.

Provide soil consisting of loose, friable, sandy material free of subsoil admixtures, refuse, stumps, rocks, roots, root mats, or other unsatisfactory material.

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 (50 mm) 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.

ASPHALT CONCRETE PLANT MIX PAVEMENTS:

Revise the 2002 Standard Specifications as follows:

Page 6-36, Article 610-13

Add the following paragraph before the first paragraph:

The "Asphalt Price" used to calculate any price adjustments set forth in this section shall be $35 per theoretical ton. This price shall apply for all mix types.

ASPHALT BINDER CONTENT OF ASPHALT PLANT MIXES: 11-21-00

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 25.0X	4.3%
Asphalt Concrete Intermediate Course, Type I 19.0X	4.7%
Asphalt Concrete Surface Course, Type S 9.5X	6.5%
Asphalt Concrete Surface Course, Type S 12.5X	5.5%

The actual asphalt binder content will be established during construction by the CEI Firm within the limits established in the Standard Specifications or Project Special Provisions.

D6G08

TYING PROPOSED CONCRETE PAVEMENT TO EXISTING CONCRETE PAVEMENT: 7-1-95

Tie proposed concrete pavement on this project to existing concrete pavement in accordance with the detail shown in the plans and the following provision:

1. Drill holes in the existing concrete pavement 1/8" (3.2 mm) greater than the diameter of the dowel bar. After drilling, blow the hole out with air and allow to dry.

2. Next, place the cement grout or epoxy resin in the back of the dowel hole. The placement of grout can be achieved by using a flexible tube with a long nose that places the material in the back of the dowel hole; the placement of epoxy-type materials can be achieved by using a cartridge with a long nozzle that dispenses the material to the rear of the dowel hole.

3. Insert the dowel into the hole with a slight twisting motion so that the material in the back of the hole is forced up and around the dowel bar to ensure a uniform coating of the anchoring material over the dowel bar.

4. Place a thin nylon or plastic grout retention disk, (1/16" [1.6 mm] minimum thickness) manufactured to slip tightly over the dowel over the dowel and against the slab face to prevent the anchoring material from flowing out of the hole, and to create an effective face at the entrance of the dowel hole.

No direct payment will be made for this work as such work will be included in the contract lump sum price for the project.

SP7R05

BEGINNING AND ENDING OF CONCRETE PAVEMENT: 7-1-95

Install dowels in the concrete pavement at its beginning and ending to allow for future tie-in of concrete pavement in accordance with the detail in the plans and as directed by the Engineer.

No direct payment will be made for this work as such work will be included in contract lump sum price for the project.

SP7R15

CONCRETE BRICK AND BLOCK PRODUCTION: 11-20-01

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

No price adjustment is allowed to Design-Builders or producers who utilize the new program. Participation in the new 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.

SP10R10

STREET SIGNS AND MARKERS AND ROUTE MARKERS: 7-1-95

The Design-Builder shall move any existing street signs and markers and route markers out of the construction limits of the project and install the street signs and markers and route markers so that

they will be visible to the traveling public if there is sufficient right of way for these signs and markers outside of the construction limits.

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

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

The Design-Builder will be responsible to the owners for any damage to any street signs and markers or route markers during the above described operations.

D9G01

FLOWABLE FILL: **5-15-01**

Description:

This specification shall give the Design-Builder an option to use (a controlled low-strength material) flowable fill as a substitute for conventional fill material.

Flowable fill may be substituted for backfilling roadway trenches containing water, sanitary sewer, storm sewer and utility pipes and conduits. The Design-Builder has an option of filling culvert pipes and leaving them in place instead of removing them. The Design-Builder shall provide a method to plug the ends of the existing pipe in order to contain the flowable fill in the drainage pipes to the satisfaction of the CEI Firm. When approved by the CEI Firm, flowable fill may be used for backfilling retaining walls, bridge abutments, and other applications where conventional fill material has traditionally been used.

Materials:

All materials shall meet the requirements of Division 10 of the Standard Specifications shown below:

Fine aggregate.....Article 1014-1
(Bottom ash, although not included in Article 1014-1, may also be used with permission of the CEI Firm.)

Portland cement.....Article 1024-1
Type IP blended cement.....Article 1024-1
Fly ash.....Article 1024-5*

*Certain requirements of this article and ASTM C618 may be waived with the permission of the CEI Firm.

Type 1S blended cement.....Article 1024-1
Water.....Article 1024-4
Chemical Admixtures.....Article 1024-3**

** High-air generators or foaming agents may be used in lieu of conventional concrete air-entraining agents with the permission of the CEI Firm.

Composition and Design:

The Design-Builder shall submit to the CEI Firm the proposed mix design(s) on M & T Form 312 at least 35 days prior to use. Mix proportions shall be determined by a testing laboratory which has been approved by the N.C. Division of Highways and shall be based on laboratory trial batches meeting the following requirements:

	Excavatable	Non-Excavatable
Compressive Strength	(1,035 KPa)(150 psi)(max.) @ 56 days	(862 Kpa)(125 psi)(min.) @ 28 days
Approximate quantities per cubic yard:		
Cement	(18 Kg-45 Kg)(40-100 lbs.)	(45 Kg-68 Kg)(100-150 lbs.)
Fly ash	* * *	* * *
Fine Agg. (SSD)	* * *	* * *
Water (approximate)	As Necessary	As Necessary
Air	0 - 35%	0 - 35%

*** Amounts singly or in combination to make the mix yield one cubic yard.

To achieve desired placement consistency, flowability may be adjusted by varying the water content, with appropriate quantitative changes in other materials. Less flowable mixes are desirable when it is necessary to put traffic back on a roadway quickly or when less buoyant fill is needed to backfill pipes that could float out of position. Mixes to be pumped will need fly ash.

The Design-Builder shall state on Form 312 the intended use of the material. The Form shall be accompanied by a listing of compressive strength of at least three (100 mm x 200 mm) 4" x 8" cylinders at the age of 28 or 56 days, depending on whether the mix is to be excavated or not. The cylinders shall be air cured during the entire period before testing. The CEI Firm will advise the Design-Builder in writing of the acceptability of the mix design.

Placing:
Flowable fill material shall be discharged directly from the truck into the space to be filled, or by other methods approved by the CEI Firm. The mix may be placed full depth or in lifts as site

conditions dictate. In roadway trenches, the material shall be brought level with the bottom of the pavement and then paved over. Between filling and paving operations, steel plates may be placed over the trench to accommodate traffic.

D10G01

VALUE ANALYSIS:

A. Preconstruction Studies:

Ensure that a preconstruction value engineering study is conducted for the design portion of this project. Determine and identify the appropriate time for the study to occur on the approved CPM schedule. Advise the Department when the project is complete enough to study the design portion of the project and when the plans are ready to conduct the value engineering study.

The Department will conduct the value engineering study in accordance with AASHTO and FHWA guidelines and policies. The Department will be responsible for arranging the exact time and location of the study. A Value Engineering Team formed by the Department may consist of NCDOT personnel, personnel from other consultants or outside agencies or some combination of these sources to perform the value engineering study. The Design-Builder will not be a member of the study team but will be required to provide information for the study and be available to provide information during the study.

Cooperate fully with the Value Engineering Study Team during the study and provide any information necessary to conduct the study.

Budget thirty-two (32) man-hours for information gathering, presentation, data compilation, evaluation, and study recommendation response. The elements necessary to assemble, deliver, support, and respond to a value engineering study is considered normal engineering support duties and should be performed by the Design-Builder with minimum expenditure of effort and time under its normal design procedures. Report the hours expended and estimated costs of labor and materials to the Department Value Engineer for cost tracking and value engineering evaluation purposes The costs for a value engineering study are not identified as a separate expense item for accounting purposes.

The Department Value Engineer will notify the Design-Builder of the recommendations resulting from the study within 10 days after the completion of the value engineering study. Implement all Department approved value engineering recommendations unless substantial evidence is provided that the recommendations are not beneficial to the Department. The Department and the Design-Builder will evaluate additional redesign time and if deemed appropriate the cost will be negotiated and added to the Scope of Work by contract modification.

B. Value Engineering Constructions Proposals (VECP's):

Value Engineering Proposals as identified in the NCDOT Standard Specifications for Roads and Structures Article 104-12 will be accepted based on the criteria bid in the original Design-Bid proposal package. VECP's submitted by the Design-Builder will be evaluated for validity by the Department according to Article 104-12 and the Design-Build proposal. The net savings **will not be split on a 50% basis** as defined in Article 104-12. The Department will receive all the savings except the actual expense of developing the engineering plan changes. The Design-Builder may receive up to a maximum of 50% of the net savings for this expense. All other provisions of Article 104-12 shall apply.

INSURANCE SPECIAL PROVISIONS

NORFOLK SOUTHERN RAILWAY COMPANY

STATE PROJECT: 8.1402212 COUNTY: Wake

A. In addition to any other forms of insurance or bonds required elsewhere in the contract documents, the Design-Builder will be required to provide coverage for all work to be performed on Railroad right(s) of way under the terms of the contract by carrying insurance of the following kinds:

1. **CONTRACTOR'S COMMERCIAL GENERAL LIABILITY INSURANCE:**

a. The Design-Builder shall furnish an original and one copy of the certificates of insurance to the Department of Transportation as evidence that, with respect to the operations he performs on railroad right of way, he carries Commercial General Liability Insurance including "XCU" coverage providing for limits of liability as follows:

COVERAGE	**MINIMUM COMBINED LIMITS OF LIABILITY**
Bodily Injury Liability	$ 2,000,000 Per Occurrence
Property Damage Liability	$ 2,000,000 Aggregate

b. If any part of the work is sublet, similar insurance and evidence thereof in the same amounts as required of the Prime Contractor, shall be provided by or in behalf of the Sub-contractor to cover his operations on railroad right of way. As an alternative, the Prime Contractor may provide insurance for the Sub-contractor by means of separate and individual policies.

c. Certificates of Insurance holders are to be the addresses given below. Certificates shall make reference to the project, milepost and county.

Division of Highways
Dept. of Transportation
c/o State Contractual Services Engr.
P. O. Box 25201
Raleigh, North Carolina 27611

Norfolk Southern Corporation
c/o Director of Risk Management
Three Commercial Place
Norfolk, Virginia 23510-2191

2. **RAILROAD PROTECTIVE LIABILITY INSURANCE**:

a. The Design-Builder shall furnish to the Department of Transportation an original and one duplicate of the Railroad Protective Liability Insurance Policy with limits of liability as follows:

COVERAGE	MINIMUM COMBINED LIMITS OF LIABILITY
Bodily Injury Liability Property Damage Liability Physical Damage to Property	$2,000,000 Per Occurrence $6,000,000 Aggregate Per Annual Policy Period

b. The Standard for this protective insurance shall follow the requirements of the Federal-Aid Policy Guide outlined under 23 CFR 646A.

The Railroad Protective Liability Policy is to be written on the ISO/RIMA Form No. CG 00 35 06 90 including Endorsements CG 28 31 11 85 and IL 00 21 or their equivalents.

c. The names insured, description of the work and designation of the job site to be shown on the Policy are as follows:

Named Insured: Norfolk Southern Railway Company
Three Commercial Place
Norfolk, Virginia 23510-2191

Description and Designation: All construction on railroad right of way, located left of and between approximate Survey Station 35+22.665, Survey Line –L- and Survey Station 42+5.000, Survey Line –L-; all as shown on North Carolina Department of Transportation Project: 8.1402212 in Wake County, North Carolina.

B. The Railroad Protective Liability Policy shall contain a clause requiring that sixty (60) days written notice be given the Department of Transportation and the Railroad Company prior to **cancellation or change**.

All other policies and certificates shall contain a clause requiring that thirty (30) days written notice be given to the Department of Transportation and the Railroad Company prior to **cancellation or change**. The notices shall make reference to the project, milepost and county.

Revised 4-16-02

Project 8.1402212 (R-2547 BB, C and CC) Wake Co.

NOTICE TO:

Norfolk Southern Corporation
c/o Director of Risk Management
Three Commercial Place
Norfolk, Virginia 23510-2191

COPY NOTICE TO:

Division of Highways
Department of Transportation
c/o State Contractual Services Engineer
P. O. Box 25201
Raleigh, North Carolina 27611

C. All insurance herein before specified shall be carried until the final inspection and acceptance of the project, or that portion of the project within railroad right of way, by the Department of Transportation or, in the case of subcontractors, until the Contractor furnishes a letter to the Engineering stating that the subcontractor has completed his subcontracted work within railroad right of way to the satisfaction of the Contractor and that the Contractor will accomplish any additional work necessary on railroad right of way with his own forces. It is understood that the amounts specified are minimum amounts and that the Contractor may carry insurance in larger amounts if he so desires. As to "aggregate limits", if the insurer establishes loss reserves equal to or in excess of the aggregate limit specified in any of the required insurance policies, Contractor shall immediately notify the Department of Transportation and shall cease all operations until the aggregate limit is reinstated. If the insurer establishes loss reserves equal to or in excess of one/half of the aggregate limit, Contractor shall arrange to restore the aggregate limit to at least the minimum amount stated in these requirements. Any insurance policies and certificates taken our and furnished due to these requirements shall be approved by the Department of Transportation and the Railroad Company as to form and amount prior to beginning work on railroad right of way.

No extra allowance will be made for the insurance required hereunder, the entire cost of same to be included in the contract lump sum price for the project.

D. Evidence of insurance as required above shall be furnished for review to the Department of Transportation at the address shown below after which it will be forwarded by the Department of Transportation to the Railroad.

Send to Department:

Division of Highways
Department of Transportation
c/o State Contractual Services Engineer
P. O. Box 25201
Raleigh, North Carolina 27611

Revised 4-16-02

Project 8.1402212 (R-2547 BB, C and CC) Wake Co.

RAILROAD SITE DATA:

The following information is provided as a convenience to the Design-Builder. This information is subject to change and the Design-Builder should contact the Railroad to verify the accuracy. Since this information is shown as a convenience to the Design-Builder but is subject to change, the Design-Builder shall have no claims whatsoever against either the Railroad or the Department of Transportation for any delays or additional costs incurred based on changes in this information.

1. Number of tracks - 1
2. Number of trains per day - 4
3. Maximum speed of trains - 49

GENERAL:

USE OF TERMS:

Throughout this Design-Build Package and all manuals, documents and standards referred to in the Design-Build Package the terms Contractor, Bidder, Design-Builder, Design-Build Team and Proposer are synonymous.

DESIGN REFERENCES:

Design references developed and published by NCDOT and those developed and published by other agencies and adopted for use by NCDOT which are to be used in the design of this project may be obtained by contacting the Contract Office of the Design Services Unit. Standard prices for materials which the Department normally sells for a fee will be in effect. The Design Builder is responsible for designing in accordance with the applicable documents and current revisions and supplements thereto.

REVIEW AND APPROVAL OF DESIGN SUBMITTALS:

Major design milestones and required design submittals shall be identified as activities on the approved CPM for the project. Submittals will be reviewed within 10 working days (15 days for temporary structures) of the activity date identified on the approved CPM unless otherwise stipulated in the scope of work. All submittals (four full size copies) shall be made simultaneously to the Resident Engineer (two copies) and to the designated person in the Highway Design Branch (two copies). No work shall be performed prior to the approval of the design submittals.

OVERVIEW:

The project will be a 6-lane freeway on new location with a 14 meter median from east of New Hope Road to existing US 64 east of Knightdale. There will be several interchanges, overpasses, service roads and -Y- line realignments. Much of the basic design is done and right of way will be obtained by the State.

Project services shall include but are not limited to:

- Design Services – completion of construction plans
- Construction Services – necessary to build and ensure workmanship of the designed facility.

The Record of Decision was approved August 31, 1999. Permits will be provided when received by the Department.

SCOPE:

The scope of work for this project will include design, construction and construction engineering and management of the project. The design work will include all aspects to provide a six lane freeway. The designs shall meet all appropriate latest versions of AASHTO Policy on Geometric Design of Highways and Streets, AASHTO Standard Specifications for the Design of Highway Bridges, Manual of Uniform Traffic Control Devices, and all NCDOT design criteria.

Construction will include but not limited to all necessary roadway work, drainage, utility coordination, erosion and sediment control work items, foundation design, substructure work and superstructure work. Construction engineering and management, including quality control and quality assurance will be the responsibility of the Design-Builder. Construction will comply with NCDOT Standard Specifications for Roadways and Structures Edition of 2002 and any special provisions.

Areas of work required for this project will include, but are not limited to the following items:

1. Supplemental Surveys
2. Drainage Design
3. Final Roadway Plan Preparation
4. Preliminary and Final Bridge Design for some Bridges
5. Subgrade Stabilization
6. Erosion and Sediment Control and Pavement Markings
7. Signal Design
8. R/W Utilities, Conflicts and Construction
9. Traffic Control and Pavement Markings
10. Signing
11. Noise Wall Design
12. Construction
13. Project Management
14. Construction Management
15. QC/QA including inspections and testings

All designs must be in Microstation J format utilizing Geopak 2001 software.

DESIGN, CONSTRUCTION AND CEI WORK PERFORMED BY DESIGN-BUILDER:

The design work consists of the preparation of all construction documents for the Knightdale Bypass on new location as outlined in the Scope of Work section of this package. All the design features of this project are expected to be within the existing right-of-way. The Design-Builder shall prepare final designs, construction drawings and special provisions.

The Department has performed a significant amount of design for this project. It will be the Design-Builder's responsibility to review these designs to the team's satisfaction. The Department assumes no responsibility as to the accuracy of the designs or to any of the quantities shown. The Design-Builder will be expected to accept full responsibility for the design of the project.

The Design-Builder shall be fully and totally responsible for the accuracy and completeness of all work performed under this contract and shall save the State harmless and shall be fully liable for any additional costs and all claims against the State which may arise due to errors, omissions and negligence of the Design-Builder in performing the work.

There shall be no assignment, subletting or transfer of the interest of the Design-Builder in any of the work covered by the Contract without the written consent of the State, except that the Design-Builder may, with prior notification of such action to the State, sublet property searches and related services without further approval of the State.

The Design-Builder shall certify all plans, specifications, estimates and engineering data furnished by him.

All work by the Design-Builder is to be done in a manner satisfactory to the State and in accordance with the established customs, practices, and procedures of the North Carolina Department of Transportation and in conformity with the standards adopted by the American Association of State Highway Transportation Officials, and approved by the Secretary of Transportation as provided in Title 23, US Code,Section 109 (b). The decision of the State is to control in all questions regarding location, type of design, dimension of design, and similar questions.

If a team member that is identified in the qualifications package changes after the team has been "short listed", the Design-Build Team shall notify the Department in writing immediately. The team shall present the Department of the name of the individual who will replace the person that left the team. The Department reserves the right to reject the team from further consideration in the development of the proposal package.

ETHICS POLICY:

Employees employed by the Design-Builder or employees employed by any subconsultant for the Design-Builder to provide services for this project shall comply with the DEPARTMENT'S ethics policy. Failure to comply with the ethics policy will result in the employee's removal from the project and may result in removal of the Company from the DEPARTMENT'S listing of Registered Qualified Engineering Firms.

APPROVAL OF PERSONNEL:

The DEPARTMENT shall have the right to approve or reject any personnel, assigned to a project by the Design-Builder.

The Design-Builder or any subcontractor for the Design-Builder which are employed to provide services for this project shall not discuss employment opportunities or engage the services of any person or persons, now in the employment of the State during the time of this contract, without written consent of the State.

In the event of engagement, the Design-Builder or their subcontractors shall restrict such person or persons from working on any of the Design-Builder's contracted projects in which the person or persons were formerly involved while employed by the State. The restriction period shall be for the duration of the contracted project with which the person was involved. "Involvement" shall be defined as active participation in any of the following activities:

- Drafting the contract
- Defining the scope of the contract
- Selection of the firm for services
- Negotiation of the cost of the contract (including calculating manhours or fees);and
- Administration of the contract.

An exception to these terms may be granted when recommended by the Secretary and approved by the Board of Transportation.

Failure to comply with the terms stated above in this section shall be grounds for termination of this contract and/or not being considered for selection of work on future contracts for a period of one year.

PERMIT RESPONSIBILITIES:

The Department will obtain the necessary Department of the Army 404 permit and the section 401 water quality certification for this project. The issuance of these permits is based on the construction and design of the project being in conformance with the permit application package and drawings. It will be the Design-Builder's responsibility to provide final permit drawings depicting the final construction details and design to the Department. The Department will then forward the details to the appropriate parties to have the permit modified to reflect the details.

Any design or construction details which are not in conformance with the permit and permit drawings are solely the Design-Builder's responsibility as to performing all environmental assessments, permit drawing modifications, mitigation required as a result of the change, the time the modification takes, and any other requirements that may be imposed by the permitting agencies in order to obtain the permit modification.

The Design-Builder shall be responsible for developing the permit application package for all jurisdictional impacts that are incurred due to any design that requires the acquisition of additional right-of-way. If additional right-of -way is required the Design-Builder shall engage the services of a competent environmental consultant to conduct an environmental screening of the additional area. Prior to conducting the environmental screening, the Design-Builder shall notify the Department of the identity of the competent environmental consultant. The Design-Builder shall forward the application to NCDOT and NCDOT will submit the application to the appropriate agencies.

If any staging areas are located outside the existing right-of-way, the Design-Builder shall engage the services of a competent environmental consultant to conduct Federally listed Threatened and Endangered Species surveys in these areas.

SUBMITTAL OF PROPOSALS:

General:

Technical and Price Proposals will be accepted until **4:00 P.M. Eastern Standard Time on Wednesday May 8, 2002**, at the office of the Contract Officer, 1020 Birch Ridge Drive, Century Center Complex Bldg. B, Raleigh, NC. No Proposals will be accepted after the time specified.

Technical and Price Proposals will be accepted before and on the published date, and until the time specified. Proposals shall be submitted in 2 separate, sealed parcels containing the Technical Proposal in one and the Price Proposal in the other. Parcels shall be clearly marked to identify the project and the proposer. Each parcel shall also be clearly marked to identify the contents as the Technical Proposal or Price Proposal, as applicable.

Stipend:

A stipulated fee of $50,000 will be awarded to each proposer on the short-list who provides a responsive, but unsuccessful, proposal. If a contract award is not made, all responsive proposers shall receive the stipulated fee. The stipulated fee shall be paid to eligible proposers within ninety days after the award of the contract or the decision not to award. Once award is made, unsuccessful proposers will be notified of the opportunity to apply for the stipulated fee. If the Design-Builder agrees to accept the stipulated fee; in consideration for payment of the stipulated fee, the Department reserves the right to use any ideas or information contained in the proposals in connection with any contract awarded for the project, or in connection with any subsequent procurement, with no obligation to pay additional compensation to the unsuccessful proposers. Unsuccessful Design-Build proposers may elect to refuse payment of the stipulated fee and retain any rights to its proposal and the ideas and information contained in it.

Technical Proposal:

Technical proposals shall be submitted in 8 copies and should address the technical elements of the design and construction of the project. Technical Proposals shall be on 8 1/2" X 11" pages printed on one side, double spaced, with a font size of 12 (No fold-out sheets allowed). The maximum number

of pages, excluding appropriate 11" x 17" plan sheets, shall be 50 (fifty). The selection process will consider the understanding of the project, the anticipated problems and the solutions to those problems. Detailed criteria for completing the Technical Proposal follows later in this section. Key Project Team members, identified in the Request for Qualifications shall not be modified in the Technical Proposal without written approval of the Department. Any such request should be sent to the attention of Mr. Randy Garris P.E. at the address below:

NCDOT-Design Services Unit
Century Center-Building B
1020 Birch Ridge Drive
Raleigh, NC 27610

Technical Proposals shall be submitted in a sealed package. The outer wrapping shall clearly indicate the following information:

Project No: 8.1402212
TIP NO. R-2547 BB, C and CC
Wake County
US-64 Knightdale Bypass form East of New Hope Road to Existing US 64 East of Knightdale

TECHNICAL PROPOSAL

Submitted By: (Design-Build Proposer's name)

Price Proposal:

The Price Proposal shall be submitted by returning the Design-Build package with the item sheets completed and all required signatures and bonds. Failure to execute the required documents may render the proposal non-responsive.

Price Proposals shall be submitted in a sealed package. The outer wrapping will clearly indicate the following information:

Project No. 8.1402212
TIP NO. R-2547 BB, C and CC
Wake County
US-64 Knightdale Bypass form East of New Hope Road to Existing US 64 East of Knightdale

PRICE PROPOSAL

Submitted By: (Design-Build Proposer's name)

TECHNICAL PROPOSAL EVALUATION:

The Technical Proposal shall be developed using narratives, tables, charts, plots, drawings and sketches as appropriate. The purpose of the Technical Proposal is to document the firm's understanding of the project, their selection of appropriate design criteria, and their approach for completing all design and construction activities. The proposal will be evaluated on how well each of the following items is addressed:

EVALUATION FACTOR	POINTS
1. Responsiveness to RFP	46
2. Innovation	20
3. Construction	27
4. Oral Interview	7

TECHNICAL PROPOSAL EVALUATION CRITERIA:

1. Responsiveness to RFP – 46 points

- **Design Management – 5 points**

  Describe the Proposer's concept of design management. The proposal shall identify key positions and subordinate organizational units.

Describe the plan for the coordination of civil/structural, utilities, traffic maintenance, constructability and environmental responsibility.

Provide a narrative description of the proposed location of the design office(s).

A description of how the designs developed by different firms and offices will be integrated.

A description of how design personnel will interface with the construction personnel.

Describe the overall strengths of the Design team and their ability to fulfill the design requirements of this project.

- **Quality Management – 15 points**

Describe how the Proposer will comply with the quality control requirements for both design and construction. Specifically, include a narrative describing the Design-Builder's understanding of the Department's construction quality control philosophy for this project and how the Design-Build Team will implement it. The narrative shall include both design and construction activities.

Describe the Proposer's approach to Quality Control during construction as it relates to the Construction Engineering and Inspection firm. Describe philosophies, coordination, and general approaches to inspection that will ensure that the final product will be of high quality.

- **Human and Natural Environmental Responsibility – 7 Points**

Describe the Proposer's approach to ensuring that the concerns of surrounding citizens will be addressed through adequate design and appropriate construction procedures. Describe the approach to ensuring that all work will be performed in accordance with approved permits, rules, regulations and policies of the Department and appropriate agencies.

- **Design Features – 10 points**

Show plan view of design concepts with key elements noted.

Identify preliminary horizontal and vertical alignment of all roadway elements.

Show typical sections for the mainline of the project.

Identify drainage modifications and designs to be implemented.

Identify the appropriate design criteria for each feature. Identify any deviations, including proposed design exceptions, from the established design criteria that will be utilized. Explain why the deviation is necessary.

Describe any Geotechnical investigations to be performed by the Design-Build Team.

- **Design Participation by Disadvantaged Business Enterprises – 4 Points**

Describe the Proposer's approach to ensuring that Disadvantaged Business Enterprises (DBE) will have opportunity to participate in the design of the project. DBE firms to be utilized in the design and CEI work shall be noted in the submittal for this RFP. It is expected that DBE design firm participation will be at least 5% of the overall design cost. The overall approach to ensuring DBE participation in all areas of work also needs to be addressed.

- **Structure Features – 5 points**

Identify any special bridge design features to be constructed.

Identify types of any retaining walls and /or noise walls if applicable.

Address the approach to coordinating any necessary efforts with railroad owners.

2. Innovation – 20 points

- **Overall Schedule and Milestones – 15 points**

Provide a schedule for the project including both design and construction. The schedule shall show the sequence and continuity of operations, as well as the month of delivery of usable segments of the project.

- **Miscellaneous – 5 points**

Identify any aspects of the design or construction elements that the firm considers to be innovative. Include a description of alternatives that were considered whether implemented or not.

Identify the source of project materials.

Identify any special aesthetics considerations that will be part of the design.

3. Construction – 27 points

- **Construction Management – 5 points**

  Describe the Proposer's concept of the project construction management organization and how it inter-relates with the other elements of the Proposer's organization for the project. Provide a brief narrative description of the Proposer's proposed plan for performing construction on the project. This description shall include at least the following:

  A construction organization chart for the project, showing the relationships between functions shown on the chart and the functional relationships with subcontractors. The chart shall indicate how the Proposer intends to divide the project into work segments to enable optimum construction performance.

  A description of those categories of work which the Proposer anticipates will be performed by the Proposer's own direct labor force and those categories which will be performed by subcontractors.

  The Proposer's plans and procedures to insure timely deliveries of materials to achieve the project schedule.

  Describe the overall strengths of the construction team and their ability to fulfill the construction management requirements of this project.

- **Maintenance and Protection of Traffic – 12 points**

  Describe the traffic control concept that will be used for each construction phase. Describe how traffic will be maintained through the project and describe the Proposer's understanding of the time restrictions noted in the RFP. Specifically describe how business and residential access will be maintained, if applicable.

- **Utility Relocation Plans – 5 points**

  Describe how any utility conflicts will be addressed.

- **Safety Plan – 5 points**

  Describe the safety considerations specific to the project. Discuss the Design-Build Team's overall approach to safety.

4. Oral Interview – 7 points

- **Content – 7 points**

The Design-Build Team's Project Management Team shall present a brief introduction of the project team. Introductory comments are to be held to a maximum of 15 minutes. The Department will use this interview to ask specific questions about the teams background, philosophies, and approach to the project. Presentation and questions and answers shall not exceed 90 minutes. A maximum of eight (8) people from the Design-Build team may attend.

The Department will use the information presented in the oral interview to assist in the evaluation of the technical proposal.

SELECTION PROCEDURE:

There will be a Technical Review Committee (TRC) composed of Project Managers, and three or more senior personnel from involved engineering groups that will evaluate the Technical Proposal on the basis of the criteria provided in the Design-Build Package.

The selection of a Design-Builder will involve both technical quality and price. At the location, time and date indicated in the Design-Build package, the technical proposals shall be submitted and will then be presented to the TRC for evaluation. The TRC shall first determine whether or not the proposals are responsive to the requirements of the Design-Build Package. Each responsive technical proposal shall be evaluated based on the rating criteria provided in the Design-Build Package. The TRC will submit an overall technical proposal score for each firm to the Manager of the Contract Office Section. A maximum quality credit percentage will be assigned for each project as determined by the TRC.

Quality Credit Evaluation Factors for Technical Proposals

Responsiveness to RFP	46
Innovation	20
Construction	27
Oral Interview	7
Maximum Score	100

The Manager of the Contract Office Section shall use a table based on the maximum quality credit percentage to assign a Quality Credit Percentage to each proposal based on the proposal's overall technical score. The maximum percentage for this project will be 15%.

Quality Credit Percentage for Technical Proposals

Technical Score	Quality Credit (%)	Technical Score	Quality Credit (%)
100	15.00	84	7.00
99	14.50	83	6.50
98	14.00	82	6.00
97	13.50	81	5.50
96	13.00	80	5.00
95	12.50	79	4.50
94	12.00	78	4.00
93	11.50	77	3.50
92	11.00	76	3.00
91	10.50	75	2.50
90	10.00	74	2.00
89	9.50	73	1.50
88	9.00	72	1.00
87	8.50	71	.50
86	8.00	70	0.00
85	7.50		

If any of the technical proposals were considered non-responsive, the manager of the Contract office will notify those Design-Builders of that fact. The Manager of the Contract Office shall publicly open the sealed price proposals and multiply each Design-Builder's price proposal by the Quality Credit Percentage earned by the Design-Builder's technical proposal to obtain the Quality Value of each Design-Builder's technical proposal. The Quality Value will then be subtracted from each Design-Builder's price proposal to obtain an Adjusted Price based upon Price and Quality combined. Unless all proposals are rejected, the Department will recommend to the State Transportation Board that the Design-Builder having the lowest adjusted price be awarded the contract. The cost of the design-build contract will be the amount received as the Price proposal.

The following table shows an example of the calculations involved in this process.

As Example of Calculating Quality Adjusted Price Ranking

Proposal	Technical Score	Quality Credit (%)	Price Proposal ($)	Quality Value ($)	Adjusted Price ($)
A	95	12.50	3,000,000	375,000	2,625,000
B	90	10.00	2,900,000	290,000	2,610,000
C	90	10.00	2,800,000	280,000	2,520,000*
D	80	5.00	2,700,000	135,000	2,565,000
E	70	0.00	2,600,000	0	2,600,000
* Successful Proposer – Contract Cost $2,800,000					

ROADWAY DESIGN SCOPE OF WORK:

- Check and complete the existing design and construct a new location 6-lane freeway from east of SR 2036, New Hope Road to existing US 64 near SR 1003, Rolesville Road. The project has been broken down into Part BB, C and CC. NCDOT has already designed approximately 80% of the project. Some modifications to the roadway plans will be required to get them into a final plan stage; however, every effort should be made to retain the existing horizontal and vertical alignments except as noted below. Right of way acquisition is well underway for all three parts and the permit application has been submitted for the project. Any alignment modification should not be revised without thorough review and written consent from the Department. However, due to commitments made to the city of Raleigh, no design changes to the horizontal and vertical alignments will be allowed on any alignment that will change the impacts to the "Anderson Point" park property. No additional right of way or easements will be allowed on the "Anderson Point" park property. The bridge on Rogers Lane into the "Anderson Point" park must be constructed and open to traffic within 18 months from the date of availability.

- The mainline design should meet Freeway standards, 110-km/hr (70mph)-design speed in rolling terrain. The current design was done in accordance with the 1994 AASHTO Guidelines, NCDOT Roadway Design Manual, January 1998 NCDOT Standard Drawings, July 1995 North Carolina Standard Specifications for Highways and Bridges, NCDOT Bridge Policy and any other standard guidelines and/or project special provisions contained herein. The design should be verified and adjusted to meet the 2001 AASHTO Guidelines, January 2002 NCDOT Standard Drawings, and January 2002 North Carolina Standard Specifications for Highways and Bridges. No Design Exceptions are expected, however proposed design exceptions will have to be reviewed and approved by the Department prior to incorporation into the design. The most recent Design Exception checklists will be provided to the short-listed teams.

- The Department will provide copies of the DEIS (Draft Environmental Impact Statement), FEIS (Final Environmental Impact Statement), ROD (Record of Decision), latest list of environmental commitments, municipal agreements and all pertinent approvals and correspondence for the Design-Build Team's use.

- The Department will furnish complete electronic surveys with all design files to the Design-Build Team. Known wetland limits are delineated and shown on the electronic plans.

- Designs are to be done in metric units utilizing Microstation J and GEOPAK 2001 software.

- All work is to be performed within the proposed right of way and easements denoted on the plans. Any additional retaining walls, special slope designs or additional right of way and/or easement acquisition resulting from the Design-Build Team's method of construction will be the responsibility of the Design-Build Team. The cost for same, whether initially included in the approved bid documents, or included as an approved Design-Build team's addition, will not be paid for separately, but will be considered as included in the lump sum price for the project.

- The Design-Build Team will be responsible for installing the proposed woven wire fencing along the proposed right of way and/or control of access limits as denoted on the right of way plans. The Design-Build Team shall make any fencing adjustments based on their revised design, revised structure lengths, etc. Fencing adjustments would also be necessary for any additional right of way that the Design-Build Team may propose to acquire along the mainline or intersecting -Y- Lines based on their design, if any. The limits of this work shall also include the control of access fencing around the proposed I-540 (East Wake Expressway) interchange to be constructed with future project R-2641. On Plan Sheet 21 of R-2547BB; Parcel 49 is to be acquired under Project R-2641, the control of access fencing limits for the design-build contract shall be down the northern property line of Parcel 49 which is the (common property line between Parcels 49, 50 and 51). The control of access fencing limits north of the future I-540 interchange are correctly denoted on Plan Sheet 24.

- NCDOT will provide the pavement designs for the mainline, ramps, loops and intersecting -Y- lines. The Design-Build team will provide any pavement designs for temporary pavement. Temporary pavement designs must be submitted to NCDOT for review. Please reference the Pavement Management Scope of Work.

- The outside and median-side paved shoulders should be 3.6m (12') wide and consist of full depth asphalt pavement as provided by NCDOT. In the area of the future (R-2641) East Wake Expressway Interchange, provide 3.6m (12') concrete paved shoulders in lieu of the full depth asphalt shoulders to accommodate the future acceleration and deceleration auxiliary lanes and tapers for this future interchange. These areas will serve as the interim outside paved shoulders until R-2641 is constructed. The ramp and loop gore areas shall be stubbed out for future alignments of (RPCA1, RPB1, LPC1, LPA1, RPD1 and RPAC1). The interim paved shoulders (future auxiliary lanes and tapers) shall be constructed on a 0.02 cross slope and/or required superelevation as needed for the ramp/loop alignment with proper rollovers used in the future gore areas. The preliminary grades for the ramps and loops have been provided. The mainline concrete pavement design will be utilized for this work.

- Milled Rumble Strips will be required on the outside and median-side asphalt paved shoulders (STD. DWG. 665.01). Rumble Strips are not required in the area of the future East Wake Expressway Interchange where concrete pavement is to be used for the interim paved shoulders (future ramp auxiliary lanes and tapers).

- A Shoulder Drain Detail and location recommendation for Part BB has been provided. This detail also applies to the mainline for Parts C and CC. It will be the responsibility of the Design-Build team to determine locations and install the shoulder drains for Parts C and CC and any additional locations on Part BB if necessary.

- Noise Wall design for the Baywood Forest subdivision, including any geotechnical information necessary to design the drilled shaft foundations and wall envelope detail will be the responsibility of the Design-Build Team. The wall shall be the NCDOT standard steel pile with precast concrete panel wall. Copies of the Final Noise Reports have been provided. Copies and attachments of Mr. Tim Rountree's letter of May 3, 2001 addressing the use of Sound Barrier Wall Standard Drawings and Design guidelines have been provided.

- The Privacy Wall for the city of Raleigh at the "Anderson Point" park will be designed by the Design-Build Team. The wall will be entirely brick on both sides and can be either a brick masonry wall design, or a brick pile panel design. The wall should meet the approval of the city of Raleigh. The Design-Build Team will be responsible for providing a wall envelope detail as well as any geotechnical information necessary to design and construct the wall and foundations. The wall serves as a noise and visual barrier for users within the park and will be 1.8m high in cut sections and 3m high in fill sections as shown on the proposed cross-sections.

- All guardrail and cable guiderail placement shall be in accordance with NCDOT standard drawings 862.01, 862.02, 862.03 and 865.01.

- Recognize the need for any special roadway design details and request special design drawings from the Design Services Unit (i.e. any special drainage structures, rock embankment, rock plating, special guardrail, retaining walls, concrete barrier designs, etc.)

- Any additional surveys, including but not limited to the existing and proposed roadways, structure sites, or underground utilities not currently shown on the plans will be the responsibility of the Design-Build Team to acquire and process.

- Project must continue to follow the step-by-step approval process with FHWA. The NCDOT-FHWA Oversight Agreement will be provided to the Design-Build Teams. This agreement includes information on the necessary submittals to FHWA. Copies of the previous approvals are provided. However, any design changes that affect these previous approvals, must be re-submitted to FHWA for approval by the Design-Build Team.

- Hard copies and electronic plans will be required as a deliverable to NCDOT for reviews.

- Project R-2547BA will be let to contract in May 2002 and construction coordination for the tie in at the western side of the Design-Build project must be achieved. (See the Project Special Provision entitled "Cooperation between Contractors" contained elsewhere.)

- The NCDOT has made commitments to the city of Raleigh regarding the "Anderson Point" park in addition to those stated above. The Design-Builder shall be bound by these commitments. These are as follows:

  The access to the lift station on the "Anderson Point" park property shall be maintained at all times.

  Temporary closures to the "Anderson Point" park will only be allowed between the hours of 10:00pm and 8:00am, and will require 2 week notification to the city of Raleigh.

  All utility services to the "Anderson Point" park shall be maintained. Any temporary disruption of services will only be allowed between the hours of 10:00pm and 8:00am, and will require 2 week notification to the city of Raleigh.

  The Design-Build Team shall restore the pond outside the right of way and within the temporary drainage easement, to the elevation as shown on the plans.

Pavement Scope:

The pavement design for the mainline will consist of the following:

290 mm Jointed Concrete Pavement with Dowels
75 mm PADL
25 mm S9.5A
Subgrade Stabilization (lime or cement as specified by geotechnical report).

In lieu of Subgrade Stabilization, 200 mm of Aggregate Base Course meeting all requirements of Article 520 of the Standard Specifications will be allowed

The mainline shoulders will consist of the following:

70 mm S9.5B

110 mm I19.0B
110 mm B25.0B
100 mm Aggregate Base Course

For the main-line tie-in at Existing US 64 the following design shall be used:
70mm S12.5C
110mm I19.0C
270mm B25.0C

Other pavement designs for this project are listed in the table below:

Line	Surface	Intermed.	Base	ABC	Sub. Stab.
R-2547BB					
EWE	70mm S12.5C	100 mm I19.0C	140 mm B25.0C	200 mm	Yes
RPB, RPC	60 mm S9.5B	-	-	200 mm	Yes
LPB, LPC	60 mm S9.5B	-	120 mm B25.0B	-	Yes
Y4-Hodge Road	60 mm S9.5B	60 mm I19.0B	-	200 mm	No
Y4- Narrow Widening	60 mm S9.5B	60 mm I19.0B	90 mm B25.0B	-	No
Y-10 Old Faisson Rd	60 mm S9.5B	55 mm I19.0B	-	200 mm	No
Y-10 Narrow Widening	60 mm S9.5B	55 mm I19.0B	90 mm B25.0B	-	No
Y-13 Rodgers Lane	60 mm S9.5B	70 mm I19.0B	-	200 mm	No
Y-15 Rodgers Lane Extension	60 mm S9.5B	120 mm I19.0B	-	150 mm	No
Y-20	60 mm S9.5B	-	-	200 mm	No
Service Road	60 mm S9.5B	55 mm I19.0B	80 mm B25.0B	-	No
Access Road				200 mm	
R-2547C (from east of Clifton Street to SR 2502)					
Y-14 Bethlehem Road	60 mm S9.5B	55mm I19.0B		200 mm	
Y-14 (narrow widen.)	60 mm S9.5B	55 mm I19.0B	90 mm B25.0B		
Y15A , Y15	60 mm S9.5B			200 mm*	
Y15A, Y15 (narrow widening)	60 mm S9.5B		90 mm B25.0B		
Y16 Smithfield Rd	60 mm S9.5B	75 mm I19.0B		200 mm	
Y16 (narrow widening)	60 mm S9.5B	75 mm I19.0B	90 mm B25.0B		
Y-16 Ramp A, B, C, D	60 mm S9.5B	55 mm I19.0B		200 mm*	Yes
R-2547CC (from SR 2502 to existing US 64 near SR 1003)					
Line	**Surface**	**Intermediate**	**Base**	**ABC**	**SubStab**
Y-1	60 mm S9.5C	80 mm I19.0C	90 mm B25.0B	200 mm	
Y-1 (narrow widening)	60 mm S9.5C	80 mm I19.0C	180 mm B25.0C		
Ramp A, B, C, D Y-1	60 mm S9.5B	60 mm I19.0C		200 mm.	Yes
Loop A Y-1	60 mm S9.5B	-	120 mm B25.0B	-	Yes
Y-3	60 mm S9.5B	120 mm I19.0B	-	150 mm	

Y-3 (narrow widening)	60 mm S9.5B	120 mm I19.0B	75 mm B25.0B	-	
Y-3 Ramp A, D	60 mm S9.5B	55 mm I19.0B	-	150 mm	Yes
Y-102	60 mm S9.5B	60 mm I19.0C	-	200 mm.	
Y-102 (narrow widen.)	60 mm S9.5B	60 mm I19.0C	90 mm B25.0B		
Service Roads	60 mm S9.5B			200 mm*	No

* Prime coat required.

The Design/Build team will be responsible for design of all temporary pavements and for evaluation of existing shoulders regarding their suitability for carrying traffic during construction if necessary. Temporary pavements will be designed in accordance with the most recent version of the North Carolina DOT Pavement Design Procedure. Temporary pavement designs are to be submitted for review and comment using the contract submittal process. The expected duration for traffic on the temporary pavement must be included as part of the submittal.

The Design Builder will be responsible for design of continuous shoulder drains and outlets. The shoulder drain design and outlet locations are to be submitted for review and comment using the contract submittal process. The shoulder drain design will be of the same general type as found in TIP project R-2547BA.

STRUCTURES SCOPE OF WORK :

Design shall be in accordance with the current AASHTO Standard Specifications for Highway Bridges, NCDOT Structure Design Manual, (including Structure Design Policy Memos), NCDOT Structure Design Unit Standard Drawings, NCDOT Bridge Policy Manual, AREMA, and Norfolk Southern Corporation Guidelines for Design of Grade Separation Structures.

Construction and Materials shall be in accordance with NCDOT Standard Specifications and NCDOT Structure Design Unit Project Special Provisions.

For the several stream crossings, no deck drains are allowed over open water, or Buffer Zone 1, and as much as possible, no deck drains shall be located over Buffer Zone 2.

Alternate designs, details, or construction practices (such as those employed by other states, but not standard practice in NC) are subject to Department review and will be evaluated on a case by case basis.

For the following sites structure design and plans were complete, however, where scope comments have been added below, the designs and plans must be changed to meet that scope of work stated below. Bridges on proposed US 64 Bypass at -L- POC Sta. 34+76.000 and -L- POC Sta. 42+57.000 shall accommodate a greenway path under the bridges and along both sides of the river as indicated on the plans provided: a graded shelf at least 20 feet wide with 10 feet of vertical clearance is required.

-L- POC Sta. 33+96.655
Bridge on Rogers Lane Extension over Proposed US 64 Bypass, Crabtree Creek and Norfolk Southern Railway

-L- POC Sta. 34+76.000
Dual Bridges on Proposed US 64 Bypass over Crabtree Creek

-L- POC Sta. 39+55.967
Bridge on Rogers Lane over Proposed US 64 Byp. and Norfolk Southern Railway
Due to commitments made to the City of Raleigh at this site the following changes shall be incorporated. A Two Bar Metal Rail (STD. BMR 3) shall be used on both sides of the bridge. On the sidewalk side, the concrete parapet height shall be increased by 2" and the metal post decreased by 2". The sidewalk concrete shall be integrally colored, with an additive such as iron oxide, to match or compliment the brick privacy wall. The color selection shall be coordinated with the City. The surface of the sidewalk shall be trowel finished in a square block pattern with approximately 500mm squares. The length of protective fence detailed behind the sidewalk shall be limited to the Railroad's right of way. Further changes are prohibited at this site.

-L- POT Sta. 59+94.797
Bridge on Hodge Road (SR 2516) over Proposed US 64 Bypass

-L- POT Sta. 79+28.84
Reinforced Concrete Box Culvert

-L- POT Sta. 145+85.500
Dual Bridges on Proposed US 64 Bypass over Mark's Creek
The plans for this site should be revised as necessary so that toes of end slopes does not encroach on Buffer Zone 2.

-L- POC Sta. 152+02.624
Bridge on Knightdale Eagle Rock Road (SR 2501) over Proposed US 64 Bypass

-L- POT Sta. 154+78.500
Reinforced Concrete Box Culvert

-L- POT Sta. 158+71.600
Reinforced Concrete Box Culvert

-L- POT Sta. 159+66.694
Dual Bridges on Proposed US 64 Bypass over Norfolk Southern Railway

-L- POC Sta. 166+15.656
Dual Bridges on Proposed US 64 Bypass over Ramp BDY1

-L- POC Sta. 168+63.040
Dual Bridges on Proposed US 64 Bypass over US 64 Business

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-Y1- POC Sta. 23+13.3776
Bridge on Ramp BDY1 over US 64 Business

-L- POT Sta. 174+48.231
Bridge on Rolesville Road (SR 1003) over US 64

For the following sites structure design and plans have been prepared; however, the plans shall be revised such that the distance between the end of the Neuse River structures and the beginning of Mango Creek structures is bridged (no fill is allowed in this area). In addition, the spill through end bent slopes shall not encroach into Buffer Zone 2.

These dual bridges shall meet the "BRIDGE DECK RIDEABILITY" specification. The concrete deck thickness and the cover to the top mat of reinforcing steel shall be increased by 10 mm over the standard concrete deck thickness to allow for grinding the deck required in the specification.

-L- POT Sta. 42+57.000
Dual Bridges on Proposed US 64 Bypass over Neuse River

-L- POC Sta. 45+48.876
Dual Bridges on Proposed US 64 Bypass over Mango Creek

If it is determined that any of the plans provided contain errors, the successful Design Build team shall coordinate directly with the engineer of record to resolve such errors. The Department assumes no responsibility for the accuracy of the plans provided.

For the following sites structure design and plans shall conform with the partially complete Roadway Plans, the approved Structure Recommendations and the Bridge Survey Report (when applicable):

-L- 39+10 Right through -L- 41+20 Right
Retaining Wall
For wall envelope and details see Roadway Plans.

-L- POC Sta. 91+03.362
Bridge on Bethlehem Road (SR 2049) over Proposed US 64 Bypass
Designs introducing shoulder piers or other obstructions at the shoulder are prohibited for this site.

-L- POS Sta. 103+73.500
Dual Bridges on Proposed US 64 Bypass over Poplar Creek

-L- POT Sta. 111+51.291
Dual Bridges on Proposed US 64 Bypass over Smithfield Road (SR 2233)

For Bridges at -L- POC Sta. 33+96.655, -L- POC Sta. 39+55.967 and -L- POT Sta. 159+66.694 plan approval has been received from Norfolk Southern Corporation, the Railroad Agreement has been executed and the Railroad Special Provisions are complete. The Design/Build Team is responsible for coordination of the work with Norfolk Southern Corporation as outlined in the Agreement (including Force Account items) and Special Provisions. Note: Norfolk Southern Corporation has committed to furnishing only one flagman, limited to 50 hours per week. Furthermore, coordination with J. N. Carter, Jr., Chief Engineer, Bridges and Structures, Norfolk Southern Corporation, 99 Spring Street, S.W., Atlanta, Georgia 30303-0142 (contact is David Wyatt, phone 404-529-1641) as a result of any redesign efforts and any costs associated with the same is the responsibility of the Design/Build Team. Redesigns introducing crashwalls are prohibited. The Department will be responsible for payment of the Railroad's Force account work; however, the Design/Build Team shall reimburse the Department for these costs including any Force Account estimate overruns.

BRIDGE DECK RIDEABILITY

1.0 General

This special provision applies only to the dual bridges on US 64 Bypass over Neuse River, Wetlands, and Mango Creek (also described as Bridges -L- POT Sta. 42+57.000 through -L- POC Sta. 45+48.876). This special provision shall govern testing, longitudinal planing, and all other related work associated with obtaining satisfactory rideability of the bridge deck surface.

2.0 RIDEABILITY REQUIREMENTS

The entire bridge deck surface shall be tested with a Rainhart Profilograph (Model 1, No. 860) in accordance with the criteria herein. The profilograph testing shall be performed by an independent provider approved by the CEI Firm, using equipment calibrated for both height and distance in accordance with ASTM E1274. Calibration results shall be submitted to the CEI Firm for approval prior to testing of the bridge deck. The deck area subject to this testing includes all traffic lanes.

Prior to initial profilograph testing, placement of the bridge deck and barrier rail shall be completed within the section to be tested, with the exception of blockouts required for the installation of joints. Do not install joints until the CEI Firm determines that the rideability requirements herein have been met. Joint locations may be temporarily bridged to facilitate operation of the profilograph and corrective equipment across the joint. All obstructions shall be removed from the bridge deck and the surface shall be swept clean of debris prior to testing. No radio transmissions or other activities that might disrupt the automated profilograph equipment shall be allowed during the testing.

The wheels of the profilograph shall be checked to ensure proper tire pressure as per manufacturer's recommendations. Tires shall be maintained free of debris and buildup during each test run. The profilograph shall be operated at a maximum speed of 3.2 kilometers per hour. Profiles shall be taken with the recording wheel parallel to and approximately 1 meter inside the two outer edges of each travel lane.

Each profilogram shall be plotted at a horizontal scale of 1:250 with the vertical scale plotted at a true scale. Station numbers shall be recorded on the profilogram at distances not to exceed 100 m. Joint locations shall be noted on the profilogram. The Profile Index for each wheel path shall be determined in accordance with the procedure entitled "Determination of Profile Index" available through the CEI Firm.

A Profile Index per lane shall be determined by averaging the index for the right and left wheel paths for each test section. A test section is defined as a 200 meter length of each lane. The profilogram and Profile Index calculations for all test sections shall be submitted to the CEI Firm for review. The maximum allowable Profile Index shall not exceed 95 mm per kilometer as determined with a 5 mm blanking band. Individual high points or depressions having deviations in excess of 7.5 mm in 7.5 m on the profilogram shall be corrected by planing. Additionally, the surface shall meet a 5 mm in 3 meter straightedge check made atop the deck as deemed necessary by the CEI Firm.

Concrete surfaces outside the traffic lanes along barrier rails and in the area of joint blockouts are not subject to the profilograph requirements. The rideability of these surfaces shall meet a 5 mm in 3 meter straightedge check made atop the deck following all planing on the bridge as deemed necessary by the CEI Firm.

3.0 PLANING

If any portion of the bridge decks in any span does not meet the rideability requirements above, the full width of all lanes and shoulders in that direction of travel shall be planed beginning 50 meters before and ending 50 meters beyond the limits of the unacceptable test section. Additional planing beyond these limits may be required as deemed necessary by the CEI Firm. Planing shall be conducted using an approved self-propelled grinding machine with gang mounted diamond saw cutting blades specifically designed for such work. The machine shall have a minimum wheel base length of 4.6 m. It shall be constructed and operated such that it will not cause strain or damage to the deck surface, excessive ravels, aggregate fractures, spalls, or disturbance of transverse joints. The deck shall be longitudinally planed parallel to the roadway centerline. In all cases, after the surface removal by all passes of the planing equipment, the final bar cover shall not be less than plan cover minus 15 mm. In cases where this cannot be achieved, other corrective work may be required as directed by the CEI Firm.

All slurry or other debris resulting from the grinding operations shall be continuously removed from the surfaces by vacuum pick-up or other approved methods. The slurry must be prevented from flowing into deck drains or onto the ground or body of water under the bridge. All residue shall be disposed off the project.

The Contractor shall provide additional profilograph testing as necessary following planing and any other corrective actions, until the rideability requirements above are satisfied.

HYDRAULICS DESIGN SCOPE OF WORK

- Review Drainage Design
- All design in accordance with criteria provided in the North Carolina Division of Highways "Guidelines for Drainage Studies and Hydraulics Design-1999" and the addendum "Handbook of Design for Highway Drainage Studies-1973"
- Bridge end bent spill through slopes shall not encroach into buffer zone 2 except on Mark's Creek –Y-101 end bent 1. Toe of fill slope at end bent 1 shall begin at station 17+93 –Y-101.
- Bridge end bent slopes in cut shall be a minimum of 2:1
- No vertical abutments allowed at stream crossings

CONSTRUCTION INSPECTION SCOPE OF WORK:

The Design-Build team shall employ a private engineering firm to perform Construction Inspection for all work required under this contract. This private engineering firm is to be a separate entity, unaffiliated with the Design-Builder in any way. Private engineering firms must be prequalified under the Department's normal prequalification procedures prior to bid submission. This Scope of Work describes and defines requirements for the construction inspection, materials sampling and testing, and technician level contract administration by the private engineering firm (commonly referred to as "Construction Engineering & Inspection" (CEI) firms) required for construction of this project.

A. General

A.1 The CEI firm shall be responsible for all construction inspection, field materials sampling and testing, and technician level contract administration for the construction of the project.

A.2 The CEI firm shall be responsible for all technician level construction administrative functions as defined in this scope of work and in accordance with the Department's Construction Manual and any other referenced manuals and processes.

A.3 The CEI firm shall utilize effective control procedures such that the construction of the project is performed in reasonably close conformity with the plans, specifications, and contract provisions.

A.4 The CEI firm shall be responsible for providing qualified technical personnel in appropriate numbers at the proper times such that all contract administration responsibilities are effectively carried out. Qualified technicians shall have all certifications necessary to perform the work required under this contract. For this project the CEI firm shall provide a minimum of 20 employees.

A.5 All work shall be performed in accordance with the established standard procedures and practices of the DEPARMENT. The CEI firm shall be familiar with Departmental standard procedures and practices as set forth in the Construction Manual and associated manuals and with informal procedures and practices for construction contract administration used by the DEPARTMENT. This includes adhering to all safety policies and procedures established by the DEPARTMENT. Failure on the part of the CEI Firm to perform this work as expected will result in suspension of all work on the project until adequate inspection processes are in place.

B. Work Standards

B.1 It shall be the responsibility of the CEI firm to ensure that the project is constructed in reasonably close conformity with the plans, specifications, and contract provisions.

B.2 The CEI firm shall document any observed omissions, substitutions, defects, and deficiencies noted in the work, take corrective action necessary, and advise the DEPARTMENT accordingly.

B.3 The CEI firm shall, in a timely manner make normal and routine project decisions consistent with the DEPARTMENT'S policies and procedures and general guidance by the DEPARTMENT'S Resident Engineer.

B.4 The CEI firm shall make and record such measurements as are necessary to assure that minimum sampling and testing requirements are being met and to calculate and document quantities for payment as required.

B.5 The CEI firm shall monitor on-site and off-site construction operations and inspect all materials entering into the work as required such that the quality of workmanship and materials is such that the project will be completed in reasonably close conformity with the plans, specifications, and other contract provisions. The CEI firm shall keep detailed, accurate records daily of construction operations and significant events that affect the work.

B.6 The standard procedures and practices of the DEPARTMENT for inspection of construction projects are set out in the DEPARTMENT'S Construction Manual. The CEI firm shall perform inspection, sampling and testing, and technician level contract administration in accordance with these standard procedures and practices and other accepted practices as may be appropriate.

B.7 The CEI firm shall perform field sampling and testing of component materials as described in the Minimum Sampling Guide and completed work items such that the materials and workmanship incorporated into the project are in reasonably close conformity with the plans, specifications, and contract provisions. CEI firm personnel performing sampling and testing must have appropriate certifications for each test that is performed.

B.8 The CEI firm shall perform all necessary review and inspection of the hot-mix asphalt roadway operations.

B.9 The CEI firm shall maintain, on a daily basis, a complete and accurate record of all activities and events relating to the project and a record of all construction work completed, including quantities of materials used and work accomplished in conformity with the DEPARTMENT'S policies and procedures.

B.10 The CEI firm shall prepare inspector's daily reports of the construction operations in accordance with the DEPARTMENT'S Construction Manual. These shall be forwarded to the Department's Resident Engineer on a daily basis.

B.11 The CEI firm shall maintain records of all sampling and testing accomplished and analyze such records required such that acceptability of materials and completed work items is determined. The CEI firm shall furnish records on a

weekly basis to the Department's Resident Engineer for inclusion into the HiCAMS computer system.

B.12 The CEI firm shall, at a minimum, each month prepare a comprehensive tabulation of the quantity of each work item satisfactorily completed to date. Quantities shall be based on daily records or calculations. Calculations shall be retained. The tabulation will be submitted to the DEPARTMENT'S Resident Engineer who shall prepare and submit the progress payment estimate.

B.13 The CEI firm shall provide timely interpretations of the plans, specifications, and contract provisions. The CEI firm shall consult with the DEPARTMENT'S Resident Engineer when an interpretation involves complex issues or may have a significant impact on the cost of performing the work or is known to be an area of dispute with the Design-Builder.

B.14 The CEI firm shall monitor each construction operation to the extent necessary to determine whether construction activities violate the requirements of any permits. The CEI firm shall notify the Design-Builder immediately of any violations or potential violations and require his immediate resolution of the problem. Permit violations shall be reported to the DEPARTMENT'S Resident Engineer immediately.

B.15 If ground disturbing activities are a part of this project, the CEI firm shall perform an erosion control inspection daily and/or after every significant rainfall event. The CEI firm shall inspect all erosion and sediment control measures at the end of each working day to ensure all measures have been properly installed or reinstalled if the measures were removed to perform the work. The list of deficiencies will be provided to the DEPARTMENTS' Resident Engineer as well as the Design-Builder's Project Manager. The CEI firm shall maintain an updated set of erosion control plans in accordance with DEPARTMENT policy.

The CEI firm shall have a dedicated erosion control inspector who is knowledgeable of current North Carolina Sediment and Erosion Control Laws and vegetation establishment and maintenance techniques.

C. Data and Services to be Furnished by the Department

C.1 The DEPARTMENT will furnish to the CEI firm Construction Manuals, Minimum Sampling Guides, Standard Specifications, project diaries, and any Departmental forms necessary for the performance of the Scope of Work.

C.2 The DEPARTMENT will perform Quality Assurance on a minimum of 10% of the samples taken. The Department reserves the right to inspect any and all processes and procedures at any time.

D. Miscellaneous Provisions

D.1 The control and supervision of all phases of the Scope of Work performed by the CEI firm shall be under the direction of a Professional Engineer or a person with an acceptable combination of education and experience. The CEI firm shall assign at all times a staff of competent, qualified technicians adequate in number and experience to perform the described Scope of Work.

D.2 The CEI firm shall maintain all books, documents, papers, accounting records, and other information pertaining to costs incurred on this project and to make such materials available at its offices at all reasonable times during the contract period and for three (3) years from the date of final payment by the DEPARTMENT, the Federal Highway Administration, or any authorized representative of the DEPARTMENT or Federal Highway Administration. Copies thereof shall be furnished to the DEPARTMENT and/or Federal Highway Administration if requested.

D.3 Employees of the CEI firm or employees of any subconsultant for the CEI firm to provide inspection services for this project shall comply with the DEPARTMENT'S ethics policy. Failure to comply with the ethics policy will result in the employee's removal from the project and may result in removal of the CEI firm from the DEPARTMENT'S list of prequalified Engineering Firms for Construction Engineering and Inspection.

D.4 The DEPARTMENT shall have the right to approve or reject any personnel, assigned to a project by the CEI firm.

E. Compensation

E.1 No direct compensation will be made for the work of "Construction Inspection". It is included in the lump sum line item for design and construction of the entire project. No separate payment will be made for vehicles, office space, inspection equipment, materials, training requirements, surveying equipment, or any other incidentals as may be necessary to accomplish this work.

F. Other

F.1 The Resident Engineer & the Assistant Resident Engineer will be Department employees maintaining their traditional duties and responsibilities.

F.2 All QMS asphalt lab Quality Assurance testing necessary for this project will be performed by the Department.

F.3 Materials sampling, testing, or approval required in state or out of state precast concrete, steel manufacturing, and other fabricating facilities where the Department's Materials and Tests Unit routinely performs these functions will continue to be performed by the Department.

F.4 DBE goals for this contract do not include participation by any DBE CEI firms. Contract goals must be met utilizing highway construction contractors.

ENVIRONMENTAL REGULATORY ISSUES SCOPE OF WORK:

A) PERMITS:

1 Permits (US Army Corps of Engineers 404 and NC Department of Natural Resources, Division of Water Quality Section 410) for the referenced project will be secured by NCDOT.

2 The Design-Builder is bound by the terms of the permit and is held accountable for meeting all permit conditions. In the event that, after award of contract, there is a changed condition or a decision to construct the project outside of the condition of the existing permit it will be the Design-Builder's responsibility to prepare all revised drawing(s), prepare the modification(s) and submit these documents to the Department for review and processing through the regulatory agencies. The Design-Builder is advised that the Department will not be held responsible for time delays or guarantee that the proposed Design-Builder modification(s) can be obtained. In such an event it will be the Design-Builder's sole responsibility to assume all costs and delays, which may result in penalties associated with the modification request.

Additionally, should the Design-Builder modification involve additional compensatory mitigation it will be the Design-Builder's responsibility to provide the mitigation and absorb all costs associated with the mitigation. The Department will petition for the modification; however, the Department will not be held accountable, in any manner, for construction delay(s).

3 If any staging areas are located outside the existing right-of-way, the Design-Builder shall engage the services of a competent environmental consultant to conduct a full environmental investigation to include but not be limited to Federally listed Threatened and Endangered Species, wetlands, streams, buffers, avoidance and minimization in jurisdictional areas, compensatory mitigation, FEMA compliance, and historical surveys in these areas.

B) COMMITMENTS:

1 Design Build Commitments: The design of the project is final in those areas under the jurisdiction of the federal Clean Water Act. The NCDOT hereby commits to

ensuring, to the greatest extent possible, that the footprint of the impacts in these jurisdictional areas will not be changed during the design build effort.

2 The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize wetland impacts, and to provide full compensatory mitigation of all remaining wetland impacts. Avoidance measures were taken during the planning and DEIS/FEIS, ROD phases; minimization measures were incorporated as part of the project design. The Design-Builder will incorporate these avoidance and minimization features into the design.

3 All wetland areas not affected by the project will be protected from unnecessary encroachment.

4 No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.

5 Marks Creek bald cypress avoidance: The EPA noted in their comments on the DEIS that there was a population of bald cypress (*Taxodium distichum*) in this vicinity of the Neuse River basin. They stated that this is a notable inland range extension from its normal occurrence in coastal plain environments. The EPA further stated that this may warrant special avoidance/protection provisions (see ROD). The NCDOT has revised the alignment to avoid that ecosystem. There the proposed alternative departs from the protected alignment from one mile east of Smithfield Road to 0.3 miles east of Marks Creek, a distance of approximately 1.7 miles to avoid impacts on these bald cypress. The Design Builder plans must also respect this request.

6 High Quality Waters BMP: NCDOT has committed (ROD) that "construction related impacts associated with the proposed action will be minimized through the use of High Quality Waters erosion and sediment control measures. The Design Builder plans must also respect this request.

7 Slopes: Fill slopes in wetlands must be at a 2:1 ratio.

8 Ditching: It is the policy of the NCDOT to eliminate lateral ditching in wetlands as much as possible, thus preserving the hydrology of adjacent wetlands. The Design Builder plans must also respect this policy.

9 Median Width: The project was designed using a 46-foot median width. The Design Builder must not use median greater than 46 feet in width in jurisdictional areas.

10 Method of Clearing: Projects R-2547C, R-2547BB, and R-2547CC will use Method III.

11 R-2547C Site 5a at Sta. 10+30+: A noise wall is located at this site which crosses the creek perpendicularly. The noise wall is located in the shoulder of the proposed highway fill slope. The noise wall will not result in additional impact to the Neuse Buffer areas and is an integral part of the highway construction. Therefore, based on information provided by DWQ this noise wall will be considered part of the highway

project and thus not require a variance. The Design Builder plans must also design the project so that the noise wall is in the shoulder of the highway.

12 No activity by the Design-Builder will be allowed in the on-site mitigation sites as described below:

a **MARKS CREEK MITIGATION SITE:** NCDOT has identified the "Marks Creek Mitigation Site" along Marks Creek and unnamed tributaries to Marks Creek in Wake County as a mitigation site for wetland impacts associated with the construction of the US 64 Knightdale Bypass (R-2547/R-2641). The NCDOT purchased the 228-acre parcel from Mr. Temple Sloan in June 2000 as part of the right-of-way acquisition for the proposed highway project. A large portion of the parcel will be impacted by the highway project, leaving 66 acres available for use as a mitigation site. The proposed highway project to the west and north, Marks Creek to the east, and the powerline easement to the south border the site. The site is comprised of several unnamed tributaries to Marks Creek, wet pasture wetlands, a small beaver pond, a large man-made pond, and adjacent uplands. The Site will provide wetland restoration, creation, and enhancement as well as riparian buffer restoration and upland buffer. The mitigation plan will be accomplished in two phases as described in detail in the attached Mitigation Plans. **The Design-Builder must stay out of this mitigation site.**

i Phase I consists of the enhancement of the pasture wetlands, the restoration of the riparian buffer on the west side of the creek, and planting of the upland buffer. The site will yield 24 acres of wetland enhancement. This credit will be used to offset the impacts of projects R-2000F and G, which are contiguous to the proposed highway project (R-2547/R-2641).

ii Phase II consists of 8.4 acres of wetland restoration (4.4 acres plus 4.0 acres), and 2.3 acres of wetland creation. We propose to use 4.4 acres of the wetland restoration acreage for mitigating the impacts from project R-2547/R-2641 as presented on page 38 of the attached Marks *Creek, Phase II Mitigation Plan.* As noted in that Plan, the restoration site was a 10-acre pond created in the 1970s.

b **MINGO CREEK MITIGATION SITE:** This site located adjacent to the proposed highway project consist of 28.8 acres of vegetated wetland, 6590 linear feet of streams, and 22 acres of forested buffer reservation adjacent to the jurisdictional areas. The site will protect and manage a stream/wetland complex and adjacent riparian buffers and upland forest at a strategic location in the Neuse River basin. **The Design-Builder must stay out of this mitigation site.**

13 The designs and parameters presented in the appended Neuse River Addendum will be followed by the Design-Builders.

14 All work by the Design-Builder must be prepared in strict compliance with the plans submitted with the Section 404, 401 and Neuse Buffer permit applications.

15 Appropriate sediment and erosion control practices which exceed or equal those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" or the "North Carolina Surface Mining Manual" (available from the Division of Land Resources in the DENR Regional or Central Offices) shall be utilized to prevent excedances of the appropriate turbidity water quality standard (50 NTU's in all fresh water streams and rivers not designated as trout waters; 25 NTU's in all lakes and reservoirs, and all saltwater classes; and 10 NTU's in trout waters);

16 All sediment and erosion control measures placed in wetlands or waters shall be removed and the natural grade restored after the Division of Land Resources has released the project;

17 Measures shall be taken to prevent live or fresh concrete from coming into contact with waters of the state until the concrete has hardened;

18 The Design-Builders and/or agents shall not excavate, fill, or perform mechanized land clearing at any time in the construction or maintenance of this project within waters and/or wetlands, except as authorized by this permit, or any modification to this permit. There shall be no excavation from or waste disposal into jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit.

19 To ensure that all borrow and waste activities occur on high ground, except as authorized by this permit, the Design-Builders and/or agents to identify all areas to be used to borrow material, or to dispose of dredged, fill, or waste material. The Design-Builders shall ensure that all such areas comply with condition (5) of this permit, and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project. This information will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with all conditions outlined above.

20 The Design-Builders and/or agents to comply with the terms and conditions of all permits in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of the permits.

21 All fill material will be immediately stabilized and maintained to prevent sediment from entering adjacent waters or wetlands.

22 Prior to commencing construction within jurisdictional waters of the United States, the Design Builder shall forward the latest version of project construction drawings to the Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager. Half-size drawings are acceptable.

23 The Design Builder shall schedule an onsite preconstruction meeting between its representatives, the Design-Builder's representatives, and the Corps of Engineers,

Raleigh Regulatory Field Office NCDOT Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all of the terms and conditions contained within the Department of the Army Permit. The Design-Builder shall notify the Corps of Engineers Project Manager a minimum of thirty (30) days in advance of the scheduled meeting in order to provide that individual with ample opportunity to schedule and participate in the required meeting.

24 No excavated or fill material will be placed at any time in waters or wetlands outside the permitted construction areas, nor will it be placed in any location or in any manner so as to impair surface water flow into or out of any wetland area.

25 All fill material will be clean and free of any pollutants except in trace quantities. Metal products, organic materials, or unsightly debris will not be used.

26 The Design Builder must stay out of all wetlands and streams in the adjacent TIP Project Number R-2641.

C) **ARCHAEOLOGICAL SITES:**

1 NCDOT is in the process of finalizing and signing the Memorandum of Agreement (MOA) regarding the archaeological sites located in R-2547/R-2641. There are two archaeological sites in the R-2547 CC project limits which require data recovery. These sites are located as follows:

Plan Sht.	Location	Station Range	Property Owner
10	**S. of Centerline -RPCY1-**	**13+60 and 14+40**	**J.G. Winston, Heirs**
11	**W. of Centerline - RPAY1-Partnership**	**15+20 and 16+60**	**Knott Farm Limited**

NCDOT has gained assess (via Agreement of Entry or condemnation) to the properties on which the archaeological sites are located. Upon receipt of a signed MOA the NCDOT will develop Data Recovery Plans for each site in consultation with the North Carolina State Historic Preservation Office (NCSHPO). Based on the Data Recovery Plans a Scope of Work for the archaeological consultants will be developed regarding the National Register eligible sites. **The Data Recovery for the archaeological sites is independent of the Design-Build contract.**

2 ANY ACCESS to the referenced sites MUST be coordinated with the NCDOT - Project Development and Environmental Analysis Branch (PDEA), Human Environment Unit prior to the completion of the Data Recovery.

3 It is anticipated that the Data Recovery Field Investigations for these sites will be completed prior to the Design-Build award in May 2002. However, should the Data Recovery still be ongoing at these sites there will be NO CONSTRUCTION activity

within the above noted areas until the Design-Build team has received written notification of completion of the Data Recovery from NCDOT-PDEA, Human Environment Unit.

4 If the Design-Builder discovers any previously unknown historic or archeological remains while accomplishing the authorized work, he will immediately notify the Wilmington District Engineer who will initiate the required State/Federal coordination.

5 All questions regarding these sites should be addressed to Mr. Matthew Wilkerson, NCDOT Staff Archaeologist (919) 733-7844 extension 279 or Mr. Michael Penney, NCDOT Project Development Engineer (919) 733-7844 extension 260.

TRAFFIC CONTROL PLAN SCOPING DETAILS:

I. GENERAL REQUIREMENTS

1-TRAFFIC CONTROL PLANS

Design and prepare the Traffic Control Plan for the project. The Traffic Control Plan must be submitted to NCDOT for review and approval. Comply with the time-frame specified in the project schedule for the review and return of the Traffic Control Plan. Development of the Traffic Control Plan should proceed as follows:

- Submit for approval a Staging Concept for construction of the project. A Staging Concept is a description of the sequenced phases and steps to be followed in implementing the construction plans. The Staging Concept must be approved before proceeding further with the development of the Traffic Control Plan.

- NCDOT presently has a staging concept that will be provided for project “CC”. This plan may be used in its entirety, partially or discarded altogether.

- Coordinate with Contractor on project “BA” to ensure corridor is opened from Rolesville Road to the Raleigh Beltline on the same day.

- Construction can proceed only with an approved and sealed Traffic Control Plan, including phasing. A total Traffic Control Plan set will not be required to begin phased construction activities on this project. Upon approval of the Staging Concept, proceed with the development of the Traffic Control Plan for each Phase. Construction can begin on a Phase once the Traffic Control Plan for that Phase has been approved and sealed.

The Traffic Control Plan will include lane closures, detours, temporary pavement construction, traffic control devices, temporary lane markings, construction signing and project notes. The plan will identify lane widths, transition taper widths and any geometry necessary to define temporary roadway alignments, including crossovers. The plan will address the pavement design to be used for temporary roadway pavements and the riding surface for temporary patterns on existing/proposed roadways. North Carolina Department of Transportation Roadway Standard

Drawings for Traffic Control will be incorporated into the plans for most work activities and detailed phasing plans will be required where traffic control activities and device placement cannot be entirely covered by these standard drawings.

Develop Traffic Control Plan details to be at a scale of 1:500 unless otherwise agreed upon (overviews should be at a scale of 1:2000). The North Carolina Department of Transportation's Traffic Control Web Page should be utilized when developing the Traffic Control Plan. The Traffic Control Web Page is continuously updated and provides key information necessary in preparing the Traffic Control Plan. For any additional information, contact the Traffic Control Section at (919) 250-4159.
Website Address: http://www.doh.dot.state.nc.us/preconstruct/traffic/congestion/tc/

Coordinate with the Engineer to promote public awareness for this project. Hold coordination meeting with the NCDOT one month prior to beginning of construction. The NCDOT will be responsible for the initial public information effort through it's IMPACT team. Once the project is announced formally to the public, it will be the Design-Builder's responsibility to hold public meetings and press conferences, making media announcements, distributing flyers, and posting advertisements.

In addition, inform the following groups at least 2 weeks in advance of any construction activities which will have significant impact on the public:
Governmental agencies, municipalities directly affected by the construction, transportation services, emergency services, neighborhood groups, private homes, industry and businesses, and any other organization as deemed necessary by the Engineer.

Use traffic control devices that conform to all NCDOT requirements and are listed on the Department's Approved Products List. Traffic counts will be provided for use during development of traffic control plans and to verify time restrictions listed under project requirements

2-FINAL PAVEMENT MARKING PLANS

Prepare Final Pavement Marking Plans at a scale of 1: 500 unless otherwise agreed upon. Plans will consist of typical plans for installation (NCDOT Roadway Standard Drawings for Pavement Markings will be used where applicable). Prepare detailed plans showing lane lines, edge lines, gore markings, stop bars, symbols and word messages, crosswalks and other appropriate markings. In addition, prepare detailed plans for all signalized intersections and any locations where North Carolina Roadway Standard Drawings do not completely describe the required markings.

Use pavement marking products listed on the Department's Approved Products List and install according to the NCDOT Specifications and in accordance with manufacturer's requirements. For any additional information, contact the Traffic Control Section at (919) 250-4159.

II. PROJECT REQUIREMENTS

The following requirements apply at all times for the duration of the construction project.

TIME RESTRICTIONS

A) The Design-Builder shall not close or narrow a lane of traffic during the following time restrictions:

Road Name	Day and Time Restrictions
Hodge Rd	6:00am to 9:00am and 3:30pm to 7:00pm, Mon. thru Fri.
Old Faison Rd.	"
Bethlehem Rd.	"
Smithfield Rd.	"
Rolesville Rd.	"
US 64 Business(Alternate)	EB Lanes 3:30pm to 7:00pm, Mon. thru Fri.
	WB Lanes 6:00am to 9:00 am, Mon. thru Fri.
US 64	EB Lanes 3:30pm to 7:00pm, Mon. thru Fri.
	WB Lanes 6:00am to 9:00am, Mon. thru Fri.

The Liquidated Damages for this Time restriction are One Thousand Dollars ($1,000.00) per hour.

B) Do not stop traffic or close road on **US 64** as follows:

Monday-Sunday 6:00am-12:00am (midnight)

The Liquidated Damages for this Time restriction are One Thousand Dollars ($1,000.00) per hour.

C) Do not conduct multi-vehicle hauling during peak hours on the following:

Multiple vehicle hauling is defined as the hauling of equipment or materials to or from the project with delivery at intervals of less than five minutes and/or results in more than one vehicle at a particular work site at one time.

Road Name	Day and Time Restrictions
Hodge Rd	6:00am to 9:00am and 3:30pm to 7:00pm, Mon. thru Fri.
Old Faison Rd.	"
Bethlehem Rd.	"
Smithfield Rd.	"
Rolesville Rd.	"
US 64 Business(Alternate)	EB Lanes 3:30pm to 7:00pm, Mon. thru Fri.
	WB Lanes 6:00am to 9:00 am, Mon. thru Fri.
US 64	EB Lanes 3:30pm to 7:00pm, Mon. thru Fri.
	WB Lanes 6:00am to 9:00am, Mon. thru Fri.

Submit to the Traffic Control Section a detail plan for work zone access. Multi-vehicle hauling during daytime non-peak hours can begin once the work zone access plan has been approved.

D) Do not close or narrow travel lanes on US 64 during holidays and special events as follows:

Holiday

For New Year's, between the hours of 6:00 am December 31st to 7:00 pm January 2nd. If New Year's Day is on a Saturday or a Sunday, then until 7:00 pm the following Tuesday.

For Easter, between the hours of 6:00 am Thursday and 7:00 pm Monday.

For Memorial Day, between the hours of 6:00 am Friday to 7:00 pm Tuesday.

For Independence Day, between the hours of 6:00 am the day before Independence Day and 7:00 pm the day after Independence Day.

If Independence Day is on a Saturday or Sunday, then between the hours of 6:00 am the Thursday before Independence Day and 7:00 pm the Tuesday after Independence Day.

For Labor Day, between the hours of 6:00 am Friday to 7:00 pm Tuesday.

For Thanksgiving, between the hours of 6:00 am Tuesday to 7:00 pm Monday.

For Christmas, between the hours of 6:00 am the Friday before the week of Christmas Day and 7:00 pm the following Monday after the week of Christmas.

The Liquidated Damages for this Day/Time and Holiday restriction are One Thousand Dollars ($1,000.00) per hour.

LANE CLOSURE REQUIREMENTS

D) Remove lane closure devices from the lane when work is not being performed behind the lane closure or when a lane closure is no longer needed.

E) Close the open travel lane adjacent to the work area when personnel and/or equipment are within 1.5m of the open travel lane on an undivided facility or within 3m of the open travel lane on a divided facility. Use Roadway Standard No. 1101.02 unless the work area is protected by barrier or guardrail.

F) When work is being performed behind a lane closure on one side of the travelway, do not perform work involving heavy equipment within 5m of the edge on the opposite side of the travelway.

G) Do not install more than 3.2 km of lane closure on US 64, measured from the beginning of the merge taper to the end of the lane closure. Place sets of three drums perpendicular to the edge of the Travelway on 150m centers in the closed travel lane. These drums shall be in addition to channelizing devices.

H) Maintain a minimum width of 3.3m on all open lanes for –Y- lines. A minimum 0.6m offset from the edge of travel to any Traffic Control Device is required at all times.

PAVEMENT EDGE DROP-OFF REQUIREMENTS

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

Backfill drop-offs that exceed 50mm on roadways with posted speed limits of 72 km/hr (45 mph) or greater.

Backfill drop-offs that exceed 75mm on roadways with posted speed limits less than 72 km/hr (45 mph).

Backfill with suitable compacted material, as approved by the engineer, at no expense to the department.

J) Do not exceed a difference of 40mm in elevation between open lanes of traffic.

TRAFFIC PATTERN ALTERATIONS

K) Notify the engineer 21 calendar days prior to any traffic pattern alteration.

SIGNING

L) Provide Permanent Signing within and off the project limits.

M) Provide Detour Signing within and off the project limits.

N) Cover or remove all Detour Signs within and off the project limits when a detour is not in operation.

O) Insure all necessary signing is in place prior to altering any traffic pattern.

TRAFFIC BARRIERS

P) Protect the approach end of portable concrete barrier at all times during the installation and removal of the barrier by either a truck-mounted impact attenuator or a temporary crash cushion.

Offset the approach end of portable concrete barrier a minimum of 10m from oncoming traffic or protect at all times by a temporary crash cushion.

Install portable concrete barrier with the traffic flow, beginning with the upstream side of traffic. Remove portable concrete barrier against the traffic flow, beginning with the downstream side of traffic.

Install drums on 30m centers to close or keep closed the section of the roadway until the barrier can be placed or after barrier is removed.

Offset the Portable Concrete Barrier a minimum of 0.6m from the edge of travel on all open travelways.

TRAFFIC CONTROL DEVICES

Q) Space channelizing devices in work areas equal in meters to 2/3rds the posted speed limit, except 3m on-center in radii and 1m off the edge of an open travelway, when lane closures are not in effect.

R) Place type III barricades, with Road Closed Sign R11-2 attached, of sufficient length to close entire roadway. Stagger or overlap barricades to allow for ingress or egress.

S) Place sets of three drums perpendicular to the edge of the Travelway on 150m centers when unopened lanes are closed to traffic. These drums shall be in addition to channelizing devices.

PAVEMENT MARKING AND MARKERS

T) Install pavement markings and pavement markers on the final surface as follows:

Road Name	Marking	Marker
US 64 Bypass -L-	150mm Wide Polyurea	Permanent Raised
All -Y- Line Roads	100mm Wide Thermoplastic	Permanent Raised
US 64 Business/(Alt.)	100mm Wide Thermoplastic	Permanent Raised

U) Install pavement markings and pavement markers on interim layers of pavement on all –Y- line roadways as follows:

Marking	Marker
100mm Wide Paint/Tape	Temporary Raised

V) Tie proposed pavement marking lines to existing pavement marking lines.

W) Replace any pavement markings that have been obliterated by the end of each day's operation.

X) Place two applications of paint on new asphalt with temporary traffic patterns which will remain in place over three (3) months. Place the second application of paint upon ample drying time of the first.

MISCELLANEOUS

Y) A "Rolling Road Block" may be used as necessary on US 64. Use two trucks with "Pilot Car Follow Me" signs and rotating beacons to slow traffic. Maintain a minimum speed of 32km/hr (20 mph) for the "rolling road block". Place changeable message signs flashing the message "slow-moving traffic ahead" 3.2 km (2 miles) in advance of the "rolling road block" vehicles.

Z) Police may be used to maintain traffic during traffic shifts.

AA) Provide portable temporary lighting to conduct night work on US 64 and US 64 Bus./(Alt.) in accordance with the NCDOT Standard Specifications for Roads and Structures.

PROJECT SPECIAL PROVISIONS
POLYUREA PAVEMENT MARKING MATERIAL

Section 1205-1 DESCRIPTION:

This special provision covers machine applied Polyurea pavement marking material with both incorporated glass beads and drop-on glass beads. All remaining Articles in Section 1205 shall be as described in the 2002 Standard Specification for Roads and Structures with the exceptions below.

Section 1205-2 Materials

(A) General

Replace Article (A) with the following:

Section 1087-Articles 1, 3, 5 & 6 (General, Color, Packaging for Shipment, and Storage Life) shall be as described in the 2002 Standard Specifications for Roads and Structures. Any remaining information necessary for the placement of Polyurea pavement markings will be as recommended by the manufacturer.

(B) Material Qualification

Replace Article (B) with the following:

All polyurea pavement markings shall be pre-approved by the Traffic Control Section prior to application. The retroreflecting beads shall be according to the manufacturer's recommendations in order to meet the retroreflectivity requirements as stated in Section 1205-3(G)(8) as measured by a LTL 2000 retroreflectometer or Department approved 30m mobile retroreflectometer.

For more information, contact the Traffic Control Section at 919 250-4151.

Section 1205-3 Construction Methods

Section 1205-3(B) (1) General for all Application Equipment: Add the following sentence after the last paragraph:

In no case, shall handliners or any other non-truck mounted pavement marking machine be allowed to install polyurea pavement markings.

Add the following Section immediately following Section 1205-3(G)(7)

Section 1205-3 (G) (8) Polyurea Application:

Polyurea pavement marking lines shall have a minimum dry thickness of 15 mils when placed on concrete and asphalt pavements.

Using the Polyurea application equipment, the pavement materials shall be applied simultaneously. The Polyurea resin, mixed at the proper ratio according to the manufacturers recommendations, shall be applied to the pavement surfaces within the proper application temperatures as determined by the material manufacturer. Reflective glass beads are to be injected into the molten (liquid) Polyurea pavement markings.

Glass beads shall be applied at a rate according to manufacturer's recommendations. At the time of installation, the in-place marking shall the minimum reflectance values shown below, as obtained with a LTL 2000 Retroreflectometer or with a Department approved 30m mobile retroreflectometer. The reflectance values shown below shall be maintained for a minimum of 30 days from the time of placement of marking material.

WHITE: 800 mcd/lux/m2
YELLOW: 500 mcd/lux/m2

The "no track" time for the Polyurea Pavement Marking material shall be no more than 2 minutes when installed using a "moving operation." If the ambient temperature or any other condition causes the Polyurea to exceed a 3 minute "no track" time, a lane closure shall be installed to allow for proper curing of the material before traffic is allowed on the markings. Typical application speeds for installation of Polyurea Pavement markings is between 6 to 8 miles per hour.

The manufacturer of the Polyurea material shall certify the Design-Builder to place the material. At least one member of each crew working on this project shall have completed this training. The Design-Builder shall furnish the Engineer written confirmation of this training from the material manufacturer prior to the beginning of work. The manufacturer's technical representative shall be onsite during the entire installation of product.

The manufactures technical representative shall be knowledgeable and familiar with the Design-Builders application equipment prior to the installation of the Polyurea pavement markings.

Add the following Section immediately following Section 1205-3(H)

Section 1205-3(H)(1) Observation Period for Polyurea Pavement Markings:

Polyurea pavement markings shall be subject to a 180 day observation period.

The Design-Builder shall maintain responsibility for the pavement markings for a 180 day observation period beginning upon the satisfactory completion of all work required in the plans or directed by the Engineer. The Design-Builder shall guarantee the markings under the payment and performance bond, refer to Article 109-10.

Traffic shall be operating on the facility during the entire 180 day observation period unless otherwise directed by the plans or the Engineer.

During the 180 day observation period, the material installed shall show no signs of discoloration, debonding from pavement or excessive loss of retroreflectivity or wear.
In addition, any newly applied material which prematurely fails due to debonding, discoloration, poor retroreflectivity, excessive wear, etc. during the 180-day observation period will be replaced by the Design-Builder at no expense to the Department. The pavement marking will be required to maintain a minimum level of retroreflectivity during this 180 Observation.

The minimum reflectance values at the end of the Observation period shall be as follows:

WHITE: 700 mcd/lux/m2
YELLOW: 400 mcd/lux/m2

These measurements will be taken by the Department within 30 days prior to the end of the Observation Period. The reflectance values shall be taken with an LTL 2000 or Department approved 30m mobile retroreflectometer.

Section 1205-3(I) Removal of Pavement Markings:

Replace Section 1205-3(I) with the following:

The Design-Builder shall ensure the pavement and pavement markings are properly prepared to receive the Polyurea pavement markings. On new concrete pavements the curing compounds shall be removed. On new asphalt pavements, the surface shall be cleaned to received the new Polyurea markings.

On existing concrete and asphalt pavements where existing marking remains, all existing markings shall be removed prior to receiving the Polyurea pavement marking.

The method for removal of the existing lines is to be done according to the manufacturer's recommendations.

POLICE:

DESCRIPTION.

The work covered by this special provision consists of furnishing police officers and marked police vehicles to direct traffic in accordance with the plans.

CONSTRUCTION METHODS.

Police officers shall be outfitted with police uniforms.

Marked police vehicles shall be equipped with police lights mounted on top of the vehicle, and police vehicle emblems.

Police officers and marked police vehicles will be required to be provided simultaneously, or separately to direct or control traffic. The plans or the Engineer will designate the locations where only police officers are required, where only marked police vehicles are required, or where they are both required to be utilized simultaneously.

All costs for uniformed police officers and marked police vehicles shall be included in the lump sum price bid for the project.

SIGNALS SCOPE OF WORK:

I. Overview

The Design-Build firm shall Design and Construct all Traffic Signal plans, Closed loop signal system plans, Basemaps for Signal plans, Electrical and programming detail plans, Utility Make-Ready plans, Communication Cable Routing plans, coordinated traffic signal System Timing plans and Project Special Provisions. This work consists of one traffic signal to be revised and six (6) new traffic signals to be installed. The locations and system requirements are as follow:

Closed Loop Signal System 1 (US 64 Bus)

US 64 Bypass WB Ramp @ US 64 Bus – New Signal
US 64 Bypass EB Ramp @ US 64 Bus – New Signal
US 64 Bus @ SR 1003 (Rolesville Road) – Existing Signal

Closed Loop Signal System 2 (SR 2233)

US 64 Bypass WB Ramp @ SR 2233 (Smithfield Road) – New Signal
US 64 Bypass EB Ramp @ SR 2233 (Smithfield Road) – New Signal

Closed Loop Signal System 3 (SR 2516)

US 64 Bypass WB Ramp @ SR 2516 (Hodge Road) – New Signal
US 64 Bypass EB Ramp @ SR 2516 (Hodge Road) – New Signal

All work shall conform to the design, construction and operation standards of the NCDOT Traffic Engineering Branch. Standards may be found in the publications referenced in the other sections of this Scope of Work.

All equipment should also be compatible with other existing equipment in a traffic signal system and/or meet special Division requests, if applicable.

II. Description of Work

(A) Traffic Signal plans:

Traffic signal plans shall be prepared for permanent and temporary installations on the standard size border sheet and shall include, but not be limited to, the following information with all supporting documentation:

◊ Prepare temporary and permanent traffic signal plans to include but not be limited to the following information with all supporting documentation:

a) Traffic signal analysis of the intersections to determine the necessary criteria (cycle lengths, clearance intervals, maximum intervals, offsets, splits, etc.) for the required phasing.
b) Phasing diagrams for each active movement through the intersection. Phasing diagrams shall show actual operation. "Typicals" will not be accepted.
c) Table of operations.
d) Timing charts.
e) Graphic scales.
f) North arrows.
g) Legends.
h) Street grades.
i) Speed limits.
j) Plan notes.
k) Loop/detection installation charts for all detection devices.
l) Locations, sizes, arrangements, and identification of signal heads.
m) Location of proposed poles and messenger cable arrangements.
n) Location of proposed underground conduit and pull boxes.
o) Location of proposed lead-in cable routing.
p) Location of existing utility poles as shown on the roadway construction plans. (Only if in conflict with design.)
q) Location of all utility conflicts if desired. (Only small amount near area of conflict)
r) Location of right-of-way.
s) Title block information.
t) Plan quantities as appropriate

u) Coordination of the traffic signal plans with the final pavement marking plan to show the final detection locations and the associated detection charts.
v) Identification and assembly of the traffic signal plans and pay item totals.
w) Title Sheet for contract work
x) Metal pole designs (with or without mastarms) to include, but not be limited to the following information with all supporting documentation:
    - Reference to the "Typical" loading case *(when applicable)*
    - Loading diagrams (including dimensions on a plan view and dimensions of all signal heads, signs, and luminaires utilized and attachment heights) *(when applicable)*
    - Documentation in the form of cross-sections, typicals, etc.
y) Documentation shall include, but not be limited to:
    - Signed clearance chart with distances (show dimensions)
    - Controller timings for all existing signalized locations
    - Most recent traffic counts with breakdown (vehicular and pedestrian)
    - Roadway plan sheet for intersection
    - Profile at intersection
    - Capacity analysis
    - Division requests for specialized items (preemption, pedestrian signals, metal poles, system work, etc.)

- Existing signal plans if applicable
- Notes on all correspondence with Department personnel

Approval by the Department must be given on the phasing and detection methods used. Final traffic signal plans shall be sealed by the Engineer. The Engineer must be duly registered to practice engineering in North Carolina.

◊ Coordinate the traffic signal plans with the construction staging to determine whether interim traffic signal treatment will be necessary to maintain actuated signalized operation during construction phasing. Interim traffic signal treatment may be defined as the following:
a) Moving traffic signal poles out of the construction zone.
b) Temporary traffic signals (to be removed at the completion of the construction) which require new traffic signal plans.
c) Revised phasing at existing traffic signal locations that require revised traffic signal plans.
d) Modifications to existing traffic signal plans to reflect changes in intersection geometry that do not require a new traffic signal design.
e) Temporary traffic signals installed during a construction phase that will be revised during another construction phase and/or for final traffic patterns.

◊ Prepare temporary traffic signal plans (plan does not show the installation in the final traffic signal configuration) at existing or proposed traffic signal locations to include but not be limited to the following information with all supporting documentation:
a) Modifications to traffic signal installations shall use existing equipment to the fullest extent possible when appropriate.
b) When locating new poles, and therefore installing new spanwire, use all new signal heads on that span.
c) Modifications to phasing, signal timing (cycle lengths, clearance intervals, minimum and maximum green intervals, offsets, splits, etc.), and traffic signal equipment locations during construction shall be designed by the Engineer and approved by the Department.
d) Approval must be given by the Department as to whether traffic signal modifications can be made utilizing traffic control plan notes or whether traffic signal modifications will require a temporary traffic signal plan.

(B) Closed Loop traffic signal system plans:

Closed loop traffic signal system plans shall be prepared and shall include but not be limited to the following information with all supporting documentation:

◊ Coordinate project development with the Department, City, and/or Municipality and all affected utility agencies (telephone, power, gas, cable television, etc.). Inform all agencies of project status and allow appropriate input.
◊ Develop a title sheet including a vicinity map of the system showing the major streets.
◊ Prepare traffic signal plans in compliance with Section A and locate system detectors on the plans. Local intersection detection may be used for system detection.
◊ As a minimum, the closed loop traffic signal system shall:

a) Use internal time-based coordination in the local controllers for backup system control.
b) Provide selective Flash/Free control of all intersections in the system from central-manual, time-of-day, and traffic responsive timing plan selection.
c) Control a minimum of 14 field master controllers per central personal computer.
d) Control a minimum of 24 local intersections and 16 system detectors per master controller.
e) Provide for uploading and downloading of intersection control parameters from the personal computer.
f) Provide a dynamic graphics package.

(C) Basemaps by stadia survey:

Basemaps for geometric and traffic signal plans shall be prepared from stadia surveys conducted by the Design-Builder, and shall have supporting documentation to include but not be limited to the following information:

◊ North arrow.
◊ Edge of pavement, curb and gutter, paved shoulders, etc.
◊ Right-of-way monuments and lines.
◊ Street names and route numbers.
◊ Railroad tracks (crossing number and railroad name).
◊ Railroad gates and crossings.
◊ Existing obstructions along the roadside or within the roadway (bridges and approach slabs, driveways, islands, sidewalks, fire hydrants, buildings, large signs, trees, etc.).
◊ Existing poles and guys pertinent to the signal installation.
◊ Drainage obstacles (drop inlets, catch basins, drainage pipes, manholes, culverts, headwalls, etc.)
◊ Underground and overhead utilities (electric, telephone, cable television, etc.)
◊ Ditch lines (note if paved).
◊ Any areas of construction that may affect the signal installation.
◊ Street grades and speed limits.

(D) Electrical and programming detail plans:

Electrical and programming detail plans shall be prepared for traffic signal plans with supporting documentation to include but not be limited to the following information:

◊ Field connection hook-up charts showing the connection in the controller cabinet for each signal head.
◊ Conflict monitor/Malfunction management unit programming card details showing the required jumpers and switch settings.
◊ NEMA overlap card details showing all required jumpers.
◊ Equipment information sections showing the controller brand and model number, cabinet type and mounting style (pole-mounted or base-mounted), number of loadbay positions, loadswitchs used, phases used, and overlaps used.
◊ Typical connection charts for detectors defining the detector pin functions and the connection on the loop termination panel or detector rack set-up.

- ◊ Backup protection relay wiring details showing required jumpers and connections for phase omits and the wiring circuitry needed to serve the omit phases.
- ◊ Special detector wiring details showing any special wiring needed for detection operation. Details will be required for detection other than inductive detection loops (microwave, ultrasonic, machine vision, etc.).
- ◊ Communication interface details showing the telemetry panel and all connections.
- ◊ Preemption panel wiring details showing the preemption panel and all connections.
- ◊ Detail notes addressing installation and programming procedures in sufficient detail for construction. Notes shall address start-up programming, start-up phases, power-up flash times, unused phases, conflict-flash, etc.
- ◊ Special cabinet wiring details showing any special wiring needed to the controller cabinet.
- ◊ All non-standard controller programming shall be shown such as preemption programming, time-of-day programming, special ring configurations, etc. All controller display screens and menus needed to program these features shall be shown.

Upon request by the Design-Builder, the Department will furnish available information pertaining to the traffic signal including manuals and wiring diagrams for existing and new equipment.

Final electric and programming detail plans shall be sealed by the Engineer. The Engineer must be duly registered to practice engineering in North Carolina.

(E) Fiber Optic Communications System

Design and Construct a fiber optic communications system that shall interconnect the field master controllers with each local intersection controller under its direct control. The field master controllers may be connected to a central control center (Division 05 - Traffic Services Signal Shop; in Durham) using "dial-up" telephone lines. The Central Control Center as a minimum shall contain a personnel computer with system software, printer, and a local area network (if needed). The personnel computer shall also be provided with a modem connection that will allow users the ability to network with the system from a remote location.

Utility Make-Ready Plans:

General: Communications Cable and Conduit Routing Plans shall be designed for this Project. As a first step in developing the finalized Plans a set of Utility Make-Ready Plans shall be prepared. These plans must be developed in accordance with the *National Electrical Safety Code* and all applicable Utility Codes.

- ◊ (100% Submittal of the Utility Make-Ready Plans) Develop and submit to the Department a set of Utility Make-Ready Plans for routing of the proposed communications cable either aerial or underground. For aerial installation the Department desires to install the fiber optic communications cable 40 inches below the power company's neutral conductor. The plans shall reflect joint use utility pole locations, signal cabinet locations, signal pole locations and any other utilities that may be affected. Plans shall be coordinated with utility representatives for the appropriate Utility Agency and should address any modifications or adjustments deemed necessary to provide a pole attachment and/or underground installation location for the fiber optic communications cable. The Design-Build Team is responsible for coordinating and obtaining the utility make-ready adjustments

◊ Plans should show, as a minimum:
Final roadway, joint/use utility pole locations, signal poles, intersection controller cabinets, signal inventory numbers, right-of-way, driveways, streets, other affective utilities, legends, intended NCDOT cable attachment points, and a description of each pole showing the type of utility make-ready work required.

Utility Make-Ready Plans will not require an Engineer's seal.

Communications Cable Routing Plans:

General: Communications Cable Routing Plans may need to be designed in conjunction with the Construction Phasing of the project such that coordination of traffic signals may be maintained throughout the construction of the project. Communications cable shall be a 12-fiber single mode cable at a minimum.

◊ **(90% Submittal of the Communications Cable and Conduit Routing Plans)**
Upon completion of the utility make-ready plans, the Design-Build Team shall develop and submit to the Department for review a set of Communications Cable and Conduit Routing Plans for routing and installation of communications cable along with a preliminary set of Project Special Provisions.

The Department will review the 90% submittal and provide comments where necessary.

(100% Submittal of the Communications Cable and Conduit Routing Plans)
Following receipt of the Department's comments, the Design-Build Team shall submit a final set of Communications Cable and Conduit Routing Plans. Included in this submittal shall be the Project Special Provisions, Fiber Optic Splicing Plans, Estimates, and any other information needed to address construction for this portion of the project.

Plans and Project Special Provisions must be sealed by an Engineer. The Engineer must be duly registered to practice engineering in North Carolina.

◊ **The 90% and 100% submittals for the Communications Cable and Conduit Routing Plans should show, as a minimum:**

Final roadway, joint/use utility pole locations, signal poles, intersection controller cabinet locations, signal inventory numbers, right-of-way, driveways, streets, other affective utilities, legends, NCDOT cable attachment points, and construction notes indicating what construction method is required to install the communications cable, risers with heat shrink tubing, messenger cable, spare cable storage locations, guy assemblies, junction boxes (oversized), trenching, conduit, interconnect centers, transceivers, phone drops, etc.

The plans shall also provide any necessary details/drawings that are needed to address typical installation techniques. (i.e. snow-shoe typical, junction box typical, etc.)

The Plans should also provide splice diagrams for the fiber optic communications cable detailing which fibers will be terminated, transmitting fibers, receiving fibers, spare fibers,

jumpers, patch panels, splice trays, and interconnect center requirements. Splice plans shall also identify where each segment of communications cable originates and terminates.

(F) Prepare coordinated traffic signal system timing plans:

Coordinated traffic signal system timing plans shall be prepared and shall include but not be limited to the following information with all supporting documentation:

- ◊ Assist the Department in the development of traffic signal timing control parameters and other related timing information necessary for the satisfactory operation of the traffic signal system. Coordinate and establish procedures and methods for the collection and reduction of data, and perform analysis of the data for each required element. Determine the data needed and the data collection techniques required for coordinated traffic signal system operation.
- ◊ Collect and reduce field data in the format required by the definition and specifications of the traffic signal timing control equipment.
- ◊ Perform speed and delay studies, queue length studies, peak hour traffic volume studies and other studies as may be required for future evaluation of the system. Perform peak and off-peak turning movement counts for each control area, pedestrian movements, and large truck turning movements, and limited 6 hour traffic count studies for use in development of the initial coordinated traffic signal system timing plans and data base. The study time periods may include weekends.
- ◊ Finalize control area boundaries and provide documentation supporting the boundaries selected.
- ◊ Determine traffic signal timing strategies to enhance traffic operations (fully-actuated coordination, lead/lag phasing, etc.) Verify strategy with the Division.
- ◊ Develop graphics for each intersection and for each overall system display. The intersection graphics shall include at a minimum: physical drawing of the intersection, including graphic representation of the type and location of signal heads, real time signal indication status (when intersection is dialed up and online), the location and phase assignment of vehicle detectors, number and type of lanes, and the real time detector status and actuation (when intersection is dialed up and online).
- ◊ Determine the parameters for changing timing control plans as required by the system software. This will include “time-of-day” operations.
- ◊ Develop timing plans for the required number of control areas consisting of all the traffic signal locations within the control area. Provide a minimum of five timing plans (AM, AM off-peak, Noon-peak, PM, PM off-peak, weekends, holidays, seasonal peaks, etc.) for each control area to meet mutually identified traffic conditions. The timing plans shall include cycle length, offsets, cycle splits, and all other parameters required to make the system operational. Provide a common cycle length which allows adequate pedestrian crossing times at all signalized intersections. The cycle-split calculation shall be determined based upon the type of system. The format shall be as specified by the Department or as required by the type of equipment.
- ◊ Develop coordinated traffic signal system timing plans with the aid of computerized timing programs. The Design-Builder may select the computerized timing program from those the Engineer has developed or is currently using. However, the Design-Builder shall obtain approval from the Department for use of the selected computerized timing program prior to beginning timing plan development.
- ◊ After acceptance of the coordinated traffic signal system timing plans and if requested by the Department, refine and adjust the plans to actual “on-street” conditions. The

Engineer may be required to assist with timing plan implementation on-site. The refinements and adjustments should be minimum in nature and If, during this adjustment period, major changes are found to be necessary, the Design-Builder shall remove their timing plans from the field controllers and develop new timing plans, which then must be accepted by the Department. After this acceptance, the field implementation and adjustment step begins anew.

- ◊ Provide training on the development and revision of timing plans for up to (10) city and department personnel. This training will be consisted of formal classroom training utilizing current computer programs being used to develop the timing plans for the project.
- ◊ Provide electronic versions of all timing plans (post-adjustment) in the file format of the software used to develop.

Upon request of the Design-Builder and if available, the Department will furnish one copy of the existing traffic signal counts, full-sizes or reproducible copies of the traffic signal designs for each traffic signal location, and other information that may be of use to the Design-Builder in the preparation of the coordinated traffic signal system timing plans. Other information that may be available pertaining to existing or proposed facilities that would be pertinent to this project will be made available and the Department will assist in securing information from other appropriate agencies. The Design-Builder shall verify all information furnished by the Department or other agencies as to the accuracy.

The Design-Builder shall submit 5 copies of a monthly progress report in letter-style by the tenth (10^{th}) of each month. Reports shall describe in detail the Design-Builder's activities for the previous month and predicted activities for the upcoming month.

Final coordinated traffic signal system timing plans and documentation report, shall be sealed by the Engineer. The Engineer must be duly registered to practice engineering in North Carolina.

(G) Project Special Provisions:

Project Special Provisions shall be prepared and shall include but not be limited to the following information with all supporting documentation:

- ◊ The project special provisions shall cover all items of work, material, equipment, and methods of construction for the installation of Traffic Signals and the Communications System.
- ◊ Each section of the project special provisions shall contain subsections titled: Description, Materials, Construction Method, Method of Measurement, and Basis of Payment.
- ◊ The project special provisions shall be submitted for review at the time final plans are submitted.
- ◊ The current edition of the following publications and provisions shall apply to all materials and construction on all work described above:

  NCDOT Standard Specifications for Roads and Structures
  NCDOT Traffic Signal Specifications and addenda
  Signals & Traffic Management Systems Project Special Provisions
  Traffic control project special provisions

Upon request by the Design-Builder, the Department will furnish generic project special provisions to the Design-Builder for use in developing the project special provisions.

Final project special provisions shall be sealed by the Engineer. The Engineer must be duly registered to practice engineering in North Carolina.

III. Work Standards.

I. The Design-Builder shall be responsible for providing the safest and most economic design for the public. The Engineer shall be responsible for insuring that all plans and designs conform to the current edition of the following publications:

Manual on Uniform Traffic Control Devices for Streets and Highways
North Carolina Supplement to the Manual on Uniform Traffic Control Devices for Streets and Highways
NCDOT Traffic Signal Specifications and all addenda
NCDOT Signals and Geometrics Section Design Manual
National Electrical Safety Code
National Electric Code

II. Final plans and project special provisions shall be approved by the Department prior to final acceptance. Approval by the Department shall not relieve the Engineer of liability or the responsibility to correct all Engineer-prepared plans or computations. The Design-Builder shall correct all errors discovered on Design-Builder -prepared plans both before and after availability of the project.

III. The Design-Builder shall be responsible for coordination of the preparation of temporary and permanent plans with the latest set of traffic control plans and roadway plans. Any revisions to the plans necessitated changes to the roadway plans within the original project limits shall be considered within the scope of work of this agreement and without extra payment.

IV. All drawings, original design calculations, project special provisions, and other material prepared under this Agreement shall be the property of the Department and shall be submitted upon completion of the work.

V. All plans shall be prepared on CADD Microstation format and printed on sheets conforming in sizes and design to the Department's traffic signal plan sheets.

VI. The Design-Builder may be held responsible for all expenses resulting from incorrect or misleading information furnished by the Engineer which results in additional costs to the Department.

VII. Each plan sheet and the title sheet of the Special Provisions must include the firm's name and address.

VIII. The Design-Builder will be responsible for attending any constructability, utility, and field inspection meetings until the final acceptance of the project work.

IV. Submittal Requirements

The Design-Builder shall provide the Department a copy of all supporting documentation, computer files, and any other pertinent information required for a complete and accurate review and approval by the Department.

90% Submittal	100% Submittal
(A) Traffic Signal plans: • 2 Full size bond copies • 2 Half size bond copies	(A) Traffic Signal plans: • 2 Full size bond copies • 2 Half size bond copies • All computer files on CD
(B) Closed Loop traffic signal system plans: • 2 Full size bond copies • 2 Half size bond copies	(B) Closed Loop traffic signal system plans: • 2 Full size bond copies • 2 Half size bond copies • All computer files on CD
(C) Basemaps by stadia survey: • 2 Full size bond copies • 2 Half size bond copies	(C) Basemaps by stadia survey: • 2 Full size bond copies • 2 Half size bond copies • All computer files on CD
(D) Electrical and programming detail plans: • 3 Half size bond copies	(D) Electrical and programming detail plans: • 2 Full size bond copies • 2 Half size bond copies • All computer files on CD
(E) Fiber Optic Communications System Communications Cable Routing Plans: *(100 % submittal of the Utility Make-Ready Plans required prior to this submittal)* • 2 Full size bond copies • 2 Half size bond copies	(E) Fiber Optic Communications System Utility Make-Ready Plans • 2 Full size bond copies • 2 Half size bond copies • All computer files on CD Communications Cable Routing Plans: • 2 Full size bond copies • 2 Half size bond copies • All computer files on CD
(F) Coordinated System Timing plans: • 2 Sets of System Timing Plans	(F) Coordinated System Timing plans: • 2 Sets of System Timing Plans • All computer files on CD
(G) Project Special Provisions: • 3 copies	(G) Project Special Provisions: • 3 copies • All computer files on CD

SIGNING SCOPE OF WORK:

General: The Signing plans will be prepared by the Design Build (DB) team in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD), the NC Supplement to the MUTCD, the NCDOT Standard Drawings for the design and development of signing plans, and the contract requirements for Signing plan design and preparation including specific submittal requirements for department review (attached).

Specific Signing Items:

Signs Furnished by Design Build Team: The signs will be furnished by DB team according the specifications provided by the department.

Sign Design: NCDOT will provide sign designs for all type A, B, and D signs for installation at project completion, including overhead and ground mounted signs (not including construction or traffic control signs). These type A, B, and D sign sizes are shown on the corridor strip map; however, these sizes may change if the sign message requirement changes during project construction. The department will be responsible for any changes to the messages on sign designs, which are provided to the DB team on the signing corridor map and the individual sign designs. The DB team shall notify the department in writing two weeks in advance of needing the final sign designs for fabrication and installation. The DB team will be responsible for determining, sizing, and locating all type E (warning and regulatory signs) and type F signs (route marker assemblies).

Overhead Sign Assemblies: All overhead sign assemblies will be designed and fabricated by the DB team and must meet all department design requirements. The windspeed for use in the design is 100 MPH and the windload area is the rectangular area figured from 25% larger than the highest sign on the assembly and extended 4' from the left and right furthest edges of the signs on the assembly. Examples of these structure line drawings completed for other projects will be provided on FTP showing this and other required information on these design drawings. See Contract Requirements for plan requirements and see standard specifications for requirements including shop drawing design and submittal.

Ground Mounted Support Designs: NCDOT will provide the software for support design. DB team is responsible for all design, fabrication, and installation. Instructions for loading support design software will be available via FTP.

Field Verifications of Supports: Field verification of ground mounted and overhead assemblies is required to be completed by DB team prior to fabrication of supports and submittal of shop drawings for overhead structures to ensure safety requirements are met. This verification includes the S-drops, offsets, type support, station locations, and recalculation of support sizes for ground mounted signs; and for overhead assemblies includes S-drops, actual slopes at upright locations, lane dimensions, orientation of signs over lanes, offsets, guardrail or other protection dimensions, and windload area design requirement. Field verifications are submitted by DB team to the department for review. Once approved by the department, these revised sheets will be sealed by the DB team, and submitted

back to the department for inclusion in the as built plans. Electronic files of these revised plan sheets will also be required to be submitted to the department.

Sign Locations: A corridor strip map showing general locations (not specific stations) for type A, B and D signs, including overhead assemblies will be provided by NCDOT via FTP. The DB team will be responsible for determining the station locations for all signs and overhead structures.

Guardrail or Other Protection for Signs and Overhead Assemblies: The DB team will be responsible for determining and designing any protection for sign installations and coordinating this design work with the department for approval.

Overhead Sign Lighting: The DB team will be responsible for all overhead sign lighting designs. See standard specification sections 905 and 1097. These sign lighting design sheets shall be submitted to the department for review with the 50% complete submittal. The department's review comments will be returned back to the DB team on or near the return of the 90% complete reviewed plans. The lighting system will be Lumitrack (See Special Provision). DB team will design, provide, install, and activate these lighting systems (See Requirements for Sign Lighting Design).

Power for Overhead Sign Lighting: The DB team will be responsible for establishing power for all overhead signs. For additional information, see ROW and Utility scope details.

Signing Typical Sheets: Sheets for use in summarizing pay items, standard specifications, and quantities and sheets for compiling type E signs and type F signs will be provided by the department via FTP. Typical sheets showing NCDOT signing standards for interchanges will also be provided for design reference.

Removal and Disposal of Existing Signs: The DB team will be responsible for determination of existing signs that will no longer be needed upon completion of the project, such as on –Y- lines and project tie-ins. The DB team will be responsible for removal and disposal of these signs and supports. These signs will need to be shown and noted on the plan view sheets of the signing plans designed by DB team.

Signing Project Limits: The signing project limits will extend beyond the construction limits of this project to install three (3) of the five (5) required Dynamic Message Sign Assemblies and several advance guide signs on existing overhead sign assemblies on the R-2547BA project if it is completed and opened prior to this DB project. Modifications to existing signs on I-440 will also be included in the DB project if the R-2547BA project is completed and opened prior to the DB project.

Final Signing Design Plans: Final Signing Plans must be approved by the department.

Signing Construction Revisions: Any construction revision must be submitted to the department for approval.

Dynamic Message Sign (DMS) Assemblies: Five (5) Dynamic Message Sign Assemblies are proposed to be included on this project. Four (4) of these assemblies will include DMSs installed on this DB project and one (1) future DMS will be installed on the remaining DMS assembly in a future

project. The future DMS will be located on US 64 westbound approximately 1 mile in advance of the future I-540 interchange. This assembly will need to meet all requirements of a DMS assembly and shall be designed to accommodate a future DMS of the same specifications as included in the Dynamic Message Sign System Project Special Provision. Also, see DMS system special provision for DMS sign system, testing requirements, controller and cabinet, computer system and software, laptop and software, DMS assembly design and fabrication requirements, direct tension indicators, and power requirement. The approximate locations for the DMS sign assemblies are shown on the Signing corridor concept map to be provided by NCDOT via FTP. Some of these locations are outside of the roadway project construction limits; however, are within the Signing project limits. Some of these DMS assemblies will also include static signs. The design build team will be required to determine station locations for these assemblies, design structure line drawings including dead load, DMS notes and details, and all other requirements for overhead sign assemblies, complete field verifications, design shop drawings for NCDOT approval, provide and install signs and assemblies, meet all requirements of the DMS system special provision, and establish power for these signs. All design drawings will be submitted to NCDOT for review. DMS typicals will be provided by NCDOT via FTP.

Requirements For The Preparation Of Signing Plans

I. Signing Information Available Electronically

Electronic information prepared by NCDOT is available as follows:

ftp://ftp.doh.dot.state.nc.us/

Non-proprietary computer software for support and sign design is included in this information.

II. Description of Work Required of Design Build (DB) Team

An understanding of the signing sections of the MUTCD, NC Supplement to the MUTCD, NCDOT Standard Specifications, and NCDOT Roadway Standard Drawings are required for design and development of signing plans.

A. Signing Plan Preparation: Prepare signing plans (SP) on Microstation J and include the following information and supporting documentation:

1. General Requirements: Accurate 1" = 100', (for metric projects 1:1000), CADD drawings of roadway plans, hereafter referred to as signing plan view sheets, which show pavement, paved shoulders, bridges, culverts, guardrail, drainage pipe, survey lines, right-of-way lines, stationing as labeled on roadway plans, equalities, north orientation for each sheet, signalized intersections labeled, beginning Signing project station, and ending Signing project station. Proposed traffic flow arrows shall be shown on these sheets at the beginning and end of each sheet, at overhead sign locations, and following any lane transitions.

2. Sign Locations: Locations of re-erected existing signs, existing signs remaining in place, proposed signs, and future signs by station on L-lines, Y-lines, and ramps is required except when stationing is not available. When stationing is not available, such as outside of the project limits, signs are required to be dimensioned from a fixed point or sign spacing shall otherwise be indicated on plans. Graphic representation of all existing, proposed, and future signs on the L-lines, Y-lines, and ramps are to be positioned on the plans as traffic would see them.

3. Sign Design: Sign designs for type A, B, and D signs showing all sign face fabrication details will be provided by the department. Signs will be designed to accommodate future messages when necessary. Determination of type E and F signs will be made by the DB team and included in signing plans.

4. Ground Mounted Support Design for Type A and B Signs: Determination of S dimensions from X-sections (or from field survey when X-sections are not available) is required for Type A and B ground mounted signs. Design of supports is required using these S dimensions. Support chart including support sizes, lengths, and weights, for all Type A and B ground-mounted signs is required. (Spreadsheets are available electronically through FTP.)

5. Type D signs: A chart including sign number, sign size, and number of U channel posts for all Type D signs is required.

6. Special Provisions: Project Special Provisions for special signing items are required to be written by the DB team, unless previously written and sealed by NCDOT. When written by the DB team, these provisions are required to be sealed a professional engineer of the DB team. For DB team reference, the Project Special Provisions written and sealed by the Department are included in the files available electronically through FTP.

7. Overhead Sign Assembly: An overhead sign assembly cross-section sheet is required for each overhead sign assembly, hereafter referred to as a structure line drawing. These sheets include lane widths, slopes, location of supports, S dimensions at support locations, positioning of signs relative to travel lanes, sign messages and / or future messages, future signs, minimum and maximum vertical clearance, existing and proposed guardrail, walkway detail (if required), labeling of facility and direction of travel, windload and deadload requirements to be used for the design of structure and footings, and all applicable notes.

8. Lighting Design Sheets by DB Team: Lighting system design sheets prepared and sealed by the DB team shall be submitted to the department with the 50% complete submittal. Department comments will be returned to the DB team by the 90% complete reviewed plans. The lighting system will be Lumitrack (See Special Provision).

9. Requirements for Sign Lighting Design: The DB team must perform Point-to-Point Computer Aided Lighting Analysis for each sign. The Analysis must conform to the following criteria and sections of NC Standard Specifications for Roads and Structures:

- Lighting analysis must be performed at every foot on the horizontal and vertical plane, Section 905-4

- The maximum/minimum footcandle ratio must be less than 5, Section 1097-2
- The average maintained footcandles must be 30+/- 2, Section 1097-2
- The source of light must be High Pressure Sodium bulb not exceeding 250 Watts, section 1097-3

The DB team must use the Signing Section's lighting system's standard drawings to produce the construction document. The Signing Section will provide electronic copies of the drawings via FTP.

The lighting system must use a luminaire retrieval system as stated elsewhere in this scope of work. Refer to the Luminaire Retrieval System Lighting For Overhead Sign Assembly special provision for details. The materials and construction of the lighting system must conform to the requirements of Sections 905, 1097, and other applicable sections of NC Standard Specifications for Roads and Structures.

Submittals:
The DB team must submit the following for review and approval prior to any fabrication and procurement:

- Point-to-Point Computer Aided Lighting Analysis results showing the max/min footcandle ratio, average maintained footcandles, location of luminaires on the x,y,z plane. Z value must always be –1, that is: the center of the light source is placed one (1) foot below the bottom of the sign. Y value must be kept between 4.5 to 7.5 feet.
- Lighting System standard drawings (construction documents)
- Catalog cut sheets

10. Coordinate With Other Traffic Engineering Plan Requirements : The DB team is required to coordinate with the Traffic Control and Pavement Marking & Delineation plans when locating and designing overhead signs and sign assemblies, lane drop signing, and "All Traffic Exit" signing and to ensure that they match the requirements of the signing plans. The DB team is required to label signalized locations on the signing plans.

B. Signing Plan Submittals: The DB team shall make submittals for review by the Traffic Engineering and Safety Systems Branch Signing Section at the following milestones:

Note: 1) The Signing Section may combine or eliminate milestone submittals depending on project specifics.

1. Initial SP review: 2 (1/2 size) sets of Signing Plans and 2 copies of roll out ½ size plan view consisting of the signing plan view sheets with all existing, proposed, future signs (including messages) located in the format of the final product. All necessary sign relocations are also required to be included in this submittal. The approval of this review shall complete 25% of the SP work.

Submittal of 1 (1/2 size) corrected set of initial SP is required for review by field personnel and FHWA.

2. Interim SP review: 2 (1/2 size) sets of plans and 2 copies of roll out ½ size plan view with plans consisting of the corrected signing plan view sheets with all signs located, completed type E and F sign sheets, ground-mounted sign support chart with support designs and design calculation information (S-Dimension Worksheets), structure line drawings, and lighting design sheets completed in the format of the final product. The approval of this submittal shall complete 50% of the SP work.

Submittal of 1 (1/2 size) corrected set of interim SP is required for approval by Signing Engineer.

3. Final SP review: 2 (1/2 size) sets of plans and 2 copies of roll out ½ size plan view sheets with plans consisting of the summary of quantities sheet with list of applicable Roadway Standard Drawings, draft of Project Special Provisions (other than those prepared and sealed by NCDOT), and all corrected signing sheets and supporting documentation required in the 50% submittal. The approval of this submittal shall complete 90% of the SP work.

4. Final Plan submittal: Original sealed set of approved signing plans and 5 (1/2 size) copies, original of Project Special Provisions sealed by Professional Engineer of DB team (see II.A.6. for when required), design files on CD that have name of sealer, registration number, and date of sealing inserted where seal, signature, and date are located on original plans, and all other supporting documentation shall be submitted for final acceptance by the Signing Section of the Traffic Engineering and Safety Systems Branch. The approval of this submittal shall complete 100% of the SP work.

C. All Roadway plans and cross section CADD files developed by the Highway Design Branch of the Department will be made available to the DB team for use in developing the signing plans.

D. It shall be the responsibility of the DB team to coordinate the preparation of the signing plans with the Highway Design Branch of the Department as necessary. Any plans made available to the DB team shall not be considered final plans, unless otherwise stated. Any revisions to the signing plans necessitated because of changes in the Roadway plans within the original signing project limits shall be considered within the scope of work of this contract.

E. The Signing Section may require that certain items in the preparation of the signing plans conform to the methods currently in use by the Signing Section. The Signing Section may provide the DB team with forms, charts, computer programs (except proprietary), or other information, and request that these items be used by the DB team in the preparation of plans.

F. It shall be the responsibility of the DB team that all signing (and components thereof) shall be designed in accordance with the "MUTCD for Streets and Highways", the "North Carolina Supplement of the MUTCD" and the "NCDOT Standard Specifications for Roads and Structures".

G. Final plans shall meet the approval of the Department. Said approval shall not relieve the DB team of liability or the responsibility to correct any error in their plans or computations after the

100% Final Plan Submittal. The DB team will be required to make any such corrections without additional compensation.

III. Work Standards

A. The plans, sign support designs, design and quantity calculations, project special provisions, any other supporting documentation, and design files are required on CDs and shall be submitted to the Department upon completion of the work and become the property of the Department. Cadd work units that are compatible with NCDOT are required such that when plans are printed by NCDOT, plans will be identical to the hard copy of what was submitted by DB team.

B. All plan sheets shall be 34" x 22" in finished dimensions. The Department may furnish the DB team with sheets to incorporate into their plans prior to final plan reproductions.

C. All plan sheets shall conform to the requirements of the signing section. A 4 ½ " x 4 ½ " area for full size sheets, directly below the project information block in the upper right corner of all sheets, shall be left blank and unobstructed.

D. Reproduction

1. The DB team shall be responsible for providing the following:

   At 100%: 1 full size original set of plans sealed by Professional Engineer

2. The PEF shall be responsible for reproduction of the signing plans as necessary to provide the following bond prints:

   At 25%: 2 (1/2 size) sets initial SP review prints; 2 copies of roll out ½ size plan view;
   1 (1/2 size) set of corrected initial SP review prints;
   At 50%: 2 (1/2 size) sets interim SP review prints; 2 copies of roll out ½ size plan view;
   1 (1/2 size) set of corrected interim SP review prints;
   At 90%: 2 (1/2 size) sets final SP review prints; 2 copies of roll out ½ size plan view;
   At 100%: 5 (1/2 size) copies of approved final SP sealed by Professional Engineer;
   1 roll out ½ size plan view.

E. Project Special Provisions - the North Carolina Department of Transportation Standard Specifications for Roads and Structures, 2002*, and the Standard Special Provisions issued by the Division of Highways shall apply for materials and construction on all work described above. The DB team shall prepare thorough and complete Project Special Provisions covering those items of material, work, and other conditions for the signing items of the project which are not covered at all, or not covered as desired in the Standard Specifications or Standard Special Provisions. These Project Special Provisions shall be submitted for review at the time prints of final plans are submitted for review. The 100% submittal of these Project Special Provisions shall be sealed by a Professional Engineer of the DB team.

The Standard Special Provisions prepared by NCDOT are available for viewing on the Department's electronic files through FTP. When required for the project, these provisions will be printed and sealed by NCDOT.

OVERHEAD SIGN ASSEMBLIES

Where the Standard Specifications or plans require the Design-Builder to design overhead sign assemblies, including footings, and submit design computations and shop drawings for overhead sign assemblies, including footings, to the Engineer for acceptance, such computations and drawings shall be prepared by a professional engineer that is registered in North Carolina and shall bear his signature and seal.

In order to insure the proper fit of the footings to the finished slopes, the DB Team will field measure the footings at the proper locations to determine if there are any variations from plan dimensions. If changes are necessary, the data should be forwarded to the Traffic Engineering Branch so that revised plan sheets can be prepared.

Before any design work is done for the overhead sign supports or footings, the Design-Builder shall contact the Engineer to determine if plan changes are necessary and, if so, to determine when the revised plan sheets will be provided.

FIELD DRILLING FOR OVERHEAD SIGNS

The Design-Builder shall field drill two holes per connection in the Z-bars for attaching signs to overhead structures.

DIRECT TENSION INDICATORS

General

Direct tension indicators shall be used on all ASTM A325 high strength bolt connections in overhead and cantilever sign structures.

Direct tension indicators shall conform to these Special Provisions, the requirements of ASTM F959 and the manufacturer's recommendations.

Material Requirements

The direct tension indicator material, manufacturing process, performance requirements, workmanship and certification requirements shall conform to the requirements of ASTM F959.

For Type 3 high strength bolts, the direct tension indicators shall be mechanically galvanized to ASTM B695 Class 50, then baked epoxy shall be applied to a thickness of 1 mil.

For plain Type 1 high strength bolts, the direct tension indicators shall be plain or mechanically galvanized to ASTM B695 Class 50.

For galvanized Type 1 high strength bolts, the direct tension indicators shall be mechanically galvanized to ASTM B695 Class 50 only.

Test Documents

The Design-Builder shall furnish to the Engineer a copy of the manufacturer's test report for each lot of direct tension indicators to be incorporated into the project. The tests shall have been performed by the manufacturer according to the requirements of ASTM F959. Each test report shall include the lot number of the indicators, manufacturer's name, tension load when indicators were tested, gap clearance, nominal size, coating thickness, date tested, and name and location of the company that performed the tests.

The Design-Builder shall furnish to the Engineer a copy of the manufacturer's instructions for installing the direct tension indicators before installation begins along with at least 1 metal feeler gauge for each 50 direct tension indicators shipped.

The lot number on the containers of direct tension indicators shall be for the same lot number tested as indicated on the test documents.

Samples Required For Tests By The Department

The Design-Builder shall furnish to the Engineer three samples of load indicating washers from each lot number, each size and type for tests and two each of the metal feeler gages required for performing the tests.

Installation

The Design-Builder shall install the direct tension indicators in strict compliance with the manufacturer's written instructions.

It is anticipated that the direct tension indicator will normally be installed under the bolt head. If it is necessary to install the direct tension indicator under the nut, or if the bolt head must be turned, additional hardened washers shall be installed in accordance with the manufacturer's instructions.

The Design-Builder shall have a tension indicating device on the project for determining the tension imposed on a fastener when the protrusions on direct tension indicator have been properly compressed.

Three samples from each lot of direct tension indicators shall be tested in the presence of the Engineer. The minimum bolt tension achieved shall be 5 percent greater than that required by Table 440-1 located in Article 440-10 of the Standard Specifications.
Direct tension indicators shall not be substituted for the hardened steel washers required with short slotted or oversized holes, but may be used in conjunction with them.

The initial installation of the direct tension indicators shall be to a snug tight condition as specified in Section 440-10 Paragraph (C) (3) of the Standard Specifications. After the initial tightening, the fasteners shall be fully tightened, as recommended by the manufacturer of the direct tension indicators, beginning at the most rigid part of the joint and continuing toward its free edges.

The wrench used by the Design-Builder in tightening fasteners containing direct tension indicators shall be of the type and capacity recommended by the manufacturer and shall be clean and lubricated. The air supply and hoses shall be in good condition and provide air pressure of at least 100 psi at the wrench.

Any heating of structural steel required for corrections in the vicinity of fasteners shall be performed before direct tension indicators are installed.

Correct tightening of bolts will be inspected by the Engineer by inserting a 0.005 inch thickness feeler gauge into the openings between adjacent flattened protrusions of the direct tension indicator. Correct tensioning will be obtained when the number of spaces for which the gage is refused is equal to or greater than the value shown in the table below.

Number of Spaces in Washer	Number of Spaces Gage is Refused
4	2
5	3
6	3
7	4

*The gage shall be refused in all spaces when the direct tension indicator is used under the turned element.

Bolts are not to be tightened to a no visible gap condition. Bolts which have a direct tension indicator with no visible gap shall be replaced and the bolts tightened with a new direct tension indicator.

At least 10 percent, but no less than 2, of the bolts in each connection will be inspected.

Inspection of the installations will be accomplished by the use of metal feeler gages provided by the Design-Builder.

The Design-Builder's procedure for tightening the fasteners shall insure that the part of the fastener being restrained from turning does not rotate during the tightening process, thereby abrading away a portion of the direct tension indicator protrusions.

The Design-Builder shall insure that no portion of the direct tension indicator protrusions are accidentally partially flattened before installing in the structural steel joints.

Direct tension indicators shall not be reused. If it becomes necessary to loosen a bolt previously tensioned, the direct tension indicator shall be discarded and replaced.

Luminaire Retrieval System (LRS) Lighting For Overhead Sign Assembly

General:

Performance of this work shall comply with the requirements of sections 905, 1097, and other applicable sections of the North Carolina Department of Transportation's Standard Specifications for Roads and Structures.

Luminaire Retrieval System:

Overhead sign structure luminaires are to be installed on a luminaire retrieval system with supports and electrical system designed for track mounted luminaires. Design the retrieval and electrical

system for the number of luminaires as shown on the plans. The retrieval system must be capable of securely holding all sign luminaires at their designed positions and to allow all luminaires and electrical connections to be maintained from the roadway shoulder without lane closures. Electrical connections for the luminaires are to be arranged to allow each luminaire to be energized while over the shoulder for testing purposes. The system shall be capable of utilizing more than one circuit if required by the plans. A service pole for mounting electric meter, Walkways, handrails and associated equipment will not be required with the luminaire retrieval system.

A possible source of this product is:

Lumi Trak Inc.
P.O. Box 158
Shrewsbury, PA 17361
(717) 235-2863

SOILS AND FOUNDATION DESIGN SCOPE OF WORK:

I. GENERAL:

The Design/Build (D/B) team shall obtain the services of a firm prequalified for geotechnical work from the Highway Design Branch List. This firm or the geotechnical engineer employed by this firm shall have previous experience with designing foundations for the NCDOT Soils and Foundation Design Section. A Foundation Design Recommendation Report shall be prepared by this prequalified geotechnical firm for use by the D/B team in designing structure foundations, roadway foundations, retaining walls, sound barrier foundations and temporary structures for this project. All subsurface investigation or laboratory testing shall be performed by a prequalified geotechnical firm in accordance with the current NCDOT *Geotechnical Unit Guidelines and Procedure Manual*.

II. DESCRIPTION OF WORK:

All design methodology and soil parameters for any geotechnical analysis or design shall be submitted with the Foundation Design Recommendation Reports. All designs of foundations, embankments, slopes, retaining walls, sound barrier foundations and temporary structures shall be in accordance with the current allowable strength design AASHTO *Standard Specifications for Highway Bridges*, NCDOT *Structure Design Manual* and NCDOT *Roadway Design Manual*. Designs shall also be in accordance with the Soils and Foundation Design Section *Roadway and Structure Foundation Guidelines*.

A. Structures

The D/B team's attention is directed to the interior bents of the Roger's Lane Extension bridge located at Station 33+96.655 –L-. Bent Nos. 1 and 2 are designed with 2439 mm dia. drilled piers socketed into hard rock. See subsurface investigation for additional information.

All foundations shall be comprised of footings, prestressed concrete piles, steel piles, and/or drilled piers. All concrete shall be designed with steel reinforcement. Spread footings shall be designed with the bottom of footing elevation at or below the weathered rock or hard rock elevation. Also, spread footings for interior bents of structures crossing streams shall be keyed a minimum of full depth below the design scour elevation.

Piles for interior bents of all bridges shall have at least 3 meters of embendment below the lowest of the following: design scour elevation, bottom of footing elevation, finished grade elevation or natural ground elevation. The NCDOT Hydraulics Unit shall approve all longitudinally battered piles for interior bents of structures crossing streams. Permanent casing is required for interior bents of structures crossing streams where drilled piers will be constructed in 300 mm or more of water. Permanent casings may be required where drilled piers are constructed on stream banks.

All end bent fill slopes up to 12 meters in height (defined as difference between grade point elevation and finished grade at toe of slope) shall be 1.5:1 or flatter. End bent fill slopes with heights greater than 12 meters or end bent cut slopes shall be 2:1 or flatter.

Foundations shall be designed for service loads using allowable stress design. The ultimate bearing capacity of all driven piles will be determined by "Method B - Wave Equation Analysis" outlined in Division II, Section 4.4 of the current allowable stress design AASHTO *Standard Specifications for Highway Bridges*.

Drilled pier and pile bent foundations shall be analyzed using any of the following computer programs: COM 624, Lpile, Florida Pier or FB-Pier. All drilled piers and vertical piles shall be "fixed" at the bottom such that an increase in pier or pile length will not significantly reduce the top deflection. The maximum deflection for either top of pile for a pile bent or top of column for post and beam construction on drilled piers shall be less than or equal to 25 mm in the free head condition unless otherwise approved by the D/B team structural engineer. All drilled piers shall be a minimum diameter of 1066 mm.

B. Roadway

All unreinforced fill slopes shall be 2:1 or flatter except bridge end bent slopes (see Section A) and shall have a minimum stability factor of safety of 1.3. All cut slopes shall have a minimum stability factor of safety of 1.5. Limiting equilibrium methods, such as Modified Bishop, Simplified Janbu, Spencer or any other generally accepted method, shall be used for slope stability analysis.

Retaining walls or reinforced slopes shall be designed and constructed as necessary to avoid right-of-way impacts. Modular block walls are not allowed for this project. A retaining wall is proposed for R-2547BB from Station 39+10 –L- to 41+20 –L-, Right. This retaining wall may be designed as either a gravity wall, a pile cantilever wall (either cast-in-place face or pre-cast panels) or a soil nail wall. All gravity walls

shall be designed in accordance with the NCDOT Roadway Standard Drawings. Gravity walls do not require a Foundation Design Recommendation Report and should be shown on the roadway plans. All cantilever walls, anchored tieback walls or soil nail walls shall be designed and constructed in accordance with the special provisions provided by NCDOT Soils and Foundation Design Section.

Sound barriers shall be designed in accordance with 1992 or current allowable stress design AASHTO *Guide Specifications for Structural Design of Sound Barriers*.

Embankments shall be designed and constructed such that 90% of primary consolidation occurs before paving. Reinforced bridge approach fills in accordance with the NCDOT standard are required for both end bents on all bridges.

C. Temporary Structures

Design of temporary retaining structures, which include earth retaining structures and cofferdams, shall be in accordance with Section 4 of the 1995 or current allowable stress design AASHTO *Guide Design Specifications for Bridge Temporary Works*.

III. SUBMITTALS

The Foundation Design Recommendation Report as well as any retaining walls, reinforced slopes or temporary structure designs shall be submitted for review to the NCDOT Soils and Foundation Design Section. Submittals shall include 100% complete full size plans, special provisions and calculations. A submittal is defined as one structure (wall, bridge, culvert, temporary structure, etc.) and a separate submittal will be required for the roadway foundation recommendations. Upon request, the NCDOT Soils and Foundation Design Section will furnish generic special provisions for submittals, if available. The D/B team shall make changes/corrections to plans and special provisions as directed by NCDOT. All submittals including the Foundation Design Recommendation Report, plans, special provisions and calculations shall be sealed by a professional engineer licensed in the state of North Carolina.

IV. CONSTRUCTION REQUIREMENTS:

All construction and materials shall be in accordance with the NCDOT 2002 *Standard Specificat*ions and the current NCDOT *Project Special Provisions*. Each submittal shall include a construction sequence as required by the appropriate special provision.

Embankment monitoring shall be used to verify that 90% of the primary consolidation has occurred at the direction of the prequalified geotechnical firm that does the roadway foundation design and as approved by the Engineer. Embankment monitoring shall be performed in accordance with the special provision and the settlement plate detail sheet provided by NCDOT Soils and Foundation Design Section. The prequalified geotechnical firm shall also review the embankment monitoring data to determine when paving may proceed.

The prequalified geotechnical firm that did the bridge foundation design shall approve all pile driving hammers. The D/B team shall provide quality control for the bridge foundations including pile driving records and drilled pier inspection forms. Drilled pier inspection forms

are available on the DOH website under Soils and Foundation Design Section Forms in "Industry Links". Bearing on rock for spread footings shall be verified in the field during construction.

Crosshole sonic logging (CSL) tubes are required for all drilled piers. Crosshole sonic logging testing shall be performed on a minimum of 25% of the drilled piers for each bridge or as required by the NCDOT. The NCDOT Soils and Foundation Design Section will select the drilled piers to be tested with CSL. See Crosshole Sonic Logging Special Provision for details. The first wet pour for any bridge with drilled piers shall be inspected with the shaft inspection device (Mini-SID) as manufactured by GPE, Inc. in Gainesville, Florida. The Soils and Foundation Design Section will provide information about companies providing this service upon request.

A minimum of one concrete pile for each bridge shall be tested for bearing and damage with a pile dynamic analyzer (PDA). The NCDOT Soils and Foundation Design Section will select the concrete pile to be tested with the PDA. A PDA special provision will be provided, if needed.

Copies of any inspection forms relating to foundations, settlement or retaining walls shall be sent to the NCDOT Soils and Foundation Design Section for review.

Soils and Foundation Design Section
ROADWAY AND STRUCTURE FOUNDATION GUIDELINES

The geotechnical firm shall be responsible for (but not limited to) addressing the following items for the roadway and structure foundation design of the project.

1. Analyze the stability of embankments and utilize recognized geotechnical engineering designs and construction methods to ensure embankment stability.
2. Analyze embankment settlement and if necessary, recommend mitigation through the use of surcharges, waiting periods and/or excavation of compressible material.
3. Address the following regarding embankment problems:
    a. The feasibility of using geo-textiles to achieve stability, reduce excavation of soft soils and reduce the effect of settlement on the roadway.
    b. The feasibility of using wick drains to increase the rate of consolidation of compressible soils beneath embankments.
    c. The need for settlement gages, slope inclinometers and other embankment monitoring devices and their placement and location.
4. Determine the feasibility and recommend types of retaining walls or sheeting for permanent or temporary situations and evaluate the following items:
    a. Internal and External Stability
    b. Bearing Capacity
    c. Construction Procedure
    d. Settlement
    e. Drainage

All retaining walls shall be designed in accordance with the current allowable stress design AASHTO *Standard Specifications for Highway Bridges*.

5. Determine amount of and recommend methods to mitigate any differential settlement problems at locations of culverts and utilities.
6. Analyze the stability of cut sections. Utilize recognized geotechnical engineering designs and construction methods to ensure cut slope stability.
7. Analyze the stability of roadway approaches (to the distance from the bridge that affects the stability and design of the bridge foundations) and particularly the end slopes under the bridge, utilizing recognized geotechnical engineering designs and construction methods to ensure stability.
8. Recommend pile, drilled pier or spread footing foundations for structures with regard to bearing capacity, settlement, constructability and lateral stability.
9. Recommend allowable bearing pressure for spread footings considering bearing, settlement, adjacent foundations, water table, etc. The scour critical elevation for a spread footing is at the bottom of footing elevation.
10. Address the following regarding pile and/or drilled pier foundations:
    a. Method of support – skin friction, end bearing or combination.
    b. Tip elevations.
    c. Allowable load.
    d. Settlement.
    e. Number and location of test piles or piers, load tests and/or dynamic testing for piles.
    f. Wave equation analysis using an appropriately chosen pile hammer and cushion material for piles.
    g. Pile points.
    h. Effects of pile driving or drilled pier installation on adjacent construction or existing structures.
    i. Negative skin friction for piles.
    j. Lateral stability and allowable horizontal deflections.
    k. Design scour and scour critical elevation.
    l. Point of fixity or point of rotation.
    m. Lateral squeeze for piles.
11. The geotechnical firm shall include in the geotechnical recommendations report a summary table of the bridge foundation recommendations including the following:
    a. State project number, TIP number, county, description, bridge station.
    b. Bent (work point) stations, types of foundations, allowable loads, bottom of cap or footing elevations, pile lengths, tip elevations.
12. The following items, when applicable, shall be addressed as notes on plans or comments and attached to the summary table:
    a. End slope and extent and type of slope protection.
    b. Waiting periods.
    c. The necessity of battered piles
    d. Point of fixity or point of rotation elevations.

e. Scour critical elevations.
f. Minimum tip elevations.
g. Steel pile points for steel piles or steel pile tips for concrete piles.
h. The number and location of test piles and/or dynamic testing.
i. Required rock socket for drilled piers.
j. Range of allowable hammer energies for concrete and pipe piles.

Any other items affecting the foundation of the structure should be addressed on the summary sheets and all final recommendations should be included on the summary sheets.

The geotechnical firm's attention is directed to the latest design guide entitled *Soils and Foundations Workshop Manual*, NHI Course No. 13212, Publication No. FHWA HI-88-009, published by the FHWA.

CEMENT AND LIME STABILIZATION OF SUB-GRADE SOILS:

GENERAL

The scope of work consist of the following:

1. Sampling Sub-grade soils
2. Conducting Laboratory tests to determine:
   a. Soil classifications
   b. Moisture-density Characteristics
   c. Quantity of lime or cement required to achieve specified strengths
3. Designating areas to be stabilized by either lime or cement and the required rates of application.
4. Conducting field tests to determine unconfined compressive strength

SAMPLING

Take soil samples, after project has been graded to within 50± mm of final sub-grade elevation. Sample top 200 mm at a minimum frequency of one sample per 300 linear meters for classification tests and one sample per 1000 linear meters for moisture density tests and lime or cement mix design tests in each lane. Additional samples may be taken to ensure that all the predominant soil types, limits of distribution of these soils and different site conditions have been represented.

CLASSIFICATION TESTS

Perform the following tests to determine AASHTO classifications of different soils in accordance with AASHTO specifications as modified by NCDOT. Copies of these modified procedures can be obtained from Materials and Test Unit's Soil Sub-unit.

TABLE 1

TEST	AASHTO DESIGNATION
Dry Preparation of Disturbed Soils	T-87
Particle Size Analysis of Soils	T-88
Determining the Liquid Limit of Soils	T-89
Determining the Plastic Limit and Plasticity Index of Soils	T-90

MOISTURE DENSITY TEST

Based on the criteria set in Table 2, below, perform the Moisture Density Tests, using either lime or cement. Use 10% cement by weight in soil cement, 4% lime by weight, in soil-lime mixtures. Conduct the tests in accordance to AASHTO T-99, and T-134 for soil-lime and soil-cement mixtures respectively. In each case determine the maximum dry density and optimum moisture content.

TABLE 2

CRITERIA FOR SELECTING LIME OR CEMENT

PROPERTY	A	B
Percent passing #200 Sieve	35 Max	36 Min
Liquid Limit	40 Max	41 Min
Plasticity Index	10 Max	25 Min

Use cement for all soils meeting criteria in Column "A"
Use Lime for all soils meeting criteria in Column "B"
Designer can choose either lime or cement for all soils not meeting all criteria in either column A or B.

DETERMINING THE APPLICATION RATES FOR SOIL-CEMENT AND SOIL LIME MIXTURES

SOIL CEMENT

Make specimens at optimum moisture content using a quantity of cement in the range of 5 to 12 percent by weight. Compact the specimens to a minimum density of 95% of maximum Dry Density obtained using AASHTO T 134. Make a minimum of 2 specimens for each selected cement rate. Cure the specimens for 7 days in a moist room maintained at a temperature of 23 +/–1.5° C and a humidity of 100%. At the end of curing period, immerse the specimens in water for 4 hours, after immersion test the specimens using the unconfined Compressive Strength test (AASHTO T 208 Section 7). Report the maximum strength obtained and the percent strain corresponding to it. Select the rate of cement that provides a minimum unconfined Compressive Strength of 1400 KPA and a maximum of 2400 KPA.

SOIL LIME MIXTURES

The procedure for soil lime mixtures is similar to soil cement with the following exceptions:

1. The quantity of lime required is in the rage of 3.5 to 6.5 percent by weight.
2. Compact specimens to a minimum density of 95% of maximum dry density obtained by AASHTO T99.
3. Do not immerse the specimens in water at the end of the curing period.
4. Select the rate of lime that provides a minimum unconfined compressive strength of 400 KPA.

SUBMITTALS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION

1. Submit all laboratory test results for review.
2. Submit a sketch in plan view showing areas of the project to be stabilized by either lime or cement and application rates for each stabilizer.
3. Submit any other documentation that would support recommendations made in 2 above.

CONSTRUCTION OF LIME TREATED SUBGRADE

Construct the lime treated sub-grade as specified in Section 501 of the North Carolina Department of Transportation Standard Specifications for Roads and Structures with the following exceptions:

Subsection 501-4 Equipment
Contractor's equipment will not require engineer's approval.

Subsection 501-8 (A) General
Paragraph #1 is not applicable to this project.

Subsection 501-9 (B) Preliminary Curing
Amend as follows: Allow a minimum of 2 days and a maximum of 4 days for preliminary curing.

Subsection 501-10 Compacting, Shaping, and Finishing
Last paragraph is not applicable.

Subsection 501-11 Thickness
Last two paragraphs are not applicable.

Subsection 501-15 Method of Measurement
The entire sub-sections are not applicable.

Subsection 501-16 Basis of Payment
The entire sub-section is not applicable.

CONSTRUCTION OF CEMENT TREATED SUBGRADE

Construct the soil cement sub-grade as specified in section 542 of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, with the following exceptions:

Subsection 542-4 Equipment
Contractor's equipment will not require Engineer's approval.

Subsection 542-7 Application of Cement
First paragraph is not applicable.

Subsection 542-11 Thickness
Paragraphs 2 and 3 are not applicable.

Subsection 542-16 Method of Measurement
This entire sub-section is not applicable.

Subsection 542-17 Basis of Payment
This entire sub-section is not applicable.

UNCONFINED COMPRESSIVE STRENGTH:

Allow a minimum of seven days curing before testing for strength. Test lime stabilized sub-grades using Dynamic Cone Penetrometer. Sketch of the design of this equipment and testing procedures can be obtained from NCDOT Geotechnical Unit. Required unconfined compressive strength for lime is 400 KPA. For Cement stabilized sub-grades, make field specimens, cure them for seven days and test them in the laboratory. Required unconfined compressive strength for soil cement is 1400 KPA. In both cases one test will be required for every 135 meters per 3.8 meters lane, at random locations selected using random number tables.

SUBMITTALS FOR REVIEW DURING CONSTRUCTION

Submit unconfined compressive strength test results for review.

EXCAVATION OF ROCK BY THE USE OF EXPLOSIVES

General

The scope of work consist of the following:

1) Pre-construction inventory before use of explosives.
2) Monitoring of Blast events during the excavation of rock.

Pre-construction Damage Inventory

All residential and commercial structures within 150 meters of a blast site shall be inventoried for structural damage and exterior/interior cracking before excavation of rock by explosives. The work shall include detailed preconstruction damage inventories, including both photographic/video and written documentation of existing damage, and installation of crack gauges where applicable. A copy of this information shall be furnished to the Engineer.

Monitoring

The Design-Builder's attention is directed to Section 107-11 of the Standard Specifications. In addition to the requirements of this article, the Design-Builder shall monitor blasting at each location with an engineering seismograph to determine actual vibration levels. The monitoring devices shall have been calibrated within the previous twelve months. These devices shall be capable of recording vibrations in the three perpendicular axes: vertical, transverse, and longitudinal, and also be capable of recording the full vibration waveform. Geophones shall exhibit linear response in the frequency range of 4-100 Hertz. The monitoring devices shall also be capable of recording air over pressures. This information and the blasting plan required in Section 107-11 shall be submitted to the Engineer as specified in the Section.

The monitoring of blast vibrations and the submission of blast reports shall in no way relieve the Design-Builder of his responsibilities as defined in Section 107-12."

R/W UTILITY SCOPE OF WORK:

Overview: The Design Build Firm shall be responsible for coordinating all utility relocations. Coordination shall include any necessary utility agreements when applicable. The Firm will be responsible for non-betterment utility relocation cost when the utility company has prior rights of way/ compensable interest. The utility company will be responsible for the relocation cost if they can not furnish evidence of prior rights of way or a compensable interest in there facilities.

Preparation for relocating utilities within the existing or proposed highway Rights of Way.

A. The Design Build Firm will be required to use the guide lines as set forth in the following:

(1) NCDOT Utility Manual – Policies & Procedures for Accommodating Utilities on Highway Rights of Way.

(2) Federal Aid Policy Guide – Subchapter G, Part 645, Subparts A & B

(3) Federal Highway Administration's Program Guide, Utility Adjustments & Accommodations on Federal Aid Highway Projects.

(4) NCDOT Construction Manual Section 105-8

(5) NCDOT Right of Way Manual – Chapter 16 "Utility Relocations"

(6) NCDENR Public Water Supply – Rules governing public water supply.

(7) NCDENR Division of Water Quality – Title 15A – Environment and Natural Resources.

B. NCDOT will provide the best available information pertaining to the existing utilities. The Design Build Firm will be responsible for confirming the location of the utilities, type of facility and identify the utility owner in order to coordinate the relocation of any utilities in conflict with the project.

Arrangements for Protection or Adjustments to existing utilities

A. The Design Build Firm will make the necessary arrangements with the utility

owners for adjustments, relocating or removals where the Firm and Utility Company determine that such work is essential for safety measures and performance of the required construction.

– The Design Build Firm shall not commence work at points where the highway construction operations are adjacent to utility facilities, until making arrangements with the utility company to protect against damage that might result in expense, loss, disruption of service or other undue inconvenience to the public or utility owner. The Design Build Firm shall be responsible for damage to the existing or relocated utilities resulting from his operations. In the event of interruption of any utilities by the project construction, the Design Build Firm will promptly notify the proper authority (Utility Company) and cooperate with the authority in the prompt restoration of service.

– The Design Build Firm should plan to accommodate for certain utility adjustments, reconstruction, new installation and routine maintenance work that may be underway or take place during the progress of the contract.

B. In the event of a utility conflict, the Design Build Firm will request that the utility company submit relocation plans (Highway Construction Plans to be provided by the Design Firm to Utility owners) showing existing utilities and proposed utility relocation for approval by the NCDOT.

The Firm will be required to submit (2) two copies of the Utility Relocation Plans to the NCDOT for review and approval prior to relocation work beginning.

C. The cost in relocating utilities due to the highway construction will be the responsibility of the Design Build Firm except when the utility company does not have compensable interest in their existing facilities. A compensable interest is identified as follows:

(1) Existing or prior easement rights within the limits of the project, either by recorded right of way or adverse possession (Utility occupying the same location for twenty (20) plus years outside the existing highway rights of way).

(2) Entities covered under General Statute 136-27.1. Statute requires the NCDOT to pay the non-betterment cost for certain water and sewer relocations.

D. If the Design Build Firm elects to make arrangements with a utility company to incorporate a new utility installation or relocation as part of the highway construction, the utility work done by the firm and the associated cost for the work will be negotiated and agreed upon between the firm and the utility company.

It is recommended that the Design Build Firm make arrangements to relocate water or sewer line facilities in which the entities are covered under

General Statute 136-27.1 or occupying a compensable interest. The non-betterment cost associated with this work will be borne by the Firm.

If the Design Build Firm is requested, in writing, by an entity to relocate or incorporate new water and sewer facilities as part of the highway construction, designs shall be coordinated with the Utility Owner and the NCDOT Design Services Utility Unit. Coordination shall include preparation of all plans for needed agreements and permits. The Firm would be responsible for all permit fees.

E. The Design Build Firm will be required to utilize the NCDOT Standard Utility Encroachment Agreements as necessary in relocating utilities. The Encroachment Agreements will be used under the following conditions:

(1) If a utility company is not occupying a valid right of way/compensable interest and the proposed relocation will place the relocated utilities with the existing or proposed highway rights of way.

(2) For all new utility installations within the existing or proposed highway rights of way. This includes all water and sewer lines owned by entities covered under General Statute 136-27.1.

- The NCDOT Assistant Branch Manager of Right of Way must execute approved agreements on Design Build highway projects. All the encroachment agreements are available from the NCDOT Right of Way Utility Section. See Pages 59 and 60 of the NCDOT Utility Manual on Policies & Procedures for Accommodating Utilities on Highway Rights of Way for the different types of encroachment agreements available for use.

F. If a utility company can show evidence of prior rights of way or a compensable interest in their facilities, the non-betterment utility relocation cost and needed agreements will be handled between the firm and the utility company. A copy of the agreement utilized by NCDOT when participating in utility relocation cost can be provided by the NCDOT to the firm upon request. It is suggested that the firm use this agreement (Utility Relocation Agreement) as a guide when preparing their own.

Requirements for attachments to existing and/or proposed structures

A. Attachments to structures should be avoided where feasible. Attachments should only be considered when other alternatives are cost prohibitive or not feasible due to environmental or geographical features. Attachments are prohibited under the following conditions:

(1) No attachments will be allowed to bridges carrying an

interstate/Bypass System over streams, other roadways or railroads. (No parallel utility installations within a C/A)

(2) No attachments will be allowed to cored-slab bridges.

(3) No attachments will be allowed to curved bridges.

B. Attachments to structures, if allowed, shall meet the following criteria.

(1) No attachments will be allowed below the bottom of the beams and/or girders.

(2) Drilling of or attachments to beams and/or girders will not be allowed. Attachments will only be allowed to the bottom of the bridge deck.

(3) For water and sewer force mains, only restrained joint ductile iron pipe will be allowed.

(4) A minimum of 18" of clearance to beams and/or girders shall be maintained if possible.

C. Documentation of adverse conditions or cost estimates of all feasible alternatives should be submitted to the NCDOT Design Service Utility Unit when seeking approval of a structure attachment. Cost estimates should consider all costs involved with each alternative and impacts to the utility and the highway project as a whole.

Preparation for Communication Cables/Electrical Services for Lighting, Signing & ITS Devices

A. Prior to establishing the location for new meter poles, the Design Build Firm will coordinate with the local Power Distribution Company concerning accessibility of E/C Service and safety in maintenance of the meter.

B. All service taps that require a parallel installation within the C/A will require plans for review and approval by the NCDOT prior to the installation.

– Preferably, parallel service installations within a C/A should be buried and located as close to the R/W line as practical. However, due to unusual circumstances the NCDOT may approve aerial installations.

C. The Design Build Firm will be responsible for any cost concerning service taps provided by the utility company.

Preparation for Adjusting Existing Utilities due to Proposed Traffic Management Systems Fiber Optic Communication Cables

A. See Traffic Management Scoping Outline

B. The Design Build Firm will be responsible for all cost in coordinating and adjustments of utilities for any proposed ITS Communication Cable.

ROADSIDE ENVIRONMENTAL SCOPE DETAILS:

Erosion and Sediment Control Plans should at minimum address the following:

I. Complete Set of Plans
   A. Clearing and grubbing phase
      - use correct NCDOT symbology
      - utilize adequate perimeter controls (temporary diversions, silt fence, etc.)
      - utilize rock measures w/ sediment control stone @ drainage outlets
      - take in account existing topography
      - protect existing streams
      - show phasing for culverts
      - show phasing for all pipes 36" or larger that are located in Environmentally Sensitive Areas (ESA)
      - all jurisdictional streams should be delineated as ESA (50 ft. each side of stream)

   B. Intermediate and final grade phases
      - use correct NCDOT symbology
      - protect proposed inlets with RIST-A, RIST-C, PIST-A, etc.
      - utilize temp. slope drains and earth berms at top of fill slopes 10ft (3m) or higher or where there are super elevations above .04 and fills are greater than 5 ft (1.5m)
      - utilize rock energy dissipater at outlet of slope drain.
      - show any areas of streambank reforestation (based on permit)
      - devices at all drainage turnouts should utilize sediment control stone (TRSD-B, TRSC-A, etc.)
      - need adequate silt storage for 1800 cubic feet per acre or 2400 cubic feet per acre for Sensitive Watersheds
      - specify Centipede (Tifblair) sod under all guiderail and/or guardrail (NCDOT SP included)
      - use matting/roving on all ditch lines (non-jurisdictional streams) with 1.25% grade or larger and all cut/fill slopes 2:1 or greater
      - show erosion control for period between Clearing & Grubbing and Final Grade

II. Detail Sheets and Notes

A. Reforestation sheet(s): regular, wetland, streambank showing appropriate species

B. Sod placement detail sheet

C. Construction entrance detail

D. Special details and notes

III. Title Sheet

A. Show correct notes: HQW, ESA, critical habitat, clearing and grubbing, etc.

B. Show correct standards for project

C. List of standard NCDOT symbology

IV. Special Provisions

A. Included as an attachment to this scope are the NCDOT Special Provisions that may be applicable to the erosion and sediment control plans. All included Special Provisions may or may not be needed and additional special provisions may be necessary.

V. Miscellaneous

A. Plan submittal must include all pertinent design information required for review, such as design calculations, drainage areas, etc.

B. The NCDOT Roadside Environment Unit (REU) will provide a sample set of Erosion and Sedimentation Control plans (including any special details or special provisions used by the NCDOT REU) and MicroStation Erosion Control tool palette to the Designer/Planner for reference if requested.

C. Plans must address any environmental issues raised during the permitting process.

D. Sufficient time must be allowed for the Designer/Planner to make any changes to the Erosion and Sediment Control Plans deemed necessary by the NCDOT REU

E. All Erosion and Sediment Control plans must be approved by the NCDOT REU before **any** land disturbing activities can commence.

Incentive for Receiving No Violations of Laws, Ordinances, Orders or Decrees:

The Design-Builder shall abide by all environmental laws, ordinances, orders or decrees and not be issued Notices of Violations (NOV) nor Cease and Desist (C&D) orders by regulatory agencies. In addition the Design-Builder shall conduct construction activities such that the Department erosion control compliance inspections do not result in the issuance of Immediate Corrective Action (ICA) reports by the Field Operations Engineer or his designated representative. As an incentive, for each month beginning at the initial commencement of the project construction, the Design-Builder shall receive additional payment for not receiving NOV's from regulatory agencies, ICA's from the Department or Cease and Desist orders from the Corp of Engineers.

Payment shall be in the amount of $5,000.00 each month in which the Design-Builder does not receive one or more NOV's, ICA's, or C&D order. If the Design-Builder receives any of the before mentioned violations at anytime during this monthly period, the $5,000.00 incentive will be forfeited.

The Design-Builder shall notify the Engineer in writing upon commencement of construction activities on the project. The monthly period shall begin upon verification by the Engineer that construction has started.

Erosion Control Liquidated Damages:

The Design-Builder shall take all reasonable precaution to comply with all regulations of all authorities having jurisdiction over public and private land governing the protection of erosion and sedimentation. Any fines, remediation required, or charges levied against the Department for failing to comply with all rules and regulations concerning erosion and sediment control, due to the Design-Builder's negligence, carelessness, or failure to implement the erosion and sediment control plan and specifications, will be deducted from monies due the Design-Builder on his contract. In addition to said fines, remediation required, or charges levied, any associated engineering costs or actions taken by the Department in order for the Department to comply with rules and regulations, as a result of the Design-Builder's negligence, carelessness, or failure to implement the erosion and sediment control plan and specifications, will be deducted from the monies due to the Design-Builder.

Seeding and Mulching: (5)

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 by the Engineer. All rates are in pounds per acre (kilograms per hectare).

January 1 - December 31

50# (55kg)	Tall Fescue
5# (6kg)	Centipede
50# (55kg)	Pensacola Bahiagrass
500# (560kg)	Fertilizer
4000# (4500kg)	Limestone

Slopes 2:1 and Steeper and Waste and Borrow Locations:

January 1 - December 31

75# (85kg)	Tall Fescue
50# (55kg)	Pensacola Bahiagrass
500# (560kg)	Fertilizer
4000# (4500kg)	Limestone

All areas adjacent to lawns must be hand finished as directed by the Engineer to give a "lawn type appearance". Remove all trash, debris, and stones ¾ inch (19 mm) and larger in diameter or other obstructions that could interfere with providing a smooth "lawn type appearance". Incorporate a special seed mix containing the following application at these areas.

Lawn Seed Mix

50# (55 kg)	Tall Fescue Type I
50# (55 kg)	Tall Fescue Type II
5# (6 kg)	Centipede
500# (560 kg)	Fertilizer
4000# (4500 kg)	Limestone

Type I and Type II shall be separate varieties chosen from the list below.

Approved Tall Fescue Cultivars:

Adventure	Adventure II	Amigo	Anthem
Apache	Apache II	Arid	Austin
Brookstone	Bonanza	Bonanza II	Chapel Hill
Chesapeake	Chieftain	Coronado	Crossfire II
Debutante	Duster	Falcon	Falcon II
Finelawn Petite	Finelawn	Finelawn I	Genesis
Grande	Guardian	Houndog	Jaguar
Jaguar III	Kentucky 31	Kitty Hawk	Monarch
Montauk	Mustang	Olympic	Pacer
Phoenix	Pixie	Pyramid	Rebel
Rebel Jr.	Rebel II	Renegade	Safari
Shenandoah	Tempo	Titan	Tomahawk
Trailblazer	Tribute	Vegas	Wolfpack
Wrangler			

Add 10# (12kg) Kobe or Korean Lespedeza to the above mixtures May 1 - August 31.

On cut and fill slopes 2:1 or steeper add 30# (35 kg) Sericea Lespedeza
January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. Upon written approval of the Engineer, 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.

Temporary Seeding:

Fertilizer shall be the same analysis as specified for "Seeding and Mulching" and applied at the rate of 400 pounds (450 kilograms) and seeded at the rate of 50 pounds (55 kg) per hectare. Kobe or Korean Lespedeza, 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 (560 kg per hectare). Upon written approval of the Engineer, 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.

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 (560 kg per hectare). Upon written approval of the Engineer, 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.

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 (28kg to 85kg per hectare). The actual rate per acre (hectare) will be determined by the Engineer prior to the time of topdressing and the Design-Builder will be notified in writing of the rate per acre (hectare), total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for incorporating seed into the soil as to prevent disturbance of existing vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

Mowing:

The minimum mowing height on this project shall be 4 inches (100 mm).

Sodding (Centipede(Tifblair)):

General:

Sod shall be placed under all guiderail and all guardrail sections in accordance with detail for "Sodding Placement Under New Guardrail/Guiderail" and as directed by the Engineer. Sod shall be placed so that there is symmetry between the portion of the sod behind the guardrail post and in front of the face of the guardrail. No sod shall be placed where suitable stands of centipede exist as determined by the Engineer.

The sodding shall be prepared in accordance with all applicable requirements of Section 1663 of the Standard Specifications and the following provisions:

The Design-Builder shall obtain a certificate or limited permit issued by The N.C. Department of Agriculture (1-800-206-9333) or (919-733-6932) stating that the sod has been found to be free of injurious plant pests.

Materials:

Only "approved sod" (trade designation) consisting of centipede(Tifblair) grass shall be used. The sod, machine cut to the suppliers standard width and length, shall be 5/8 inch (16 mm) minimum, excluding top growth and thatch, at the time of cutting. Before cutting, the sod shall be uniformly mowed at a height of 1/2-3/4 inches (13-19 mm). Standard sod sections shall be sufficiently strong to support their own weight and retain their size and shape when suspended vertically from a firm grasp on the upper 10% of the section.

Sod shall be delivered on site within 24 hours of being cut and be covered by acceptable means during delivery. A certificate from the sod producer stating the date and time of sod cutting shall accompany the sod when it arrives at the project site.

Under sections where new median guardrail/guiderail is to be installed only 42 inch (1067 mm) wide roll sod is to be used.

Other areas requiring sod may be either 42 inch (1067 mm) wide roll sod or 18 inch by 36 inch (457 mm by 914 mm) strips as long as a 36 inch (914 mm) minimum width is placed under the guardrail/guiderail.

Soil Preparation:

Remove litter and other debris. Mow and satisfactorily dispose of weeds or other unacceptable growth on the areas to be sodded.

Prior to beginning preparation of the soil to receive sod, all eroded, uneven and rough areas shall be contour graded and/or filled with soil as directed by the Engineer. The soil shall be scarified or otherwise loosened to a depth of not less than 5 inches (130 mm) with a maximum width of 48 inches (1145 mm). Clods shall be broken and the top 2 to 3 inches (52 to 78 mm) of soil shall be worked into an acceptable soil bed by the use of soil pulverizers, drags, or harrows.

The Design-Builder shall be responsible for taking sufficient soil samples (at least one sample per planting area or mile, which ever is less) for testing by The Department Of Agriculture, Soil Testing Division, to determine the soil pH. Samples shall be taken in the presence of the Engineer. Results shall be received by the Engineer directly from the North Carolina Department of Agriculture and Consumer Services.

> Limestone: Based on these results the Design-Builder shall add limestone, if required, to bring the soil pH to 5.0 to 6.0 (opt. 5.5). The amount of limestone to be applied will be approved by the Engineer prior to application. Application of limestone will be considered incidental to the work of "Sodding" and no direct payment will be made for such.

Sulfur: Based on these results the Design-Builder shall add sulfur if the pH is greater than 7.0, to bring the soil pH to 5.0 to 6.0 (opt. 5.5). The amount of sulfur to be applied will be approved by the Engineer prior to application. Application of sulfur will be considered incidental to the work of "Sodding" and no direct payment will be made for such.

After soil preparation, lime or sulfur (if necessary), shall be uniformly distributed by mechanical means using a 42 inch (1065 mm) drop type spreader and thoroughly mixed with the top five inches (130 mm) of the soil by discing, harrowing, or other approved methods.

The area shall then be harrowed, dragged, raked, or prepared by other approved methods which will give a lawn type finish. All trash, debris and stones larger than 1-1/2 inch (38 mm) in diameter or other obstructions that could interfere with the placing of the sod shall also be removed. The finished surface shall be moistened with water prior to placing the sod as directed by the Engineer.

Placement:

Sod handling and placement shall be a continuous process of cutting, transporting and installing including repairing seams and voids. Sod shall always be installed within 48 hours after being cut. Sod shall be watered within 2 hours of installation.

Any sod or portions of sod rejected by the Engineer during the initial placement shall be removed from the project and replaced with acceptable sod immediately. The Design-Builder shall cease any and all other placement of sod on the project until rejected sod has been replaced.

After sod has been placed, and staked where necessary, according to Section 1663, it shall then be rolled or tamped carefully and firmly by means acceptable to the Engineer to ensure proper soil contact. If rolled, roller shall weigh 150#/ft (224kg/m) of roller width. Use of rubber tired equipment to roll shall not be allowed. Metal staples, 12 inches (305 mm) long unless otherwise approved, shall be made of 11 gauge (3.0 mm diameter) new steel wire so as not to bend when pinned or driven through the sod. Extreme care shall be taken to prevent the installed sod from being torn or displaced. After rolling or tamping the sod, it shall be watered uniformly and thoroughly with a minimum of 1 inch of water (5.6 gallons per square yard (25 liters per square meter) applied immediately after installation of sod. In no case shall the time interval between sod placement and initial watering exceed 2 hours. Water shall be placed to the required quantity through sequential passes to insure proper coverage and to prevent runoff. A minimum of ¼ inch (6.4 mm) should be placed on each pass.

Maintenance:

The Design-Builder shall be responsible for all watering and other maintenance required to maintain the livability and health of the sod from installation until completion of the 60 day observation period. Additional water shall be applied as needed and as directed by the Engineer to maintain the livability of the sod. Each additional watering event shall be a minimum of 0.5 inch of water (2.8 gallons per square yard (13 liters per square meter)) uniformly applied over the sodded area and may be placed in a series of passes to prevent runoff, with a minimum of ¼ inch (6.4 mm) on each pass.

Any sod or portions of sod rejected by the Engineer after placement but prior to beginning the observation period, shall be removed from the project and replaced with acceptable sod. Satisfactory replacement of sod shall begin within 10 days of notification. Failure to replace and repair damaged or dead sod as directed by the Engineer may result in sanctions under Article 108-7 or Article 108-8.

Observation Period:

The Design-Builder shall maintain responsibility for the sod for a 60 day observation period beginning upon the satisfactory completion and acceptance of all work required in the plans or as directed by the Engineer. The Design-Builder shall guarantee the sod under the payment and performance bond, refer to Article 109-10 in the standard specifications.

In the following counties, the 60 day observation period for sod installed between August 31 and March 1, shall not begin until March 1:

Alexander	Catawba	Jackson	Surry
Alleghany	Cherokee	Macon	Swain
Ashe	Clay	Madison	Transylvania
Avery	Graham	McDowell	Watauga
Buncombe	Haywood	Mitchell	Wilkes
Burke	Henderson	Polk	Yadkin
Caldwell	Iredell	Rutherford	Yancey

Installation of sod shall be permitted between August 31 and March 1, however, the Engineer shall not accept such work and begin the 60 day observation period prior to March 1. Upon satisfactory completion of work and acceptance by the Engineer, the 60 day observation period shall begin.

In all other counties, the 60 day observation period for sod installed between September 30 and March 1, shall not begin until March 1.

The Design-Builder shall be responsible year round for all watering and other maintenance required to maintain the livability of the sod from installation until final acceptance including monitoring the sod to ensure all watering and other maintenance is performed as required.

After the first 30 days of the 60 day observation period, the Design-Builder and Engineer shall meet to review the project and identify dead or damaged sod to be replaced. The Design-Builder, at no additional expense to the Department, shall satisfactorily replace any sod that is not in a living and healthy condition as determined by the Engineer. Replacement sod shall be furnished and installed in accordance with the same requirements as for initial sodding operation, except that the amounts of limestone, sulfur, and water may be readjusted as directed by the Engineer. Satisfactory replacement of sod shall begin within 10 days of notification. Failure to replace and repair damaged or dead sod as directed by the Engineer may result in sanctions under Article 108-7 or Article 108-8. Upon completion and acceptance of the sod repairs, the remaining 30 days of the observation period shall begin.

Acceptance:

At the end of the 60 day observation period, the sod furnished and installed under this contract must be in a living and healthy condition, as determined by the Engineer.

Acceptance of sod will be either at the end of the 60 day observation period or at final acceptance of the project, which ever is later.

Sodding shall be inspected by the Area Roadside Environmental Engineer to begin and end the 60 day observation period.

The sod shall be weed free at time of final acceptance.

Specialized Hand Mowing:

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

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

Seeding Equipment:

Seeding Equipment shall remain on site at all times. The equipment shall be in number that will allow all areas that require Seeding and Mulching to be accomplished.

Stage Seeding of Areas Outside of Environmentally Sensitive Areas (ESA):

The work covered by this section shall consist of the establishment of vegetated cover on cut/fill slopes as grading progresses. Seeding and Mulching shall be done in stages on cut/fill slopes which are greater than 10 feet (3m) in height or greater than 2 acres (0.8 ha) in area. Each stage shall not exceed the limits stated above.

Minimize Removal of Vegetation

The Design-Builder shall minimize removal of vegetation at stream banks and disturbed areas within the project limits as directed by the Engineer.

Stockpile Areas

The Design-Builder shall install and maintain erosion control devices sufficient to contain sediment around any erodible material stockpile areas as directed by the Engineer.

Stock Piling of Temporary Erosion Control Materials:

A sufficient quantity of Erosion and Sediment Control materials (rock, silt fence, etc) must be stockpiled on the project site for each section opened to grading operations.

Reforestation:

Reforestation will be planted on backslope cuts, 10 feet above ditchline to the clearing limits. Reforestation is not shown on the plan sheets. See the reforestation detail sheet.

Seasonal limitations: Seedlings shall be planted from November 15 through March 15.

Seedlings shall be planted as soon as practical following permanent Seeding and Mulching. Seedlings shall be planted in a 16 ft. (5 meters) wide swath adjacent to mowing pattern line.

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 made to be used 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.

Streambank Reforestation:

Streambank reforestation will be planted in areas denoted in the permit application with modifications that may be required to secure the permit. See the streambank reforestation detail sheet.

Seedlings shall be planted as soon as practical following permanent seeding and mulching. Type I seedlings shall be planted along both streambanks. Type II seedlings shall be planted in a 26 ft. (8 meters) wide swath from top of bank along both sides of stream.

Seasonal limitations: Seedlings shall be planted from November 15 through March 15.

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 made to be used 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.

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.

Environmentally Sensitive Areas:

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 area identified on the plans. This also requires special procedures to be used for seeding and mulching and staged seeding within the project.

Clearing and Grubbing:

In areas identified on the erosion control plans as "Environmentally Sensitive Areas", the Design-Builder may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Section 200, Article 200-1, in the Standard Specifications. The "Environmentally Sensitive Area" shall be defined as a 50 foot (16 meter) buffer zone on both sides of the stream (or depression), measured from top of streambank, (or center of depression). 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.

Grading:

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

Temporary Stream Crossings:

Any crossing of streams within the limits of this project must be accomplished in accordance with Section 107-13(b) of the Standard Specifications.

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" as indicated on the erosion control plans.

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 which are greater than 5 feet (1.5 meters) in height or greater than 1 acre (0.4 hectares) in area. Each stage shall not exceed the limits stated above.

Impervious Dike:

The work covered by this section consists of furnishing, installing, maintaining, and removing an impervious dike for the purpose of diverting normal stream flow around the construction site. The impervious dike shall not permit seepage of water into the construction site or contribute to siltation of the stream. The impervious dike shall be constructed of an acceptable material in the locations noted on the plans.

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

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

Gravel Construction Entrance:

Description:

The work covered by this section consists of furnishing, installing, and maintaining and removing any and all material required for the construction of a Gravel Construction Entrance.

Materials:

The filter fabric shall meet the requirements of Section 1056 for Type 2 Fabric.

Stone shall be Class A Stone and shall meet the requirements of Section 1042 for Stone for Erosion Control, Class A. Sediment control stone or railroad ballast may be substituted for Class A Stone.

Construction:

The Design-Builder shall install a Gravel Construction Entrance in accordance with the details in the plans at all points of ingress and egress until the site is stabilized.

Erosion Control on Railroad Right-of-Way

If there is sediment loss that occurs on any Railroad Right of Way, the sediment shall be removed immediately and the area regraded to original condition. The area shall then be stabilized with permanent seed and mulched according to NCDOT Standards.

ITS FUNCTIONAL SPECIFICATIONS/SCOPE OF WORK:

1.0 GENERAL REQUIREMENTS

1.1 DESCRIPTION:

Design, furnish and install four (4) way, multiduct conduit system, junction boxes, and fiber optic cable system along the entire length of the US-64 Bypass corridor. This corridor consist of the US-64 Bypass from I-440 interchange to the Business US-64 interchange. Install these devices as close as feasible to the right-of-way and/or fence line. This item of work includes installation of conduit, junction boxes, and fiber optic cable along project R-2547BA. Coordinate with the R-2547BA Contractor for the installation of these items.

Prior to Construction, provide a detailed set of preliminary plans and project specifications, for Department review and approval. No construction on the underground conduit system, junction boxes, and fiber optic communications system of this project can begin until NCDOT has approved the 100% plans and specifications. Provide NCDOT with a minimum of 20 working days for reviews of conformance.

As part of the plans, submit product information sheets contain manufacture and model numbers for all components. Depict proposed device locations in the plan package. Provide detailed drawings for each component, indicating types of materials proposed, installation details, layout of components, and fiber optic splicing details.

The Engineer will review this information and provide comments on the proposed design and components to the Design-Builder. Revise the design as directed by the Engineer and submit a revised design that reflects the Engineer's comments. The Engineer will advise the Design-Builder in writing when the design is approved for construction.

1.2 MATERIALS:

A. GENERAL:

Unless otherwise stated in these sections of the project special provisions, furnish new equipment, materials, and hardware that meets the requirements of the Traffic Signal Specifications, and the Standard Specifications for Roads and Structures.

B. QUALIFIED PRODUCTS LIST:

The Department has a signal equipment Qualified Products List (QPL) available for the Design-Builder's use. The QPL web site is:
HTTP//www.doh.dot.state.nc.us/preconstruct/traffic/TMSSU/SMS/QPL/

C. SUBMITTAL REQUIREMNTS:

Provide written certification to the Department that all Design-Builder-furnished equipment is in accordance with these specifications. When requested by the Department, provide additional certifications from independent testing laboratories and sufficient data to verify that the item meets applicable specifications. Ensure that the additional certification states that the testing laboratory is

independent of the equipment manufacturer and that neither the laboratory nor the manufacturer has a vested interest in the other.
Furnish three copies of a list of the equipment including three copies of catalog cuts. Identify the proposed equipment on the catalog cuts by a reproducible means. Equipment lists must contain the material description, brand name, manufacturer's address and telephone number, stock number, size, identifying trademark or symbol, and other appropriate ratings.

D. WARRANTIES:
Unless otherwise required herein, provide manufacturer's warranties on Design-Builder-furnished equipment for material and workmanship that are customarily issued by the equipment manufacturer and that are is at least one year in length from successful completion of the project. Include unconditional coverage for all parts and labor necessary or incidental to the repair of defective equipment or workmanship that arise during the warranty period.
Upon successful completion of the project, transfer manufacturer's warranties with proper validation by the manufacturer to the Department.

E. PLAN OF RECORD:
Prior to final acceptance, furnish plans of record of all fieldwork. Plans of record documentation will be subject to the approval prior to final acceptance.

Except for standard bound manuals, bond all 8½- x 11-inch (216- x 279-mm) documentation, including 11- x 17-inch (279- x 432-mm) drawings folded to 8½- x 11-inch (216- x 279-mm), in logical groupings in loose-leaf binders of either the 3-ring or plastic slide-ring type. Permanently label each such bound grouping of documentation.

For documentation that exceeds 8½- x 11-inch (216- x 279-mm), furnish good quality, highly legible, reproducible drawings; however, the use of 11- x 17-inch (279- x 432-mm) drawings folded and bound into manuals will be permitted without the need for reproducible drawings. Reproducible drawings may be vellum, sepias, or photographically created vellums of the original drawings.
For the fiber optic communication system, provide detailed splice details. These details should provide accurate and detailed information for each individual fiber throughout the entire system.

F. WIRE AND CABLE:
Furnish fiber optic cable on reels. When requested, furnish samples of the cable at no additional cost for inspection and testing.

1.3 CONSTRUCTION METHODS:

A. GENERAL:
Unless otherwise stated in these sections of the project special provisions, perform work that meets the requirements of the Traffic Signal Specifications, and the Standard Specifications for Roads and Structures.

Locate all underground utilities before beginning drilling, digging, or trenching operations.

Immediately cease work and notify the Engineer and the affected owners if damage to existing utilities, cables, or equipment occurs. Make all required repairs and replacements at no additional cost to the Department.

B. REGULATIONS AND CODES:
Furnish material and workmanship conforming to the National Electric Code (NEC), the National Electric Safety Code (NESC), Underwriter's Laboratories (UL), and all local safety codes in effect on the date of advertisement. Comply with Article 4, Chapter 87 of the North Carolina General Statutes (Licensing of Electrical Contractors). Comply with all regulations and codes imposed by the owner of affected utility poles. In the event of a conflict between these documents and the specifications contained herein, the cited documents will govern.

Notify the Engineer, local traffic enforcement agency, local utility company, and any affected railroad companies seven business days before operational shutdowns to coordinate connection or disconnection to an existing utility or system.

C. WIRE AND CABLE:
For installation in a conduit system, lubricate cable and wires prior to installing in conduit. Use lubricant that will not physically or chemically harm the cable jacket, wire insulation, and conduit. Maintain color coding of fibers through splices. Protect ends of wire and cable from water and moisture.

D. UNDERGROUND MARKER TAPE:
Provide a underground marker tape at a depth of 1 to 1.5 feet (0.3 to 0.45 meters) directly over all conduit installations.

2.0 DIRECTIONAL DRILLING

2.1 DESCRIPTION:
Furnish and install conduit(s) and all necessary hardware by using the horizontal directional drilling method in accordance with the plans and specifications.

2.2 MATERIALS:

A. GENERAL:
Provide conduit that is suitable for underground use in an ambient temperature range of -30 to 130 degrees F (-35 to 55 degrees C) without degradation of material properties.

Provide conduit that is resistant to benzene, calcium chloride, ethyl alcohol, fuel oil, gasoline, lubricating oil, potassium chloride, sodium chloride, sodium nitrate, and transformer oil, and is protected against degradation due to oxidation and general corrosion.

Provide conduit(s) with an outer diameter to minimum wall thickness ratio that complies with ASTM-D3035, Standard Dimension Ratio (SDR) 13.5.

Provide conduit(s) that meets or exceeds the following:

ASTM-D638	Tensile Strength - 3,000 psi (20 Mpa), minimum Elongation - 400 percent, minimum
ASTM-D1238	Melt Index - 0.4 maximum
ASTM-D1505	Density - (0941-0955 g/cc)
ASTM-D1693	Condition B - 20 percent failure, maximum
ASTM-D2444	Impact - NEMA Standards Publication Number TC7
ASTM-D3350	Cell classification - 334420 or 344420

Furnish conduits with a coefficient of friction of 0.09 or less in accordance with Belcore GR-356.

Furnish ½-inch (12.7-mm), prelubricated, woven polyester tape, pull line with a minimum rated tensile strength of 2,500 lb (11 kN).

B. POLYETHYLENE CONDUIT:
Furnish factory lubricated 1¼-inch (31.75-mm) inside diameter, low friction, coilable, conduit constructed of virgin high-density polyethylene. Provide conduit with a smooth outer wall and ribbed inner wall and ensure the conduit is capable of being coiled on reels in continuous lengths, transported, stored outdoors, and subsequently uncoiled for installation without affecting its properties or performance.

Furnish duct plugs that provide a watertight barrier when installed in an unused conduit or outer-duct conduit. Furnish duct plugs sized in accordance with the conduit furnished. Provide duct plugs that are removable.

Furnish mechanical sealing devices that provide a watertight barrier between the conduit and communications cable. Furnish mechanical sealing devices sized in accordance with the conduit furnished and with appropriately sized holes for the communications cable. Provide mechanical sealing devices that are removable.

C. OUTER-DUCT CONDUIT:
Furnish factory lubricated 5-inch (125-mm) inside diameter, low friction, coilable, high-density conduit constructed of virgin high-density polyethylene. Provide outer-duct conduit with a smooth outer wall and inner wall and ensure the conduit is capable of being coiled on reels in continuous lengths, transported, stored outdoors, and subsequently uncoiled for installation without affecting its properties or performance.

D. TRACER WIRE:
Furnish "green" insulated Number 14 AWG, THWN, stranded, copper wire to serve as a tracer wire in conduits containing fiber optic communications cable.

2.3 CONSTRUCTION METHODS:

A. PRE-APPROVALS AND MINIMUM DEPTH REQUIREMENTS:
Obtain the Engineer's approval prior to beginning drilling operations.

At all "Controlled Access Areas" including freeways and expressways where the proposed conduit will transverse under the roadway including entrance and exit ramps, ensure the conduit(s) maintains a minimum depth of 15 feet (4.6 meters) below grade or 6 inches (150 mm) below roadway subgrade. If the decision is to drill 6 inches (150 mm) below subgrade, furnish subgrade information to the Engineer prior to drilling. For an installation that runs parallel to a controlled access area or entrance and exit ramps ensure the conduit maintains a minimum depth of 30 inches (760 mm) below grade. Also, maintain a minimum horizontal and/or vertical clearance of 5 feet (1.5 meters) from any man-made structures, including but not limited to, bridges, footings, pipe culverts, box culverts, and slope protection for bridge decks. Maintain a minimum clearance of 5 feet (1.5 meters) below grade when crossing ditch lines.

At all points where the proposed conduit will transverse under city streets, state roads, driveways and/or sidewalks, ensure the conduit maintains a minimum depth of 10 feet (3 meters).

Guarantee the drill rig operator and digital walkover locating system operator are factory-trained to operate the make and model of the equipment provided and has a minimum of one year's experience operating the make and model of drill rig. Submit written documentation of the operators' training and experience at least two weeks prior to commencing directional drilling operations for review by the Engineer.

Provide a means of collecting and containing drilling fluid/slurry that returns to the surface such as a slurry pit. Provide measures to prevent drilling fluids from entering drainage ditches and storm sewer systems. Prevent drilling fluid/slurry from accumulating on or flowing onto sidewalks, other pedestrian walkways, driveways or streets. Immediately remove any drilling fluids/slurry that is accidentally spilled.

B. DIRECTIONAL DRILL OPERATIONS:
Provide grounding for the drill rig in accordance with the manufacturer's recommendations.

Place excavated material near the top of the working pit and dispose of as required. Backfill pits or trenches excavated to facilitate drilling operations immediately after the drilling has been completed.

Utilize a drill head suitable for the type of material being drilled and sized no larger than the outer diameter of the conduit to be installed. Direct the drill head as needed to obtain the proper depth and desired destination. Pressure grout with an approved bentonite slurry mixture to fill any voids. Jetting alone or wet boring with water shall not be permitted.

During each drilling operation, locate the drill head every 10 feet (3 meters) along the drill path and prior to transversing any underground utility or structure. Use the digital walkover locating system to track the drill head during the directional drilling operation. Ensure the locating system is capable of determining the pitch, roll, heading, depth and horizontal position of the drill head at any point. Unless otherwise approved, do not deviate from the proposed line and grade by more than two percent.

Once the drill head has reached its final location, remove the head, and install a reamer of appropriate size to simultaneously facilitate back drilling of the drill hole and installation of the conduit.

Once the physical installation of the conduit has started, continue performing the installation without interruption to prevent the conduit from becoming firmly set. Ensure the bentonite slurry mixture is applied as the conduit installation process is occurring.

Upon completion of the conduit installation perform a mandrel test on the conduit system to ensure that no conduit(s) has been damaged. Furnish a non-metallic mandrel having a diameter of approximately 50% of the inside diameter of the conduit in which it is to be pulled through. If damage has occurred, replace the entire length of conduit.

Extend the ends of the conduit or outer-duct such that upon completion of the installation the conduit will extend a minimum of 2 inches (50 mm) above concrete surfaces and 4 inches (100 mm) above crushed stone basis.

C. DRILLING FLUIDS:
Furnish and use lubrication for subsequent removal of material and immediate installation of the pipe. The use of water and other fluids in connection with the directional drilling operation will be permitted only to the extent necessary to lubricate cuttings. Jetting alone or wet boring with water shall not be permitted. Use a drilling fluid/slurry consisting of at least 10 percent high-grade bentonite to consolidate excavated material and seal the walls of the drill hole.

Transport waste drilling fluid/slurry from the site and dispose of such slurry in a method that complies with Local, State and Federal laws and regulations.

D. SPLICING OF THE CONDUIT:
Do not splice or join sections of conduit(s). Upon approval, a junction box may be installed at locations where splicing or coupling of the conduit is necessary due to problems encountered with the installation.

E. DUCT PLUGS AND MECHANICAL SEALING DEVICES:
Following the installation of the conduit(s) where the communications cable is not immediately installed use a duct plug to seal the ends of the conduit. Secure the pull line to the duct plug in such a manner that it will not interfere with the installation of the duct plug and provide a watertight seal. In conduits containing communications cable seal the conduit with an approved mechanical sealing device. Ensure the installation provides a watertight seal.

F. TRACER WIRE:
Pull the tracer wire simultaneously with the fiber optic communications cable in a continuous length. When multiple pulls of fiber optic cable is required, only one tracer wire is required. Where tracer wire is spliced, provide waterproof butt splices. Splicing is allowed only in cabinets and junction boxes. Label and connect the tracer wire(s) to the equipment ground bus bar in all cabinets.

G. PLANS OF RECORD:
Upon completion of the drilling operation and conduit installation furnish the Engineer with a plan of record drawing for the drilled conduit showing the horizontal and vertical locations of the installed conduit.

3.0 MULTI-DUCT CONDUIT

3.1 DESCRIPTION:

Furnish and install four (4) way, multiduct conduit system along the entire length of the US-64 Bypass corridor. This corridor consist of the US-64 Bypass from I-440 interchange to the Business US-64 interchange. Install conduit as close as feasible to the right-of-way and/or fence line.

3.2 MATERIALS:

A. MULTI-DUCT CONDUIT SYSTEM:

Furnish four (4) factory lubricated 1¼-inch (31.75-mm) inside diameter, low friction, coilable, conduit constructed of virgin high-density polyethylene. Provide individual conduits with smooth outer walls and ribbed inner walls and ensure the conduit is capable of being coiled on reels in continuous lengths, transported, stored outdoors, and subsequently uncoiled for installation without affecting its properties or performance.

Provide conduit that is suitable for underground use in an ambient temperature range of – 30 to 130 degrees F (-35 to 55 degrees C) without degradation of material properties.

Provide conduit that is resistant to benzene, calcium chloride, ethyl alcohol, fuel oil, gasoline, lubricating oil, potassium chloride, sodium chloride, sodium nitrate, and transformer oil, and is protected against degradation due to oxidation and general corrosion.

Provide conduit(s) with an outer diameter to minimum wall thickness ratio that complies with ASTM-D3035, Standard Dimension Ratio (SDR) 13.5.

Provide conduit(s) that meets or exceeds the following:

ASTM-D638	Tensile Strength - 3,000 psi (20 Mpa), minimum
	Elongation - 400 percent, minimum
ASTM-D1238	Melt Index - 0.4 maximum
ASTM-D1505	Density - (0941-0955 g/cc)
ASTM-D1693	Condition B - 20 percent failure, maximum
ASTM-D2444	Impact - NEMA Standards Publication Number TC7
ASTM-D3350	Cell classification - 334420 or 344420

Furnish conduits with a coefficient of friction of 0.09 or less in accordance with Belcore GR-356.

Furnish conduits in black, orange, blue and white colors. Provide conduits that are factory extruded with the appropriate colors.

Furnish multi-duct conduit organizers at all points where the multi-duct conduit enters and exits into a junction box or cabinet. Furnish multi-duct conduit organizers that are appropriately sized with regards to the conduits. Provide multi-duct conduit organizers that are removable.

Furnish duct plugs that provide a watertight barrier when installed in an unused conduit. Furnish duct plugs sized in accordance with the conduit furnished. Provide duct plugs that are removable.

Furnish mechanical sealing devices that provide a watertight barrier between the conduit and communications cable. Furnish mechanical sealing devices sized in accordance with the conduit furnished and with appropriately sized penetration holes for the communications cable. Provide mechanical sealing devices that are removable.

Furnish ½-inch (12.7-mm), prelubricated, woven polyester tape, pull line with a minimum rated tensile strength of 2,500 lb (11 kN) in all conduit(s).

Furnish non-detectable underground marker tape with the wording “WARNING -- Fiber Optic Cable” in all trenches.

B. TRACER WIRE:
Furnish "green" insulated Number 14 AWG, THWN, stranded, copper wire to serve as a tracer wire in all conduits containing fiber optic communications cable.

Pull the tracer wire simultaneously with the fiber optic communications cable in a continuous length. Where tracer wire is spliced, provide waterproof butt splices. Splicing is allowed only in junction boxes.

In non-used/spare conduits, seal each end of the conduit with a duct plug. Secure each end of the pull line to the duct plug prior to installing the duct plug. Ensure that the placement of the pull line does not interfere with the installation of the duct plug and provides a watertight seal.

In conduits containing communications cable seal the conduit with an approved mechanical sealing device. Ensure the installation provides a watertight seal.

C. TRENCH AND BACKFILL:
Maintain a minimum trench depth of 30 inches (760 mm) below finished grade or 6 inches (150 mm) below roadway subgrade, whichever is deeper.

Remove all rock and debris from backfill material. Remove excess material from the site and compact the excavation.

After the installation of the conduits and upon completion of the tamping and backfill process, perform a mandrel test on each individual conduit to ensure that no conduit has been damaged. Furnish a non-metallic mandrel having a diameter of approximately 50% of the inside diameter of the conduit in which it is to be pulled through. If damage has occurred replace the entire length of conduit.

D. MULTI-DUCT INSTALLATION IN TRENCH:
Install multi-duct conduit system along the route of the trench. Install multi-duct conduit organizers at points where the multi-duct conduit system enters or exits the junction boxes.

Install the non-detectable marker tape approximately 15 inches (380 mm) below the finished grade.

E. SPLICING OF MULTI-DUCT:
Splicing or joining of the multi-duct is prohibited. Install a junction box at all locations where splicing or coupling of the multi-duct would be necessary due to problems encountered with the installation method.

F. PLANS OF RECORD:
Upon completion of the multi-duct conduit system installation, furnish the Engineer with a plan of record profile drawing and plan drawing showing the horizontal locations of the installed conduit system.

4.0 JUNCTION BOXES

4.1 DESCRIPTION:
Furnish and install junction boxes (pull boxes) with all necessary hardware in accordance with the plans and specifications. Comply with the provisions of section 1.

4.2 MATERIALS:

A. GENERAL:
Furnish junction boxes with covers, graded stone, and all necessary hardware. Comply with the following except as noted herein:

Graded Stone.....Articles 545-2 and 545-3
Junction boxes.....Article 1411-2

Provide junction boxes and covers that have a minimum static coefficient of 0.5 as determined by ASTM D-1894 for all exposed surfaces. Provide junction boxes and covers that are sunlight resistant in accordance with ASTM G-53 and have a water absorption ratio no greater than 0.5 percent in accordance with ASTM D-570.

Provide junction boxes with minimum inside dimensions of 30(l) x 15(w) x 24(d) inches (760(l) x 380(w) x 600(d) mm) that can withstand a H-20 loading in accordance with AASHTO Standard Specifications for Highways and Bridges, H520-44.

Provide junction box covers with standard "NCDOT Fiber Optic" logos, pull slots, and stainless steel pins.

Do not provide a sealant compound between junction boxes and covers.

B. CONSTRUCTION METHODS:
Comply with the following except as noted herein:

Junction boxes.....Article 1411-3

Install the junction boxes flush with finished grade. Do not install sealant compound between junction boxes and covers.

Install junction boxes at maximum intervals of fifteen hundred (1500) feet (457 meters), or at locations where underground splicing is necessary.

5.0 FIBER-OPTIC CABLE

5.1 DESCRIPTION:

Furnish and install single mode fiber-optic (SMFO) communications cable, and all necessary hardware in accordance with these specifications. Comply with the provisions of section 1.

5.2 MATERIALS:

A. GENERAL:

Furnish forty-eight (48) fiber SMFO communications cable, communications cable identification markers, and all necessary hardware. Test each fiber in the cable and record the OTDR results electronically and on hard copy. Deliver electronic and hard copy of the fiber optic cable test results to the Department.

At US-64 Bypass & US-64 Business and at US-64 Bypass and I-440, seal the ends of the fiber optic cable with a heat shrink cable sealing device.

B. SMFO COMMUNICATIONS CABLE:

Furnish loose tube fiber-optic cable with forty-eight (48) fibers that complies with RUS CFR 1755.900, single mode with a dielectric central member. Use single mode fiber in the cable that does not exceed 0.25 dB/km at 1550 nm and 0.35 dB/km at 1310 nm. Provide cable with all fibers that are useable and with a surface sufficiently free of imperfections and inclusions to meet optical, mechanical, and environmental requirements. Provide cable with a minimum of one ripcord under the sheath for easy sheath removal and with a shipping, storage, installation, and operating temperature of at least -40 to 160 degrees F (-40 to 73 degrees C).

Have a dual layered, UV cured acrylate fiber coating applied by the cable manufacturer that may be stripped mechanically or chemically without damaging the fiber.

Provide fibers inside a loose buffer tube. Use a doped silica core surrounded by concentric silica cladding for each fiber. Distinguish each fiber and buffer tube from others by means of color coding meeting the requirements of EIA/TIA-598, “Color Coding of Fiber-Optic Cables.” In buffer tubes containing multiple fibers, ensure that the colors are stable during temperature cycling and not subject to fading, sticking, or smearing into each other or into the gel filling material. Construct buffer tubes with an inner layer made of polycarbonate and an outer layer made of polyester. Use fillers in cable core if necessary to provide a symmetrical cross-section of cable. Fill buffer tubes with non-hygroscopic, non-nutritive to fungus, electrically non-conductive, homogenous gel. Ensure gel is free from dirt and foreign matter, and is removable with conventional nontoxic solvents.

Provide a central member consisting of a dielectric glass reinforced plastic rod. Apply binders with sufficient tension to secure buffer tubes and binders to the central member without crushing buffer

tubes. Ensure binders are non-hygroscopic, non-wicking (or rendered so by the flooding compound), and dielectric with low shrinkage.

Provide cable that has cable core interstices filled with super-absorbent, water-blocking compound that is non-conductive and homogenous. Ensure compound is free from dirt and foreign matter, and is removable with conventional nontoxic solvents.

Provide cable with high tensile strength aramid yarns or fiberglass yarns that are helically stranded evenly around the cable core.

Provide cable jacket of consistent thickness that is free of holes, splits, and blisters, and containing no metal elements. Provide outer jacket of medium density polyethylene with minimum nominal sheath thickness of 0.050 inch (1.25 mm). Ensure polyethylene contains carbon black for ultraviolet light protection and does not promote the growth of fungus.

Provide length markings in sequential feet and within one percent of actual cable length. Ensure character height of the markings is approximately 0.10 inch (2.5 mm).

C. COMMUNICATIONS CABLE IDENTIFICATION MARKERS:
Furnish yellow communications cable identification markers that are resistant to fading when exposed to UV sources and changes in weather inside all junction boxes. Use markers designed to coil around fiber-optic cable, and that do not slide or move along the surface of the cable once installed. Ensure exposure to UV light and weather does not affect the markers natural coiling effect or deteriorate performance. Provide communications cable wraps that permit writing with an indelible marking pen and that contain the following text in black:

WARNING
NCDOT FIBER OPTIC CABLE
CONTACT TELEPHONE NUMBER: (919) 233-9331

Overall Marker Dimensions.....7(l) x 4(w) inches [175 mm(l) x 100 mm(w)]
Lettering Height.....3/8 inch (9.5 mm) for "WARNING"
Other Lettering.....1/4 inch (6.5 mm)

Submit a sample of the proposed communications cable identification markers to the Engineer for approval before installation.

5.3 CONSTRUCTION METHODS:

A. GENERAL:
Provide cable manufacturer's attenuation and Optical Time Domain Reflectometer (OTDR) testing data for each reel of cable.

Install single mode fiber-optic (SMFO) communications cable, communications cable identification markers and all necessary hardware.

Take all precautions necessary to ensure cable is not damaged during storage, handling, and installation. Do not violate the minimum bending radius of 20 times the radius of the cable diameter or the manufacturer's recommendation, whichever is greater. Do not step on cable nor run over cable with vehicles or equipment. Do not pull cable over or around obstructions, or along the ground.

Determine lengths of cable necessary to reach from termination-point to termination-point. Install cable in continuous lengths between approved splicing facilities. Additionally, provide fifty (50) feet of slack cable in all junction boxes.

Keep cable ends sealed at all times during installation to effectively prevent the ingress of moisture. Use approved heat shrink cable end cap. Do not use tape to seal cable ends.

Before installing cable, provide three copies of the cable manufacturer's recommended and maximum pulling tension. Do not exceed the manufacturer's recommended pulling tension. Use pulling grips containing a rotating swivel. Coil cable in a "figure-8" configuration whenever cable is unreeled for subsequent pulling.

Install fiber-optic cable underground in conduit using cable-pulling lubricants approved by the fiber-optic cable manufacturer and the Engineer. Use a dynamometer (clutch device) so as not to exceed the maximum allowable pulling tension if the cable is pulled by mechanical means. Do not use a motorized vehicle to generate cable-pulling forces.

Keep tension on the cable reel and pulling line at the start of each pull. Do not release tension if the pulling operation is halted. Restart the pulling operation by gradually increasing tension until the cable is in motion.

6.0 FIBER-OPTIC SPLICE ENCLOSURES:

6.1 DESCRIPTION:
Furnish and install underground fiber-optic splice enclosures, and all necessary hardware where required to join fiber optic cables. Comply with the provisions of section 1.

6.2 MATERIALS:

A. GENERAL:
Furnish underground splice enclosures where required to join fiber optic cables.

B. SPLICE ENCLOSURE:
Furnish underground splice enclosures that are re-enterable using a mechanical dome-to-base seal with a flash test valve, and that are impervious to the entry of foreign material (water, dust, etc.). Ensure enclosures are manufactured in such a manner to be suitable for buried, junction box, and manhole installation.

Provide enclosures with a minimum of one oversized oval port that will accept two cables and with a minimum of four round ports (for single cables) which will accommodate all cables entering the enclosure. Provide heat shrink cable shields with the enclosure to ensure a weather tight seal where each cable enters the enclosure.

Within enclosures, provide the minimum necessary number of hinged mountable splice trays to store the number of splices required, plus the capacity to house six additional splices. Provide a fiber containment basket for storage of loose buffer tubes that are expressed through the enclosure. Ensure enclosures allow sufficient space to prevent macrobending of the buffer tubes when coiled.

Provide splice trays that hold, protect, and organize optical fibers, and that secure fibers inside the splice tray.

6.3 CONSTRUCTION METHODS:

A. GENERAL:
Install splice enclosures with splice trays, basket containment assemblies, racking for slack cable or fibers, and strain relief hardware, and all other necessary hardware. Fusion splice and secure SMFO cable in splice trays inside the splice enclosure. Do not exceed 0.05 dB of attenuation per splice.

Furnish strain relief so that no tensile force is on the SMFO cable when it is held within the aerial splice enclosure.

B. TERMINATION AND SPLICING WITHIN SPLICE ENCLOSURE:
Fusion splice all fibers. For all buffer tubes designated to be expressed through the splice enclosure, neatly coil the excess tubing inside the basket provided with the enclosure. Ensure that all buffer tubes are contained within the splice tray so that no bare fibers are outside the tray. Do not damage the fiber or exceed the minimum-bending radius of the fiber.

Install heat shrink cable shields using methods recommend by the manufacturer of the enclosure. Perform a pressurization flash test on the enclosure in accordance with the manufacturer's recommend procedures at the conclusion of the splicing procedure and prior to the final placement of the enclosure.

Install enclosures with a sufficient amount of slack cable to allow the enclosure to be extended into a splicing vehicle that is located within 10 feet (3 meters) of the junction boxes.

For underground and junction box facility installations, place the enclosure along with required spare cables in the facility in a neat and workmanship like manner. Do not damage cable or violate the minimum bending radius of the cable.

C. TESTING:
Provide written notification a minimum of ten days before beginning fiber-optic cable testing.

After completion of splicing, perform an OTDR test on each fiber to ensure the fusion splices are 0.05 dB or less and the fiber attenuation does not exceed 0.25 dB/km at 1550 nm and 0.35 dB/km at 1310 nm.

If any fusion splice exceeds 0.05dB, remake the splice until the loss falls below 0.05 dB. If any fiber exceeds the maximum allowable attenuation or if the fiber-optic properties of the cable have been impaired, take approved corrective action including replacement of complete segments of fiber-optic cable if required.

Furnish durable labeled plots and electronic copies of test results for each fiber including engineering calculations demonstrating that OTDR test results meet or exceed the attenuation requirements and that optical properties of the cable have not been impaired. Provide engineering calculations and tests for fiber-optic cable that demonstrates the loss budget where the fiber originates and the point where the fiber meets an electronic device.

7.0 DELINEATOR MARKERS

7.1 DESCRIPTION:

Furnish and install delineator markers with all necessary hardware in accordance with these specifications. Comply with the provisions of section 1.

7.2 MATERIALS:

Furnish delineator markers and all necessary hardware. Furnish delineator markers that are a tubular design, approximately 6 feet (1.8 meters) long, and constructed of a Type III, high density polyethylene material. Provide delineator assemblies that are ultraviolet stabilized to help prevent components from color fading, warping, absorbing water and deterioration with prolonged exposure to the elements. Provide delineators designed to self-erect after being knocked down or pushed over.

Provide delineators posts that are orange in color.

Provide text, including the division contact number that is hot stamped in black on a yellow background material that will not fade or deteriorate over time. Provide delineator markers with a nominal message height of 15 inches (380 mm) and that contain the following text visible from all directions approaching the assembly:

WARNING
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
OPTIC CABLE
BEFORE EXCAVATING OR
IN AN EMERGENCY
CALL: (919) 233-9331

7.3 CONSTRUCTION METHODS:

Submit a sample of the proposed delineator markers for approval prior to installation.

Install delineator markers at five hundred (500) feet intervals. Install delineator markers using a method that firmly and securely anchors the delineator marker in the ground to prohibit twisting and easy removal.

DIVISION 1
GENERAL REQUIREMENTS

SECTION 101
DEFINITIONS OF TERMS

101-1 GENERAL

Whenever the terms defined in this section are used in those specifications, in any of the contract documents, or on the plans, the intended meaning of such terms shall be as defined in this section.

101-2 ABBREVIATIONS

AAN _____American Association of Nurserymen
AAR _____Association of American Railroads
AASHTO __American Association of State Highway and Transportation Officials
ACI _____American Concrete Institute
ADT _____Annual Average Daily Traffic
AED _____Associated Equipment Distributors
AGC _____Associated General Contractors of America
AIA _____American Institute of Architects
AISC _____American Institute of Steel Construction
AISI_____American Iron and Steel Institute
ANSI_____American National Standards Institute, Inc.
ARA _____American Railway Association
AREA _____American Railway Engineering Association
ASLA _____American Society of Landscape Architects
ASTM _____American Society for Testing and Materials
AWWA____American Water Works Association
AWS _____American Welding Society
AWPA_____American Wood Preserver's Association
CRSI _____Concrete Reinforcing Steel Institute
DHV _____Design Hourly Volume
EEI _____Edison Electric Institute
FHWA_____Federal Highway Administration, U.S. Department of Transportation
FSS _____Federal Specifications and Standards, General Services Administration
GS _____General Statutes of North Carolina
IES_____Illuminating Engineering Society
NEC National Electrical Code
NEMA_____National Electrical Manufacturers Association
NESC _____National Electrical Safety Code

WAKE

SPIB Southern Pine Inspection Bureau
SSPC Steel Structures Painting Council
UL Underwriters' Laboratories, Inc.
AMRL AASHTO Materials Reference Laboratory
CCRL Cement and Concrete Reference Laboratory

101-3 ACT OF GOD.

Events in nature so extraordinary that the history of climate variations and other conditions in the particular locality affords no reasonable warning of them.

101-4 ADDITIONAL WORK.

Additional work is that which results from a change or alteration in the contract and for which there are existing contract unit prices, provided in the original contract or an executed supplemental agreement.

101-5 ADMINISTRATOR.

The State Highway Administrator.

101-6 ADVERTISEMENT.

The public advertisement inviting Request for Qualifications for the design and construction of specific projects.

101-7 ARTICLE.

A primary numbered subdivision of a section of the standard specifications.

101-8 AWARD.

The decision of the Board of Transportation to accept the proposal of the selected Design-Builder for work which is subject to the furnishing of payment and performance bonds, and such other conditions as may be otherwise provided by law, the Request for Proposals, and the Standard specifications.

101-9 BASE COURSE.

That portion of the pavement structure of planned thickness placed immediately below the pavement or surface course.

101-10 BID (OR PROPOSAL).

The offer of a Design-Builder in the form of a Design-Build price proposal and a Design-Build technical proposal to perform the work and to furnish the labor and materials at the prices quoted.

101-11 BID BOND OR BID DEPOSIT.

The security furnished by the Proposer with his proposal as guaranty that he will furnish the required bonds and execute such documents as may be required if his proposal is accepted.

101-12 BIDDER.

An individual, partnership, firm, corporation, or joint venture formally submitting a proposal for the work contemplated. On Design-Build projects the word refers to respondents to the Design-Build Proposal invitation.

101-13 BOARD OR BOARD OF TRANSPORTATION.

The Board created by the provisions of G.S. 143B-350 for the purpose of formulating policies and priorities for the Department of Transportation, and awarding all state highway construction contracts.

101-14 BRIDGE.

A structure including supports, erected over a depression or an obstruction such as water, highway, or railway, and having a track or passage way for carrying traffic or other moving loads and having a length measured along the center of the roadway of more than 20 feet between undercopings of end supports, spring lines of arches, or between extreme ends of openings for multiple reinforced concrete box structures.

Bridge Length. The length of a bridge structure is the overall length measured along the line of survey stationing back to back of backwalls of abutments, if present, otherwise end to end of the bridge floor.

Bridge Width. The clear width measured at right angles to the longitudinal centerline of the bridge between the bottom of curbs, guard timbers or face of parapets, or in the case of multiple height of curbs, between the bottoms of the lower risers.

101-15 CALENDAR DAY.

A day shown on the calendar beginning and ending at midnight.

101-16 CHIEF ENGINEER.

The Chief Engineer, Operations, Division of Highways, North Carolina Department of Transportation.

101-17 COMPLETION DATE.

That date set forth in the special provisions or as revised by authorized extensions, by which date it is required that the work set forth in the contract be satisfactorily completed.

101-18 CONSTRUCTION EASEMENT.

A right owned by the Department of Transportation in a parcel of land owned by a third party outside the highway right of way for the purpose of containing construction which exceeds the right of way.

101-19 CONTRACT.

The executed agreement between the Department of Transportation and the successful Proposer, covering the performance of the work and the compensation therefor.

The term contract is all inclusive with reference to all written agreements affecting a contractual relationship and all documents referred to therein. The contract shall specifically include, but not be limited to, the Design-Build Package, the Design-Build Technical Proposal, the Design-Build Price Proposal, the printed contract form and all attachments thereto, the contract bonds, the plans, the standard specifications and all supplemental specifications thereto, the standard special provisions and the project special provisions contained in the Design-Build Package, and all executed supplemental agreements, all of which shall constitute one instrument.

101-20 CONTRACT ITEM.

A specifically described unit of work for which a unit or lump sum price is provided in the original contract or an executed supplemental agreement. Synonymous with "Pay Item".

101-21 CONTRACT LUMP SUM PRICE.

The amount proposed for a lump sum item that has been submitted by the Design-Builder in his price proposal.

101-22 CONTRACT PAYMENT BOND.

A bond furnished by the Design-Builder and his corporate surety securing the payment of those furnishing labor, materials, and supplies for the design and construction of the project.

101-23 CONTACT PERFORMANCE BOND.

A bond furnished by the Design-Builder and his corporate surety guaranteeing the performance of the contract.

101-24 CONTRACT TIME.

The number of calendar days inclusive between the date of availability and the completion date, said dates being set forth in the contract, including authorized extensions to the completion date.

101-25 CONTRACT UNIT PRICE.

The unit price for a unit item established in an executed supplemental agreement.

101-26 CONTRACTOR.

The successful Proposer to whom the contract has been awarded, and who has executed the contract documents and furnished acceptable contract bonds.

101-27 CULVERT.

Any structure not classified as a bridge which provides an opening under the roadway.

101-28 CURRENT CONTROLLING OPERATION OR OPERATIONS.

Any operation or operations, as determined by the Engineer, which if delayed would delay the completion of the project.

101-29 DATE OF AVAILABILITY.

That date, set forth in the Request for Proposals, by which it is anticipated that the Contract will be executed and sufficient work sites within the project limits will be available for the Design-Builder to begin his controlling operations.

101-30 DEPARTMENT OR DEPARTMENT OF TRANSPORTATION.

A principal department of the Executive Branch which performs the functions of planning, design, construction, and maintenance of an integrated statewide transportation system.

101-31 DIVISION OF HIGHWAYS.

The division of the Department of Transportation which, under the direction of the Secretary of Transportation, carries out state highway planning, design, construction, and maintenance functions assigned to the Department of Transportation.

101-32 DRAINAGE EASEMENT.

A right, owned by the Department of Transportation, in a parcel of land owned by a third party outside the highway right of way, to construct and maintain ditches, channels, or structures for directing the course and flow of water outside the highway right of way.

101-33 EASEMENT.

A property right to use or control real property of another.

101-34 ENGINEER.

The Chief Engineer Operations, Division of Highways, North Carolina Department of Transportation, acting directly or through his duly authorized representatives.

101-35 EQUIPMENT.

All machinery and equipment, together with the necessary supplies, tools, and apparatus for upkeep and maintenance, all of which are necessary for the proper construction and acceptable completion of the work.

101-36 EXTRA WORK.

Work found necessary or desirable to complete fully the work as contemplated in the contract for which payment is not provided for by the contract unit or lump sum prices in the original contract. Extra work shall not be work which in the terms of the specifications and special provisions is incidental to work for which there is a contract price or work for which payment is included in some other contract unit or lump sum price.

101-37 FINAL ACCEPTANCE DATE.

That date on which all work set forth in the contract and work modified by the Engineer is satisfactorily completed excluding any observation periods not specifically made a part of the work by the specifications or special provisions.

101-38 FINAL ESTIMATE.

The document which contains a final statement of all quantities and total dollar amount for each item of work performed during the life of the contract including any adjustments to those amounts made under the terms of the contract. The final statement will be titled The Final Estimate and will be the document utilized to document final payment to the Design-Builder. Receipt of this document by the Design-Builder will begin the time frame for filing of a verified claim with the Department as provided for in G.S. 136-29 of the General Statutes of North Carolina.

101-39 FINAL ESTIMATE ASSEMBLY.

As constructed plans and other project records which establish the final statement of quantities to be paid and document work performed on the project.

101-40 FORCE ACCOUNT NOTICE.

A written notice to the Design-Builder that extra work ordered by the Engineer will be paid for as force account work.

101-41 FORCE ACCOUNT WORK.

Work that is paid for in accordance with Article 109-3 or on the basis of the force account formula provided in the contract.

101-42 HIGHWAY.

A general term denoting a public way for purposes of vehicular travel, including the entire area within the right of way. Synonymous with "Road" and "Street".

101-43 HOUR.

One of the 24 equal parts of a day.

101-44 INSPECTOR.

The authorized representative of the Engineer assigned to make a detailed inspection of any or all portions of the work and materials.

101-45 INTERMEDIATE COMPLETION DATE.

That date set forth in the contract or as revised by authorized extensions, by which date it is required that the portion of work set forth in the contract be satisfactorily completed.

101-46 INTERMEDIATE COMPLETION TIME.

The time set forth in the contract or as revised by authorized extensions, by which it is required that the portion of work set forth in the contract be satisfactorily completed.

101-47 INTERMEDIATE CONTRACT TIME (DAYS).

The number of calendar days inclusive between the date of availability and the completion date, said dates being set forth in the special provisions, including authorized extensions to the intermediate completion date.

101-48 INTERMEDIATE CONTRACT TIME (HOURS).

The number of hours inclusive between the time of availability and the intermediate completion time, said times being set forth in the special provisions, including authorized extensions to the intermediate completion time.

101-49 INVERT.

The lowest point in the internal cross section of a pipe or other culvert.

101-50 INVITATION TO BID.

The notification that proposals will be received for the design and construction of specific projects.

101-51 LABORATORY.

The testing laboratory of the Department of Transportation, Design-Builder, or any other testing laboratory which may be designated or approved by the Engineer.

101-52 LOCAL TRAFFIC.

Traffic which must use the facility under construction in order to reach its destination.

101-53 MAJOR AND MINOR CONTRACT ITEMS.

Major contract items are listed as such in the project special provisions. All other original contract items and extra work shall be considered as minor items.

101-54 MATERIALS.

Any substances which may be incorporated into the construction of the project.

101-55 MEDIAN.

The center section of a divided highway which separates the traffic lanes in one direction from the traffic lanes in the opposite direction.

101-56 PAVEMENT STRUCTURE.

The combination of base and surface courses placed on a subgrade to support the traffic load and distribute it to the roadbed.

101-57 PAY ITEM.

Synonymous with "Contract Item".

101-58 PLANS.

The project plans, Standard Drawings, working drawings and supplemental drawings, or reproductions thereof, approved by the Engineer, which show the location, character, dimensions and details of the work to be performed

(A)Standard Drawings:

Drawings approved for repetitive use, showing details to be used where appropriate. All Standard Drawings approved by the Department plus subsequent revisions and additions. Standard Drawings are available for purchase from:

Randy A. Garris, PE
State Contract Officer
1591 Mail Service Center
Raleigh, NC 27699-1591

(B) Initial Plans:

Department-furnished drawings included as part of the Design-Build Package.

(C) Project Plans:

Construction drawings prepared, sealed and completed by the Design-Builder. Specific details and dimensions peculiar to the work, which are completed by the Design-Builder.

(D)Working Drawings and Supplemental Drawings:

Supplemental design sheets, shop drawings, or similar data which the Design-Builder is required to submit to the Engineer as described in the Scope of Work.

(E) As-Constructed Drawings:

Final drawings prepared by the Design-Builder, documenting the details and dimensions, of the completed work.

101-59 PROJECT.

The specific section of the highway together with all appurtenances, and the design and construction to be performed thereon under the contract.

101-60 PROJECT SPECIAL PROVISIONS.

Special provisions peculiar to the project and not otherwise thoroughly or appropriately set forth in the standard specifications or plans.

101-61 PROPOSAL FORM.

This definition is deleted for this project.

101-62 RIGHT OF WAY.

The land area shown on the plans as right of way to be furnished by the Department of Transportation within which the project is to be constructed.

101-63 ROAD.

Synonymous with "Highway" and "Street".

101-64 ROADBED.

The graded portion of a highway usually considered as the area between the intersections of top and side slopes, upon which the base course, surface course, shoulders, and median are constructed.

101-65 ROADSIDE.

A general term denoting the area within the limits of the right of way adjoining the outer edge of the roadway. Extensive areas between the roadways of a divided highway may also be considered roadside.

101-66 ROADWAY.

The portion of a highway within limits of construction.

101-67 SECTION.

A numbered chapter of the standard specifications.

101-68 SHOULDER.

The portion of the roadway adjacent to the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of base and surface courses.

101-69 SIDEWALK.

That portion of the roadway primarily constructed for pedestrian traffic.

101-70 SKEW ANGLE.

The angle between the centerline of the project and the centerline of a pipe, culvert, bridge pier, bent, abutment, or other drainage feature, measured to the right of the project centerline facing in the direction of progressing stations.

101-71 SPECIAL PROVISIONS.

Project special provisions and standard special provisions taken together as one body of special provisions.

101-72 SPECIFICATIONS.

The general term comprising all the directions, provisions, and requirements contained or referred to in the standard specifications, including the supplemental specifications, together with such additional directions, provisions, and requirements which may be added or adopted as special provisions.

101-73 STANDARD SPECIAL PROVISIONS.

Special directions or requirements not otherwise thoroughly or appropriately set forth in the standard specifications and which are peculiar to a selected group of projects.

101-74 STANDARD SPECIFICATIONS.

The general term comprising all the directions, provisions, and requirements contained or referred to in this book entitled "Standard Specifications for Roads and Structures", and in any subsequent revisions or additions to such book that are issued under the title "Supplemental Specifications".

101-75 STATE.

The State of North Carolina.

101-76 STATION.

A station, when used as a term of measurement, will be 100 linear feet measured horizontally. When used as a location, it will be designated point on the project.

101-77 STREET.

Synonymous with "Highway" and "Road".

101-78 SUBCONTRACTOR.

An individual, partnership, firm, joint venture, or corporation to whom the Design-Builder, with the written consent of the Engineer, sublets any part of the contract.

101-79 SUBGRADE.

That portion of the roadbed prepared as a foundation for the pavement structure including curb and gutter. On portions of projects which do not include the construction of a base course or pavement, the presence of the subgrade will not be recognized during the life of such contract.

101-80 SUBSTRUCTURE.

All of that part of the structure below the bearings of simple and continuous spans, spans, skew back of arches and tops of footings of rigid frames, together with the backwalls, and wingwalls.

101-81 SUPERINTENDENT.

The representative of the Design-Builder authorized to supervise and direct the construction for the Design-Builder and to receive and fulfill directions from the Engineer.

101-82 SUPERSTRUCTURE.

All of the part of the structure exclusive of the substructure.

101-83 SUPPLEMENTAL AGREEMENT.

A written agreement between the Design-Builder and the Department of Transportation covering amendments to the contract.

101-84 SUPPLEMENTAL SPECIFICATIONS.

General revisions or additions to this book of standard specifications which are issued under the title of "Supplemental Specifications", and which shall be considered as part of the standard specifications; or specifications, regulations, standards, or codes referenced in the contract documents.

101-85 SURETY.

A corporate bonding company furnishing the bid bond or furnishing the contract payment and performance bonds.

101-86 TEMPORARY CONSTRUCTION EASEMENT.

A temporary right, owned by the Department of Transportation, in a parcel of land owned by a third party outside the highway right of way, for the use of the Department of Transportation during the construction and which reverts to the third party on completion of construction.

101-87 THROUGH TRAFFIC.

Traffic which can reach its destination by a route or routes other than the facility under construction.

101-88 TIME OF AVAILABILITY.

That time, set forth in the special provisions, by which it is anticipated that sufficient work sites within the project limits will be available for the Design-Builder to begin his controlling operations.

101-89 TOTAL AMOUNT BID.

Same as total price bid. The total amount bid will be considered to be the correct sum total obtained by adding together the amounts bid for every item in the Design-Build Price proposal.

101-90 UNBALANCED BID.

A bid which includes any unbalanced bid price.

101-91 UNBALANCED BID PRICE.

A unit or lump sum bid price that does not reflect reasonable actual costs which the Proposer anticipates for the performance of the item in question along with a reasonable proportionate share of the Proposer's anticipated profit, overhead costs, and other indirect costs.

101-92 WORK.

Work shall mean the furnishing of all labor, materials, equipment, and incidentals necessary or convenient to the successful completion of the project, or any part, portion, or phase thereof, and the carrying out of all duties and obligations imposed by the contract.

101-93 WORKING DRAWINGS.

Stress sheets, shop drawings, erection drawings, falsework drawings, cofferdam drawings, catalog cuts, or any other supplementary drawings or similar data which the Design-Builder is required to submit to the Engineer for review and/or approval.

101-94 DESIGN-BUILD.

A form of contracting in which the successful proposer undertakes responsibility for both the design and construction of a project.

101-95 DESIGN-BUILDER.

An individual, partnership, joint venture, corporation or other legal entity that furnishes the necessary design and construction services, whether by itself or through subcontracts.

101-96 DESIGN-BUILD PACKAGE.

The documents prepared by the Department for a Design-Build project, containing all forms, information, drawings or other documentation furnished to proposers to guide the preparation and submittal of a proposal for a Design-Build project.

101-97 DESIGN-BUILD PROPOSAL.

A proposal to contract consisting of a separately sealed technical proposal and a separately sealed price proposal submitted in response to a request for proposal on a Design-Build project. The technical proposal and price proposal, in some cases, may be scheduled to be submitted on different dates.

101-98 DESIGN-BUILD PRICE PROPOSAL.

The part of a design-Build proposal containing the offer of a Proposer, submitted on the prescribed forms, to perform the work and furnish the labor and materials at the price quoted.

101-99 DESIGN-BUILD TECHNICAL PROPOSAL.

A submittal from a proposer, in accordance with requirements of the Design-Build Package, for the purpose of final selection.

101-100 PROJECT MANAGER.

The Department's authorized designee responsible for the administration of the Design-Build project.

101-101 TECHNICAL SPECIFICATIONS.

Additions and revisions to the Standard Specifications covering conditions and requirements peculiar to a Design-Build project.

101-102 TABLE OF VALUES.

A table prepared prior to beginning of construction listing estimated quantity of items for which a testing frequency is defined in the Minimum Sampling Guide. This estimate will be

used to determine required frequency of testing for materials and products incorporated into construction, and shall be updated monthly and provided to the Engineer.

5-11-01 Version

SECTION 102
PROPOSAL REQUIREMENTS AND CONDITIONS

102-1 INVITATION TO BID.

This section is deleted from this project and replaced with the special provision titled "Submittal of Proposals", which discusses the process used to evaluate the Technical and Price proposals.

102-2 PREQUALIFICATION FOR PROPOSERS.

Proposers shall prequalify with the Department. The requirements for prequalification will be furnished each prospective Proposer by the Engineer upon receipt of a written request. A Price Proposal or Technical Proposal will not be opened unless all prequalification requirements have been met by the Proposer and have been found to be acceptable by the Engineer.

In addition to the Experience Questionnaire, prequalification requirements will include provisions for the evaluation of a firm's safety record. A completed 'Safety Index Rating' form must be on file with the Department. To be prequalified to bid each firm must maintain a satisfactory safety index. An overall safety index equal to or greater than 60 is considered satisfactory. In addition, an index between 60 and 69 may be considered marginal and may result in an in-depth safety audit of a firm's safety practices. An overall safety index equal to or less than 59 is considered unsatisfactory and will prohibit prequalification of new firms or the requalification of existing firms at the time of their biennium renewal.

When an existing prequalified company's safety index becomes unsatisfactory as described above, the Engineer may require the Design-Builder to state in writing the reason(s) for the unsatisfactory rating and produce such supporting data as may be necessary to evaluate the circumstances surrounding the rating. When the Design-Builder cannot provide justification to raise the unsatisfactory safety index, the Engineer may invoke one or more of the following sanctions:

1. Removal of the firm from the list of prequalified bidders
2. Placement of the firm on probation for up to two years
3. Auditing of the firm's safety practices
4. Giving a written warning to correct any safety deficiencies

Firms not approved or disqualified to bid due to an unsatisfactory safety index will not be approved or reinstated to bid until they can provide adequate evidence that all safety deficiencies have been corrected.

Upon a determination by the Department that all prequalification requirements have been met, the applicant will be assigned a Prequalification Number. This Prequalification

Number will thereafter be assigned to all applicants for prequalification or requalification which the Department determines are under sufficient common ownership and management control to warrant prequalification as a single entity. This determination by the Department shall be based on the information submitted with the Experience Questionnaire and any other information obtained by the Department.

No Proposer will be prequalified who, at the time of the application for prequalification is determined by the Engineer to lack the financial capability to complete projects.

Proposers shall comply with all applicable laws regulating the practice of general contracting as contained in Chapter 87 of the General Statutes of North Carolina.

102-3 CONTENTS OF DESIGN-BUILD PACKAGES.

A Design-Build Package will be furnished by the Department to the selected Proposers from among the respondents to the Request for Qualifications. Each Design-Build Package will be marked on the front cover by the Department with an identifier of the Proposer to whom it is being furnished. This package will state the location of the project and will show a schedule of contract items for which Technical and Price proposals are invited. It will set forth the date and time Technical and Price Proposals are to be submitted and will be opened. The package will also include any special provisions or requirements which vary from or are not contained in any preliminary plans or standard specifications.

The package will also include the printed contract forms and signature sheets for execution by both parties to the contract. In the event the Proposer is awarded the contract, execution of the Design-Build Proposal will be considered the same as execution of the contract by the Proposer.

All papers bound with the package are necessary parts thereof and shall not be detached, taken apart, or altered.

The plans, standard specifications, and other documents designated in the Design-Build package shall be considered a part of the Design-Build package whether attached or not.

Up to 3 copies of the Design-Build Package will be furnished to each prospective Proposer upon request. Additional copies may be purchased for the sum of $25 each. **The copy marked with the Proposers name and prequalification number is to be returned to the Department.**

102-4 COMBINATION BIDS.

This section is deleted for this project.

102-5 INTERPRETATION OF QUANTITIES IN PROPOSAL FORM.

This section is deleted for this project.

102-6 EXAMINATION OF PRELIMINARY PLANS, SPECIFICATIONS, CONTRACT, AND SITE OF WORK.

The Proposer shall examine carefully the site of the work contemplated, the preliminary plans and specifications, and the Design-Build Package.. The submission of a Technical Proposal and a Price Proposal shall be conclusive evidence that the Proposer has investigated and is satisfied as to the conditions to be encountered; as to the character, quality, and scope of work to be performed; the quantities of materials to be furnished; and as to the conditions and requirements of the proposed contract.

A Proposer is cautioned to make such independent investigation and examination as he deems necessary to satisfy himself as to conditions to be encountered in the performance of the work and with respect to possible local material sources, the quality and quantity of material available from such property, and the type and extent of processing that may be required in order to produce material conforming to the requirements of the specifications.

102-7 SUBSURFACE INFORMATION.

If Subsurface Information is available on this project, a copy of the Subsurface Information may be obtained from the Department. A copy of the Subsurface Information will be mailed to the prospective proposers upon request.

The Subsurface Information and the Subsurface Investigation on which it is based was made for the purpose of information only. The various field boring logs, rock cores, and soil test data available may be reviewed or inspected in Raleigh at the office of the Geotechnical Unit. Neither the Subsurface Information nor the field boring logs, rock cores, or soil test data is part of the contract.

General soil and rock strata descriptions and indicated boundaries are based on a geotechnical interpretation of all available subsurface data and may not necessarily reflect the actual subsurface conditions between borings or between sampled strata within the borehole. The laboratory sample data and the in situ (in-place) test data can be relied on only to the degree of reliability inherent in the standard test method. The observed water levels or soil moisture conditions indicated in the subsurface investigations are as recorded at the time of the investigation. These water levels or soil moisture conditions may vary considerably with time according to climatic conditions including temperature, precipitation, and wind, as well as other nonclimatic factors.

THE PROPOSER IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE INFORMATION ARE PRELIMINARY ONLY. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE OR OPINIONS OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE PROPOSER IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS THEY DEEM NECESSARY TO SATISFY THEIRSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE PROPOSER SHALL HAVE NO CLAIM FOR ADDITIONAL

COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

102-8 PREPARATION AND SUBMISSION OF PRICE PROPOSALS .

All Price Proposals shall be prepared and submitted in accordance with the following listed requirements:

1. The Design-Build Package provided by the Department shall be used and shall not be taken apart or altered. The Price Proposal shall be submitted on the same form which has been furnished to the Proposer by the Department as identified by the Proposers name marked on the front cover by the Department.

2. All entries including signatures shall be written in ink.

3. The Proposer shall submit a lump sum price for every item in the Design-Build Price Proposal.
   The lump sum prices bid for the various contract items shall be written in figures.

4. An amount bid shall be entered in the Design-Build Package for every lump sum item and the price shall be written in figures in the "Amount Bid" column in the Design-Build Package.
5. The total amount bid shall be written in figures in the proper place in the Design-Build Package. The total amount bid shall be determined by adding the amounts bid for each lump sum item.
6. Changes in any entry shall be made by marking through the entry in ink and making the correct entry adjacent thereto in ink. A representative of the Proposer shall initial the change in ink.
7. The Price Proposal shall be properly executed. In order to constitute proper execution, the Price Proposal shall be executed in strict compliance with the following:
   a. If a Price Proposal is by an individual, it shall show the name of the individual and shall be signed by the individual with the word "Individually" appearing under the signature. If the individual operates under a firm name, the bid shall be signed in the name of the individual doing business under the firm name.
   b. If the Price Proposal is by a corporation, it shall be executed in the name of the corporation by the President, Vice President, or Assistant Vice President. It shall be attested by the Secretary or Assistant Secretary. The seal of the corporation

shall be affixed. If the Price Proposal is executed on behalf of a corporation in any other manner than as above, a certified copy of the minutes of the Board of Directors of said corporation authorizing the manner and style of execution and the authority of the person executing shall be attached to the Price Proposal or shall be on file with the Department.

c. If the Price Proposal is made by a partnership, it shall be executed in the name of the partnership by one of the general partners.

d. If the Price Proposal is a joint venture, it shall be executed by each of the joint venturers in the appropriate manner set out above. In addition, the execution by the joint venturers shall appear below their names.

e. The Price Proposal execution shall be notarized by a notary public whose commission is in effect on the date of execution. Such notarization shall be applicable both to the Price Proposal and to the non-collusion affidavit which is part of the signature sheets.

8. The Price Proposal shall not contain any unauthorized additions, deletions, or conditional bids.

9. The Proposer shall not add any provision reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.

10. The Price Proposal 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 Article 102-11. The bid deposit shall be a certified check or cashier check in accordance with Article 102-11.

11. The Price Proposal shall be placed in a sealed envelope and shall have been delivered to and received by the Department prior to the time specified in the Design-Build Package.

102-9 COMPUTER BID PREPARATION.

This section is deleted from this project

102-10 NON-COLLUSION AFFIDAVIT.

In compliance with Section 112(c) of title 23 USC, and current regulations of the Department, each and every Proposer will be required to furnish the Department with an affidavit certifying that the Proposer has not entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with his Price Proposal on the project. The affidavit shall also conclusively indicate that the Proposer intends to do the work with its own bonafide employees or subDesign-Builders and is not bidding for the benefit of another Design-Builder.

Affidavit forms will be included in the Design-Build Package as part of the signature sheets. Execution of the signature sheets will also constitute execution of the non-collusion affidavit. The signature sheets shall be notarized.

102-11 BID BOND OR BID DEPOSIT.

Each Price proposal 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 the contract. No Price proposal 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 Price proposal within 60 days after the opening of the same, and if the Board of Transportation shall award a contract to the Principal, the Principal shall within 14 calendar days after the notice of award is received by him 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 give such payment and performance bonds as 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.

Withdrawal of a Price proposal due to a mistake made in the preparation of the Price proposal, where permitted by Article 103-3, shall not constitute withdrawal of a Price proposal as cause for payment of the bid bond or forfeiture of the bid deposit.

When a Price proposal 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 Proposer and a Corporate Surety licensed under the laws of North Carolina to write such bonds. The execution by the Proposer shall be in the same manner as required by Article 102-8 for the proper execution of the Price proposal. The execution by the Corporate Surety shall be the same as is provided for by Article 102-8, Item 7b, for the execution of the Price proposal 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 force and 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 Price proposal is secured by a bid deposit (certified check or cashiers check), the execution of a bid bond will not be required.

If the Proposer has failed to meet all conditions of the bid bond but the Department has not received the amount due under the bid bond, the Proposer may be disqualified from further bidding as provided in Article 102-16.

102-12 DELIVERY OF PROPOSALS.

All Price Proposals shall be placed in a sealed envelope having the name and address of the Proposer, and the statement " Price Proposal for the Design/Build of State Highway Project No. _____in_____county(s)" 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 the Contract Officer as stated in the Design-Build Package. The outer envelope shall also bear the statement " Price Proposal for the Design/Build of State Highway Project No. _____". All Technical Proposals shall be placed in a sealed envelope having the name and address of the Proposer, and the statement " Technical Proposal for the Design/Build of State Highway Project No. _____in_____county(s)" 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 the Contract Officer as stated in the Design-Build Package. The outer envelope shall also bear the statement " Technical Proposal for the Design/Build of State Highway Project No. _____". If delivered in person on or before the due date, the sealed envelope shall be delivered to the office of the Contract Officer as indicated in the Design-Build Package. Price Proposals and Technical Proposals shall be submitted in accordance with the project special provision "Submittal of Proposals" contained elsewhere in this Design Build package.

All Price Proposals and Technical Proposals shall be delivered prior to the time specified in the Design-Build Package. Price proposals and Technical Proposals received after such time will not be accepted and will be returned to the Proposer unopened.

102-13 WITHDRAWAL OR REVISION OF PROPOSALS.

A Design-Build proposer will not be permitted to withdraw its Technical and Price proposals after they have been submitted to the Department.

102-14 RECEIPT AND OPENING OF PROPOSALS.

Price Proposals will be opened and read publicly at the time and place indicated in the Design-Build Package. The scores of the previously conducted evaluation of the Technical Proposals will also be read publicly at this time. Proposers, their authorized agents, and other interested parties are invited to be present.

102-15 REJECTION OF PRICE PROPOSALS.

Any Price proposal submitted which fails to comply with any of the requirements of Article 102-8, 102-11, or with the requirements of the project scope and functional specifications shall be considered irregular and may be rejected.

Irregularities due to apparent clerical errors and omissions may be waived in accordance with Article 103-2.

Any Price proposal including any unit or lump sum bid price which is significantly unbalanced to the potential detriment of the Department will be considered irregular and may be rejected. In the event the Board determines it is in the best public interest to accept such irregular Price proposal, it may award the contract based on such Price proposal subject to the provisions of Subarticle 109-4(B).

A Price proposal which does not contain costs for all proposal items shall be considered irregular and may be rejected.

In addition to the above, any Price proposals for contracts not funded with any Federal funds which are submitted by any Proposer who has failed to obtain the appropriate General Contractor's license, as required by Chapter 87 of the General Statutes of North Carolina, shall be considered irregular and will not be considered for award.

The right to reject any and all Proposals shall be reserved to the Board.

102-16 DISQUALIFICATION OF PROPOSERS.

Any one of the following causes may be justification for disqualifying a Proposer from further bidding until he has applied for and has been requalified in accordance with Article 102-2:

1. Unsatisfactory progress in accordance with Article 108-8.
2. Being declared in default in accordance with Article 108-9.
3. Uncompleted contracts which, in the judgment of the Chief Engineer, might hinder or prevent the timely completion of additional work if awarded.
4. Failure to comply with prequalification requirements.
5. The submission of more than one Price proposal for the same contract by an individual, partnership, joint venture, or corporation prequalified under the same prequalification number.
6. Evidence of collusion among Proposers. Each participant in such collusion will be disqualified.
7. Failure to furnish a non-collusion affidavit upon request.
8. Failure to comply with Article 108-6.
9. Failure to comply with a written order of the Engineer as provided in Article 105-1 if in the judgment of the Chief Engineer such failure is of sufficient magnitude to warrant disqualification.

10. Failure to satisfy the Disadvantaged Business Enterprise requirements of the project special provisions.
11. The Department has not received the amount due under a forfeited bid bond or under the terms of a performance bond.
12. Failure to submit within 60 days after being requested by the Engineer, or the submission of false information in, the documents required by Article 109-9.
13. Failure to return overpayments as directed by the Engineer.
14. Recruitment of Department employees as prohibited by Article 108-5.
15. Failure to maintain a satisfactory safety index as required by Article 102-2.

Upon a determination that a Proposer should be disqualified for one or more of the reasons listed above, the Department may, at its discretion, remove all entities prequalified under the same Prequalification Number.

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SECTION 103
AWARD AND EXECUTION OF CONTRACT

103-1 CONSIDERATION OF PRICE PROPOSALS.

After the Price proposals are opened and read, they will be tabulated. The Price proposal and score of the technical proposal will be made available to the public. In the event of errors, omissions, or discrepancies in the costs, corrections to the Price proposal will be made in accordance with the provisions of Article 103-2. Such corrected costs will be used to determine the lowest adjusted price.

After the reading of the Price proposals and technical scores, the Department will calculate the lowest adjusted price as described in the "Special Provision for Instructions to Proposers".

The right is reserved to reject any or all Price proposals, to waive technicalities, to request the Proposer with the lowest adjusted price to submit an up-to-date financial and operating statement, to advertise for new proposals, or to proceed to do the work otherwise, if in the judgment of the Board, the best interests of the State will be promoted thereby.

103-2 CORRECTION OF PRICE PROPOSAL ERRORS.

(A) General:

The provisions of this article shall apply in waiving irregularities and correcting apparent clerical errors and omissions in the "amount bid" and "total amount bid" for bid items.

(B) Discrepancy in the "Total Amount Bid" and the addition of the "Amount Bid" for each line Item.

In the case of the Total Amount Bid does not equal the summation of each Amount Bid for the line items , the Total Amount Bid shall be deemed to be the correct total for the entire project.

(C)Omitted Total Amount Bid –Amount Bid Completed

If the Total Amount Bid is not completed and the Amount Bid for all line items is completed the Total Amount Bid shall be the summation of the Amount Bid for all line items.

103-3 WITHDRAWAL OF PRICE PROPOSAL -MISTAKE.

(A) Criteria for Withdrawal of Price Proposal:

The Department of Transportation may allow a Proposer submitting a Price proposal to withdraw his Price proposal after the scheduled time of Price proposal opening upon a determination that:

1. A mistake was in fact made in the preparation of the Price proposal.
2. The mistake in the Price proposal is of a clerical or mathematical nature and not one of bad judgment, carelessness in inspecting the work site, or in interpreting the functional requirements.
3. The mistake is found to be made in good faith and was not deliberate or by reason of gross negligence.
4. The amount of the error or mistake is equal to or greater than 3 percent of the total amount of Price proposal.
5. The Proposers notice of his mistake and request for withdrawal of the Price proposal by reason of the mistake was promptly communicated to the Chief Engineer and in no instance longer than 48 hours after the scheduled time of Price proposal opening. If the Proposer notifies the Chief Engineer verbally, written notice of mistake must be submitted within 48 hours to the Chief Engineer accompanied by copies of Price proposal preparation information.
6. The Department of Transportation will not be prejudiced or damaged except for the loss of the Price proposal.

(B) Hearing by Chief Engineer:

If a files a notice of mistake along with a request to withdraw his Price proposal, the Chief Engineer (or his designee) will promptly hold a hearing thereon. The Chief Engineer will give to the requesting Proposer reasonable notice of the time and place of any such hearing. The Proposer may appear at the hearing and present the original working papers, documents, or materials used in the preparation of the Price proposal sought to be withdrawn, together with other facts and arguments in support of his request to withdraw his Price proposal. The Proposer will be required to present a written affidavit that the documents presented are the original, unaltered documents used in the preparation of the Price proposal.

(C) Action by State Highway Administrator:

A determination may be made by the Administrator that the Proposer meets the criteria for withdrawal of the Price proposal as set forth in Subarticle 103-3(A) upon presentation of clear and convincing evidence by the Proposer. The Chief Engineer will present his findings to the State Highway Administrator for action on the Proposer's request. The Chief Engineer will advise the Proposer of the Administrator's decision prior to the Board of Transportation's consideration of award.

(D) Bid Bond:

If a bid mistake is made and a request to withdraw the Price proposal is made, the bid bond shall continue in full force and effect until there is a determination by the Administrator that the conditions in Subarticle 103-3(A) have been met. The effect of the refusal of the Proposer to give payment and performance bonds within 14 calendar days after the notice of award is received by him, if award has been made by the Board of Transportation after consideration and denial of the Proposer's request to withdraw his Price proposal, shall be governed by the terms and conditions of the bid bond.

103-4 AWARD OF CONTRACT.

(A) General:

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 CFR, Part 21), issued pursuant to such act, hereby notifies all proposers that it will affirmatively insure that contracts entered in pursuant to this Request for Proposals, if awarded, will be made by the Board of Transportation to the Proposer with the lowest adjusted price as outlined in the Design-Build package without discrimination on the grounds of race, color, or national origin. The Proposer with the lowest adjusted price will be notified by letter that his proposal has been accepted and that he has been awarded the contract. This letter shall constitute the notice of award. The notice of award, if the award be made, will be issued within 60 days after the opening of Price proposals, except that with the consent of the Proposer with the lowest adjusted price the decision to award the contract to such Proposer may be delayed for as long a time as may be agreed upon by the Department and such Proposer. In the absence of such agreement, the Proposer with the lowest adjusted price may withdraw his proposal at the expiration of the 60 days without penalty if no notice of award has been issued.

Award of a contract involving any unbalanced bid price(s) may be made in accordance with the provisions of Article 102-15.

103-5 CANCELLATION OF AWARD.

The Board of Transportation reserves the right to rescind the award of any contract at any time before the receipt of the properly executed contract bonds from the successful Proposer.

103-6 RETURN OF BID BOND OR BID DEPOSIT.

All bid bonds will be retained by the Department until the contract bonds are furnished by the successful Proposer, after which all such bid bonds will be destroyed unless the individual bid bond form contains a note requesting that it be returned to the Proposer or the Surety.

Checks which have been furnished as a bid deposit will be retained until after the contract bonds have been furnished by the successful Proposer, at which time Department of Transportation warrants in the equivalent amount of checks which were furnished as a bid deposit will be issued .

103-7 CONTRACT BONDS.

The successful Proposer, within 14 calendar days after the notice of award is received by him, shall provide the Department with a contract payment bond and a contract performance bond each in an amount equal to 100 percent of the amount of the contract. All bonds shall be in conformance with G.S. 44A-33. The corporate surety furnishing the bonds shall be authorized to do business in the State

103-8 EXECUTION OF CONTRACT.

As soon as possible following receipt of the properly executed contract bonds, the Department will complete the execution of the contract, retain the original contract, and return one certified copy of the contract to the Proposer .

103-9 FAILURE TO FURNISH CONTRACT BONDS.

The successful Proposer's failure to file acceptable bonds within 14 calendar days after the notice of award is received by him shall be just cause for the forfeiture of the bid bond or bid deposit and rescinding the award of the contract. Award may then be made to the Proposer with the next lowest adjusted price Proposer or the work may be readvertised and constructed under contract or otherwise, as the Board of Transportation may decide.

SECTION 104
SCOPE OF WORK

104-1 INTENT OF CONTRACT.

The intent of the contract is to prescribe the work or improvements which the Design-Builder undertakes to perform, in full compliance with the contract. In case the method or character of any part of the work is not covered by the contract, this section shall apply. The Design-Builder shall perform all work in accordance with the contract or as may be modified by written orders, and shall do such special, additional, extra, and incidental work as may be considered necessary to complete the work to the full intent of the contract. Unless otherwise provided elsewhere in the contract, the Design-Builder shall furnish all implements, machinery, equipment, tools, materials, supplies, transportation, and labor necessary for the design, prosecution and completion of the work.

104-2 SUPPLEMENTAL AGREEMENTS.

Whenever it is necessary to make amendments to the contract to satisfactorily complete the proposed design and construction and/or to provide authorized time extensions, the Engineer shall have the authority to enter into a supplemental agreement covering such amendments.

Supplemental agreements shall become a part of the contract when executed by the Engineer and an authorized representative of the Design-Builder. The Design-Builder shall file with the Engineer a copy of the name or names of his representatives who are authorized to sign supplemental agreements.

104-3 ALTERATIONS OF CONTRACT

The Engineer reserves the right to make, at any time during the progress of the work, such alterations in the contract as may be found necessary or desirable. Under no circumstances will an alteration involve work beyond the termini of the proposed construction except as may be necessary to satisfactorily complete the project. Such alterations shall not invalidate the contract nor release the Surety, and the Design-Builder agrees to perform the work as altered at his contract unit or lump sum prices the same as if it had been a part of the original contract except as otherwise herein provided.

An adjustment in the affected contract unit or lump sum prices due to alterations in the contract that materially change the character of the work and the cost of performing the work will be made by the Engineer only as provided in this article.

If the Engineer makes an alteration in the contract that he determines will materially change the character of the work and the cost of performing the work, an adjustment will be made and the contract modified in writing accordingly. The Design-Builder will be paid for performing the affected work in accordance with Subarticle 104-8(A).

When the Design-Builder is required to perform work, which is, in his opinion, an alteration in the contract that materially changes the character of the work and the cost of performing the work, he shall notify the Engineer in writing prior to performing such work. The Engineer will investigate and, based upon his determination, one of the following will occur:

1. If the Engineer determines that the affected work is an alteration of the plans or details of construction that materially changes the character of contract, the Design-Builder will be notified in writing by the Engineer and compensation will be made in accordance with Subarticle 104-8(A).
2. If the Engineer determines that the work is not such an alteration in the contract that materially changes the character of the work and the cost of performing the work, he will notify the Design-Builder in writing of his determination. If the Design-Builder, upon receipt of the Engineer's written determination, still intends to file a claim for additional compensation by reason of such alteration, he shall notify the Engineer in writing of such intent prior to beginning any of the alleged altered work and the provisions of Subarticle 104-8(B) shall be strictly adhered to.

No contract adjustment will be allowed under this article for any effects caused on unaltered work.

104-4 SUSPENSIONS OF WORK ORDERED BY THE ENGINEER.

(A) Suspensions of the Work Ordered by the Engineer:

When the Engineer suspends in writing the performance of all or any portion of the work for a period of time not originally anticipated, customary, or inherent to the construction industry and the Design-Builder believes that additional compensation for idle equipment and/or labor is justifiably due as a result of such suspension, the Design-Builder shall notify the Engineer in writing of his intent to file a claim for additional compensation within 7 days after the Engineer suspends the performances of the work and the provisions of Subarticle 104-8 (C) shall be strictly adhered to.

Within 14 calendar days of receipt by the Design-Builder of the notice to resume work, the Design-Builder shall submit his claim to the Engineer in writing. Such claim shall set forth the reasons and support for such adjustment in compensation, including cost records, and any other supporting justification in accordance with Subarticle 104-8(C).

(B) Alleged Suspension:

If the Design-Builder contends he has been prevented from performing all or any portion of the work for a period of time not originally anticipated, customary, or inherent to the construction industry because of conditions beyond the control of and not the fault of the Design-Builder, its suppliers, or subcontractors at any tier, and not caused by weather, but the Engineer has not suspended the work in writing, the Design-Builder shall submit in writing to the Engineer a notice of intent to file a claim for additional compensation by reason of such alleged suspension. No adjustment in compensation will be allowed for idle equipment and/or labor prior to the time of the submission of the written notice of intent to

file a claim for additional compensation by reason of such alleged suspension. Upon receipt, the Engineer will evaluate the Design-Builder's notice of intent to file a claim for additional compensation. If the Engineer agrees with the Design-Builder's contention, the Engineer will suspend in writing the performance of all or any portion of the work and the provisions of Subarticle 104-8(C) shall be strictly adhered to.

If the Engineer does not agree with the Design-Builder's contention as described above and determines that no portion of the work should be suspended, he will notify the Design-Builder in writing of his determination. If the Design-Builder does not agree with the Engineer's determination, the provisions of Subarticle 104-8(C) shall be strictly adhered to. Within 14 calendar days after the last day of the alleged-suspension, the Design-Builder shall submit his claim to the Engineer in writing. Such claim shall set forth the reasons and support for such adjustment in compensation, including cost records, and any other supporting justification in accordance with Subarticle 104-8(C).

(C) Conditions:

No adjustment in compensation will be allowed under Subarticles 104-4(A) and 104-4(B) for any reason whatsoever for each occurrence of idle equipment and/or idle labor which has a duration of twenty-four hours or less.

No adjustment in compensation will be allowed under Subarticles 104-4(A) and 104-4(B) to the extent that performance would have been suspended by any other cause, or for which an adjustment is provided for or excluded under any other term or condition of this contract.

No adjustment in compensation will be allowed under Subarticles 104-4(A) and 104-4(B) for any effects caused on unchanged work. No adjustment in compensation will be allowed under Subarticles 104-4(A) and 104-4(B) except for idle equipment and/or idle labor resulting solely from the suspension of work in writing by the Engineer.

No adjustment in compensation will be allowed under Subarticles 104-4(A) and 104-4(B) where temporary suspensions of the work have been ordered by the Engineer in accordance with Article 108-7 and the temporary suspensions are a result of the fault or negligence of the Design-Builder.

104-7 EXTRA WORK.

The Design-Builder shall perform extra work whenever it is deemed necessary or desirable to complete fully the work as contemplated. Extra work shall be performed in accordance with the specifications and as directed by the Engineer. No extra work shall be commenced prior to specific authorization for the performance of such extra work being given by the Engineer.

Extra work which is specifically authorized by the Engineer will be paid for in accordance with Subarticle 104-8(A).

When the Design-Builder is required to perform work which is in his opinion extra work, he shall notify the Engineer in writing prior to performing such work. The Engineer will investigate and, based upon his determination, one of the following will occur.

1. If the Engineer determines that the affected work is extra work, the Design-Builder will be notified in writing by the Engineer and compensation will be made in accordance with Subarticle 104-8(A).

3. If the Engineer determines that the work is not extra work, he will notify the Design-Builder in writing of his determination. If the Design-Builder upon receipt of the Engineer's written determination intends to file a claim for additional compensation by reason of such work, he shall notify the Engineer in writing of such intent prior to beginning any of the alleged extra work and the provisions of Subarticle 104-8(B) shall be strictly adhered to.

104-8 COMPENSATION AND RECORD KEEPING.

(A) Compensation--Article 104-3 and Article 104-7:

When the Engineer and Design-Builder agree that compensation is due under the provisions of Articles 104-3 or 104-7, payment will be made in accordance with one of the following:

1. When the Engineer and the Design-Builder agree to the prices to be paid, the agreement will be set forth in a supplemental agreement. If the estimated total cost of the affected work is equal to or less than $15,000.00 and the prices for performing the work have been mutually agreed to, the Design-Builder may begin work before executing the supplemental agreement. If the estimated total cost of the affected work is more than $15,000.00; the Design-Builder shall not begin the affected work until the supplemental agreement is executed.
2. When the Engineer and the Design-Builder cannot agree to the prices to be paid for the affected work, the Engineer will issue a force account notice prior to the Design-Builder beginning work. In this instance the affected work shall be performed as directed by the Engineer and paid for in accordance with the provisions of Article 109-3.

(B) Claim for Additional Compensation--Article 104-3 and Article 104-7:

The Design-Builder's notice of intent to file a claim for additional compensation under the provisions of Articles 104-3 and 104-7 shall be given to the Engineer in writing. The Design-Builder shall keep accurate and detailed cost records in accordance with the provisions of Article 109-3. The Design-Builder's cost records and supporting data shall be complete in every respect and in such form that the Engineer may check them. The Design-Builder's cost records and supporting data shall clearly indicate the cost of performing the work in dispute and shall separate the cost of any work for which payment has been made. The Design-Builder's cost records shall be kept up to date and the Engineer shall be given the opportunity to review the methods by which the records are being maintained. The cost records shall be prepared on a weekly basis for each occurrence for which notice of intent to file a claim has been given and submitted to the Engineer within 7 days after the end of a given weekly period.

If the Design-Builder chooses to pursue the claim after the disputed work is complete, he shall submit a written claim to the Engineer for an adjustment in compensation based upon his cost records within 120 calendar days after completion of the disputed work. This claim shall summarize previously submitted cost records and clearly describe the Design-Builder's justification for an adjustment in compensation under the terms of the contract.

Upon receipt, the Engineer will review the Design-Builder's request and supporting documentation.

If the Engineer determines that the work covered by the claim is in fact compensable under the terms of the contract, an adjustment in compensation will be made based upon the documentation presented and his engineering judgment. The adjustment will be made on the next partial pay estimate and reflected on the final estimate. The compensation allowed shall be limited to the amount that would be paid if the work were performed in accordance with Article 109-3.

If the Engineer determines that the work covered by the claim is not compensable under the terms of the contract, the claim will be denied.

The Engineer will notify the Design-Builder of his determination whether or not an adjustment of the contract is warranted within 120 calendar days after receipt of the complete request, all necessary supporting justification, and cost records.

The failure on the part of the Design-Builder to perform any of the following shall be a bar to recovery under the provisions of Articles 104-3 or 104-7:

1. The failure of the Design-Builder to notify the Engineer in writing prior to performing the work in dispute that he intends to file a claim.
2. The failure of the Design-Builder to keep records in accordance with the provisions of Article 109-3.
3. The failure of the Design-Builder to give the Engineer the opportunity to monitor the methods by which records are being maintained.
4. The failure of the Design-Builder to submit additional documentation requested by the Engineer provided documentation requested is available within the Design-Builder's records.
5. The failure of the Design-Builder to submit cost records on a weekly basis.
6. The failure of the Design-Builder to submit the written request for an adjustment in compensation with cost records and supporting information within 120 calendar days of completion of the affected work.

(C) Compensation--Article 104-4:

The Design-Builder's notice of intent to file a claim for additional compensation under the provisions of Subarticle 104-4(A) shall be given to the Engineer in writing within 7 days after the Engineer suspends the performance of the work. For an alleged suspension, the Design-Builder's notice of intent to file a claim for additional compensation under the provisions of Subarticle 104-4(B) shall be given to the Engineer in writing. The Design-Builder shall keep accurate and detailed records of the equipment and labor alleged to be

idle. The Design-Builder's cost records, supporting data, and supporting information shall be complete in every respect and in such form that the Engineer may check them. The Design-Builder's cost records, supporting data, and supporting information for equipment idled due to the suspension or alleged suspension shall specifically identify each individual piece of equipment, its involvement in the work, its location on the project, the requested rental rate and justification as to why the equipment cannot be absorbed into unaffected work on the project during the period of suspension or alleged suspension. The Design-Builder's cost records, supporting data, and supporting information for idle labor shall include the specific employees, classification, dates and time idled, hourly rate of pay, their involvement in the project, and justification as to why they cannot be absorbed into the unaffected work on the project or other projects during the period of suspension or alleged suspension. The Design-Builder's cost records, supporting data, and supporting information shall be kept up-to-date and the Engineer shall be given the opportunity to review the methods by which the records, data, and information are being maintained. The cost records, supporting data, and supporting information shall be prepared on a weekly basis for each occurrence for which notice of intent to file a claim has been given and submitted to the Engineer within 7 days after the end of a given weekly period.

If the Design-Builder choose to pursue the claim after the suspension or alleged suspension period has ended, he shall submit a written claim to the Engineer for an adjustment in compensation based upon his cost records due to idle equipment and/or idle labor within 14 calendar days or receipt of the notice to resume work or within 14 calendar days of expiration of the alleged suspension period. This request shall summarize previously submitted cost records and clearly describe the Design-Builder's justification for an adjustment in compensation under the terms of the contract.

Upon receipt, the Engineer will evaluate the Design-Builder's request. If the Engineer agrees that the cost of the work directly associated with the suspension or alleged suspension has increased as a result of such suspension or alleged suspension and the suspension or alleged suspension was caused by conditions beyond the control of and not the fault of the Design-Builder, its suppliers, or subcontractors at any approved tier, and not caused by weather, the Engineer will make an adjustment, excluding profit, and modify the contract in writing accordingly. The Design-Builder will be paid for the verified actual cost of the idle equipment and idle labor. The compensation allowed shall be limited to the equipment, labor, bond, insurance, and tax costs, excluding profits, computed in accordance with Article 109-3.

If the Engineer determines that the suspensions of the work by the Engineer or alleged suspensions do not warrant an adjustment in compensation, he will notify the Design-Builder in writing of his determination.

The Engineer will notify the Design-Builder of his determination of whether or not an adjustment in compensation is warranted within 120 calendar days after receipt of the complete request, all necessary supporting justification, and cost records.

The failure on the part of the Design-Builder to perform any of the following shall be a bar to recovery under the provisions of Article 104-4:

1. The failure to notify the Engineer in writing within 7 days after the Engineer suspends in writing the performance of all or any portion of the work.
2. The failure to notify the Engineer in writing that he intends to file a claim by reason of alleged suspension.
3. The failure of the Design-Builder to keep records in accordance with the details of Article 109-3.
4. The failure of the Design-Builder to give the Engineer the opportunity to monitor the methods by which records are being maintained.
5. The failure of the Design-Builder to submit additional documentation requested by the Engineer provided documentation requested is available within the Design-Builder's records.
6. The failure of the Design-Builder to submit cost records on a weekly basis.
7. The failure of the Design-Builder to submit the written request for an adjustment in compensation with cost records, supporting data, and supporting information within 14 calendar days of receipt of the notice to resume work.
8. The failure of the Design-Builder to submit the written request for an adjustment in compensation with cost records, supporting data, and supporting information within 14 calendar days after the last day of the period during which the Design-Builder contends he has been prevented from performing all or any portion of the work for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) because of conditions beyond the control of and not the fault of the Design-Builder, its suppliers, or subcontractors at any approved tier, and not caused by weather.

(D) Notification of Determination:

The failure on the part of the Engineer to notify the Design-Builder of his determination on the requested adjustment in compensation within 120 calendar days after receipt of the complete request, all supporting justification, and cost records will result in payment of interest on any monies determined to be due from the requested adjustment in compensation. Interest, at the average rate earned by the State Treasurer on the investment within the State's Short Term Fixed Income Investment Fund during the month preceding the date interest becomes payable, will be paid the Design-Builder on the next partial pay estimate and reflected on the final estimate for the period beginning on the 121st day after receipt of the complete request, all supporting justification, and cost records, and extending to the date the Engineer makes his determination on the disputed work.

If the Design-Builder fails to receive such adjustment in compensation for the disputed work as he claims to be entitled to under the terms of the contract, the Design-Builder may resubmit the written request for an adjustment in compensation to the Engineer as a part of the final claim after the project is complete. The Design-Builder will only be allowed to submit the request for an adjustment in compensation one time during the construction of the project.

104-9 DISPOSITION OF SURPLUS PROPERTY.

All property that is surplus to the needs of the project will remain or become the property of the Design-Builder, unless otherwise stated in the plans or special provisions, with the following exceptions:

1. Materials which are the property of utility companies providing service to buildings which are to be demolished or removed in accordance with Sections 210 and 215.
2. Materials resulting from the removal of existing pavement in accordance with Section 250 which are to be stockpiled for the use of the Department.
3. Materials resulting from the removal of existing structures in accordance with Section 402 where the plans or special provisions indicate that the material will remain the property of the Department.
4. Aggregate base course where the Special Provisions require that this material become the property of the Department.
5. Left over materials for which the Department has reimbursed the Design-Builder as provided in Article 109-6.
6. Materials that have been furnished by the Department for use on the project.

Property shall include but not be limited to materials furnished by the Design-Builder or the Department for either temporary or permanent use on the project, salvaged materials which were part of the existing facility on the date of availability for the project, and all implements, machinery, equipment, tools, supplies, laboratories, field offices, and watercraft which are necessary for the satisfactory completion of the project.

All property of the Design-Builder shall be removed from the project by the Design-Builder prior to final acceptance.

104-10 MAINTENANCE OF THE PROJECT.

The Design-Builder shall maintain the project from the date of beginning construction until the project is finally accepted. This maintenance shall be continuous and effective and shall be prosecuted with adequate equipment and forces to the end that all work covered by the contract is kept in satisfactory and acceptable condition at all times.

The Design-Builder shall maintain all existing drainage facilities, except where the work consists of resurfacing only, such that they are in the same condition upon acceptance of the project as they were when the project was made available.

In the event that the Design-Builder's work is suspended for any reason, he shall maintain the work covered by the contract, as provided herein.

When a portion of the project is accepted as provided in Article 105-17, immediately after such acceptance the Design-Builder will not be required to maintain the accepted portions. Should latent defects be discovered or become evident in an accepted portion of the project, such defective work shall be repaired or replaced at no cost to the Department.

Where an observation period(s) is required that extends beyond the final acceptance date, the Design-Builder shall perform any work required by the observation period until

satisfactory completion of the observation period. The Design-Builder will not be directly compensated for any maintenance operations necessary, as this work will be considered incidental to the work covered by the various contract items.

104-11 FINAL CLEANING UP.

Before acceptance of the work for maintenance, the highway, borrow sources, waste areas, and all ground occupied by the Design-Builder within the project limits in connection with the work shall be cleaned of all rubbish, excess materials, temporary structures, and equipment; and all parts of the work shall be left in an acceptable condition.

The Design-Builder will not be directly compensated for the work of final cleaning up, as this work will be considered incidental to the work covered by the various contract items.

104-12 VALUE ENGINEERING PROPOSAL

This value engineering specification is to provide an incentive to the Design-Builder to initiate, develop, and present to the Department of Transportation for consideration, any cost reduction proposals conceived by him involving changes in the drawings, designs, specifications, or other requirements of the contract. This specification does not apply unless the proposal submitted is specifically identified by the Design-Builder as being presented for consideration as a Value Engineering Proposal. Submittals that propose material substitutions of permanent features such as changes from rigid to flexible or flexible to rigid pavements, concrete to steel or steel to concrete bridges will not be considered acceptable Value Engineering Proposals. Depending on complexity of evaluation and implementation, Value Engineering Proposals that provide for total savings prior to distribution of less than the thousand dollars ($10,000.00) will not generally be considered.

Value Engineering Proposals contemplated are those that would result in a net savings to the Department by providing a decrease in the total cost of construction or reduce the construction time without increasing the cost to construct the project. The effects the Proposal may have on the following items, but not limited to these items, will be considered by the Department when evaluating the proposal:

1) Service Life
2) Safety
3) Reliability
4) Economy of Operation
5) Ease of Maintenance
6) Desired Aesthetics
7) Design
8) Standardized Features
9) Environmental Impact

The Department reserves the right to reject the Proposal or deduct from the savings identified in the Proposal to compensate for any adverse effects to these items which may result from implementation of the Proposal.

The Department reserves the right to reject at its discretion any Value Engineering Proposal submitted which would require additional right of way. Substitution of another design alternate, which is detailed in the design-build package, for the one on which the Design-Builder proposed, will not be allowed. Plan errors which are identified by the

Design-Builder and which result in a cost reduction will not qualify for submittal as a Value Engineering Proposal. Pending execution of a formal supplemental agreement, implementing an approved Value Engineering Proposal, the Design-Builder shall remain obligated to perform in accordance with the terms of the existing contract. No time extension will be granted due to the time required to review a Value Engineering Proposal.

The Design-Builder is encouraged to include this specification in contracts with subcontractors. The Design-Builder shall encourage submissions of Value Engineering Proposals from subcontractors, however, it is not mandatory that the Design-Builder accept or transmit to the Department Value Engineering Proposals proposed by his subcontractors. The Design-Builder may choose any arrangement for the subcontractor value engineering payments, provided that these payments shall not reduce the Department's share of the savings resulting from the Value Engineering Proposal.

Should the Design-Builder desire a preliminary review of a possible Value Engineering Proposal, prior to expending considerable time and expense in full development, a copy of the preliminary proposal shall be submitted to the Resident Engineer and the Value Engineering Office. The submittal shall state, Preliminary Value Engineering Proposal Review Request and must contain sufficient drawings, cost estimates and written information that can be clearly understood and interpreted. Also include the identity of any Private Engineering Firms proposed by the Design-Builder to prepare designs or revisions to designs. The Department will review the preliminary submittal only to the extent necessary to determine if it has possible merit as a Value Engineering Proposal. This review does not obligate the Department to approve the final proposal should a preliminary review indicate the proposal has possible merit. The Department is under no obligation to consider any Value Engineering Proposal (Preliminary or Final) that is submitted.

A copy of the Final Value Engineering Proposal shall be submitted by the Design-Builder to the Resident Engineer and the Value Engineering Office. The proposal shall contain, as a minimum, the following:

(1) A statement that the request for the modification is being made as a Value Engineering Proposal.

(2) A description of the difference between the existing contract requirements and the proposed modifications, with the comparative advantages and disadvantages of each.

(3) If applicable, a complete drawing of the details covering the proposed modifications and supporting design computations shall be included in the final submittal. The preparation of new designs or drawings shall be accomplished and sealed by a Professional Engineer registered in the State of North Carolina. Further, the Department may require a review, and possibly the redesign, be accomplished by the project's original designer, or an approved equal. The Department may contract with private engineering firms, when needed, for reviews requested by the Department. The contractor shall contract with the original project designer, or an approved equal, when required by the Department, for any design work needed to completely and accurately prepare contract drawings. The Department may waive the requirements to have the preparation of contract drawings accomplished by a Professional Engineer

or the project's original design based on the extent, detail, and complexity of the design needed to implement the value engineering proposal.

(4) An itemized list of the contract requirements that would be modified and a recommendation of how to make each modification.

(5) A detailed estimate of the cost of performing the work under the proposed modification.

(6) A statement of the time by which approval of the Value Engineering Proposal must be issued by the Department to obtain the total estimate cost reduction during the remainder of the contract, noting any effect on the contract completion or delivery schedule.

To facilitate the preparation of revisions to contract drawings, the contractor may purchase reproducible copies of drawings for his use through the Department's Value Engineering Office. The preparation of new design drawings by or for the Design-Builder shall be coordinated with appropriate Department Branch through the Value Engineering Office. The contractor shall provide, at no charge to the Department, one set of reproducible drawings of the approved design needed to implement the value engineering proposal.

The Engineer, as defined in Article 101-34 of the Standard Specifications, will be the sole judge of the acceptability of a Value Engineering Proposal requested in accordance with these provisions and of the estimated net savings resulting from the approval of all or any part of the Proposal. The Design-Builder has the right to withdraw, in whole or in part, any Value Engineering Proposal not accepted by the Department within the period to be specified in the Proposal per Item (6) of the preceding paragraph.

If a Value Engineering Proposal is approved, the necessary changes will be effected by Supplemental Agreement. Included as a part of the Supplemental Agreement will be provisions for price adjustment giving the Design-Builder 50 percent of the net savings to the project resulting from the modifications.

The Department reserves the right to include in the Supplemental Agreement any conditions it deems appropriate for consideration, approval, and implementation of the proposal. Acceptance of the Supplemental Agreement by the Design-Builder shall constitute acceptance of such conditions.

The final net savings to be distributed will be the difference in cost between the existing contract cost for the involved unit bid items and actual final cost occurring as a result of the modification. Only those unit bid items directly affected by the Supplemental Agreement will be considered in making the final determination of net savings. In determining the estimate net savings, the Department reserves the right to disregard the contract prices if, in the judgement of the Department, such prices do not represent a fair measure of the value of the work to be performed or to be deleted. Subsequent change documents affecting the modified unit bid items but not related to the Value Engineering Proposal will be excluded from such determination. The Department's review and administrative costs for value engineering proposals will be borne by the Department. The Design-Builder's costs for

designs and/or revisions to designs and the preparation of design drawings will be borne by the Design-Builder. The costs to either party will not be considered in determining the net savings obtained by implementing the value engineering proposal. The Design-Builder's portion of the net savings shall constitute full compensation to him for effecting all changes pursuant to the agreement. The net savings will be prorated, 50 percent for the Design-Builder and 50 percent for the Department, for all accepted Value Engineering Proposals.

Upon execution of the Supplemental Agreement, the Department will thereafter have the right to use, duplicate or disclose in whole or in part any data necessary for utilization of the modification on other projects without obligation or compensation of any kind to the Design-Builder. Restrictions or conditions imposed by the Design-Builder for use of the proposal on other projects shall not be valid.

Except as may be otherwise precluded by this specification, the Design-Builder may submit a previously approved value engineering proposal on another project.

Unless and until a Supplemental Agreement is executed and issued by the Department, the Design-Builder shall remain obligated to perform the work in accordance with the terms of the existing contract.

Acceptance of the modification and its implementation will not modify the completion date of the contract unless specifically provided for in the Supplemental Agreement.

The Design-Builder shall not be entitled to additional compensation under Section 104 of the Standard Specifications for alterations in the plans or in the details of construction pursuant to the Value Engineering Proposal.

The Department will not be liable to the Design-Builder for failure to accept or act upon any Value Engineering Proposal submitted pursuant to this provision nor for any delays to the work attributable to any such proposal.

The Department reserves the right to negotiate desired changes with the Design-Builder under the provisions of the contract even though the changes are the result of a Value Engineering Proposal submitted on another contract. In this instance the savings will be prorated in accordance with the terms of the negotiated agreement.

SECTION 105
CONTROL OF WORK

105-1 AUTHORITY OF THE ENGINEER.

The Engineer will decide all questions which may arise as to the quality and acceptability of materials furnished and 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 Design-Builder. His decision shall be final and he shall have executive authority to enforce and make effective such decisions and orders as the Design-Builder fails to carry out promptly.

The Engineer shall have the authority to issue any written order to the Design-Builder which he considers necessary to the prosecution of the work, and shall have executive authority to enforce such written orders as the Design-Builder fails to carry out promptly. Failure on the part of the Design-Builder to comply with any written order issued by the Engineer may be justification for disqualifying the Design-Builder from further bidding in accordance with Article 102-16.

105-2 PLANS AND WORKING DRAWINGS.

See Scope of Work:

105-3 CONFORMITY WITH PLANS AND SPECIFICATIONS.

All work performed and all materials furnished shall be in reasonably close conformity with the lines, grades, cross sections, dimensions, and material requirements, including tolerances, shown on the plans, or indicated in the specifications.

In the event the Engineer finds the materials or the finished product in which the materials are used not within reasonably close conformity with the plans and specifications but that reasonably acceptable work has been produced, he will then make a determination if the work is to be accepted and remain in place. If the Engineer determines that the work is to be accepted, he will have the authority to make such adjustment in contract price as he deems warranted based upon his engineering judgment and the final estimate will be paid accordingly.

In the event the Engineer finds the materials or the finished product in which the materials are used or the work performed are not in reasonably close conformity with the plans and specifications and have resulted in an inferior or unsatisfactory product, the work or materials shall be removed and replaced or otherwise corrected by the contractor at no cost to the Department.

The Design-Builder shall bear all the costs of providing the burden of proof that the nonconforming work is reasonable and adequately addresses the design

purpose. The Design-Builder shall bear all risk for continuing with nonconforming work in question until it is accepted.

The Engineer may impose conditions for acceptance of the nonconforming work. The Design-Builder shall bear all costs for fulfilling the conditions.

The decisions whether the product satisfies the design purpose, whether the nonconforming work is reasonably acceptable, and the conditions for acceptance are within the sole discretion of the Engineer.

105-4 COORDINATION OF PLANS, SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS.

The Design-Build Package, the Plans, the Standard Specifications, and all supplementary documents are essential parts of the contract and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work.

In case of discrepancy or conflict, the order in which they govern shall be as follows:

(A) Design-Build Package

(B) Technical Proposal

(C) Accepted Construction Plans

(D) Standard Drawings

(E) Standard Specifications

Where dimensions on the plans are given or can be computed from other given dimensions they shall govern over scaled dimensions.

The Design-Builder shall take no advantage of any error or omission in the plans, estimated quantities, or specifications. In the event the Design-Builder discovers an error or omission, he shall immediately notify the Engineer.

105-5 COOPERATION BY DESIGN-BUILDER.

The Design-Builder shall cooperate with the Engineer, his inspectors, and other contractors in every way possible, and shall give the work the constant attention necessary to facilitate the progress and satisfactory performance thereof. The Design-Builder shall notify the Engineer in writing at least 7 days prior to beginning work on the project. He shall notify the Engineer at least 1 day in advance when work is to be suspended and at least 2 days in advance when work is to be resumed.

The Design-Builder shall keep available on the project site at all times the contract assembly including special provisions, standard specifications, and plans.

105-6 SUPERVISION BY DESIGN-BUILDER.

(A) On Site Personnel:

At all times that work is actually being performed the Design-Builder shall have present on the project one competent individual who has been authorized to act in a supervisory capacity over all work on the project including work subcontracted. The individual who has been so authorized shall be experienced in the type of work being performed and is to be fully capable of managing, directing, and coordinating the work; of reading and thoroughly understanding the contract; and of receiving and carrying out directions from the Engineer or his authorized representatives. He shall be an employee of the Design-Builder, unless otherwise approved by the Engineer.

(B) On Call Personnel:

At all times during the life of the project the Design-Builder shall provide one permanent employee who shall have the authority and capability for the overall responsibility of the project and who shall be personally available at the site of work within 24 hours notice. Such employee shall be fully authorized to conduct all business with the Subcontractors, to negotiate and execute all supplemental agreements, and to execute the orders or directions of the Engineer.

(C) Exceptions:

If the Design-Builder elects to have the employee described under (B) above constantly available in person on the project, then the presence of this employee will be considered as also meeting the requirements of (A) above. However, whenever such employee is absent from the project then an authorized individual meeting the requirements of (A) above shall be present on the project.

105-7 COOPERATION BETWEEN CONTRACTORS OR DESIGN-BUILDERS.

The Department reserves the right at any time to contract for and perform other or additional work on or near the work covered by the contract.

When separate or additional contracts are let within the limits of any one project, each Contractor or Design-Builder shall conduct his work so as not to interfere with or hinder the progress or completion of the work being performed by other Contractors or Design-Builders. Contractors or Design-Builders working within the limits of the same project shall cooperate with each other.

Each Contractor or Design-Builder shall conduct his operations in such a manner as to avoid damaging any work being performed by others or which has been completed by others.

The Department will under no circumstances be liable for any claim for additional compensation due to acts of one Contractor or Design-Builder holding up the work of another.

The Department will under no circumstances be liable for any damages experienced by one Contractor or Design-Builder as a result of the presence and operations of other Contractors or Design-Builders working within the limits of the same project.

105-8 COOPERATION WITH UTILITY OWNERS

Prior to the beginning of construction, the Department or Design-Builder will notify all utility owners known to have facilities affected by the construction of the project and will make arrangements for the necessary adjustments of all affected public or private utility facilities. The utility adjustments may be made either before or after the beginning of construction of the project. The adjustments will be made by the utility owner or his representative, or by the Design-Builder when such adjustments are part of the work covered by his contract.

The Design-Builder shall use special care in working around and near all existing utilities that are encountered during construction, protecting them where necessary so that they will give uninterrupted service.

The Design-Builder shall cooperate with the utility owner, and/or the owner's representative in the adjustment or placement of utility facilities when such adjustment or placement is made necessary by the construction of the project or has been authorized by the Department.

In the event that utility services are interrupted by the Design-Builder, the Design-Builder shall promptly notify the owners and shall cooperate with the owners and/or the owner's representative in the restoration of service in the shortest time possible.

Existing fire hydrants shall be kept accessible to fire departments at all times.

The Design-Builder shall make his own determination as to the nature and extent of the utility facilities, including proposed adjustments, new facilities, or temporary work to be performed by the utility owner or his representative; and as to whether or not any utility work is planned by the owner in conjunction with the project construction. The Design-Builder shall consider all of the permanent and temporary utility facilities in their present or relocated positions. It will be the Design-Builder's responsibility to anticipate any additional costs to him resulting from such utility work and to reflect these costs in his bid for the various items in the contract.

Where changes to utility facilities are to be made solely for the convenience of the Design-Builder, it shall be the Design-Builder's responsibility to arrange for such changes and the Design-Builder shall bear all costs of such changes.

105-9 CONSTRUCTION STAKES, LINES, AND GRADES.

The Design-Builder shall be responsible for any surveying, construction staking and layout required in the performance of the work. He will be responsible for the accuracy of lines, slopes, grades and other engineering work which he provides under this contract. Unless otherwise specified in the Request for Proposal, no

measurement or direct payment will be made for this work. The cost shall be considered as included in other contract items.

105-10 AUTHORITY AND DUTIES OF THE INSPECTOR.

Inspectors employed by the Department are authorized to inspect all work done and materials furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. The inspector is not authorized to alter or waive the provisions of the contract. The inspector is not authorized to issue instructions contrary to the plans and specifications, or to act as foreman for the Contractor; however, he has the authority to reject work or materials until any questions at issue can be referred to and decided by the Engineer. The inspector is not authorized to make any final acceptance of the work.

105-11 INSPECTION OF WORK.

All materials and each part or detail of the work shall be subject to inspection by the Engineer. The Design-Builder shall allow and provide a reasonable access to all parts of the work to the Engineer or his authorized representative. The Design-Builder shall also furnish such information and assistance as is required to make a complete and detailed inspection. Such access shall meet the approval of the Engineer.

The presence of the Engineer at the work site shall in no way lessen the Design-Builder's responsibility for conformity with the plans and specifications. Should the Engineer, prior to or during construction, fail to point out or reject materials or work that does not conform with plans and specifications, whether from lack of discovery or for any other reason, it shall in no way prevent later rejection or corrections to the unsatisfactory materials or work when discovered. The Design-Builder shall have no claim for losses suffered due to any necessary removals or repairs resulting from the unsatisfactory work.

If the Engineer requests it, the Design-Builder, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Design-Builder shall restore said portions of the work to the standard required by the specifications. The Design-Builder shall keep cost records of the work performed and if the uncovered work is found to be acceptable, the Department will pay the Design-Builder on a force account basis in accordance with Article 109-3 for the cost of uncovering, or removing, and the replacing of the covering or making good of the parts removed; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed, shall be at no cost to the Department.

When any other unit of government or political subdivision is to pay a portion of the cost of the work covered by the contract, its respective representatives shall have the right to inspect the work. When work is to be performed on the right of way of any railroad corporation or in proximity to other public utilities, the representatives of the railroad corporation and/or the public utilities shall have the right to inspect the work. Such inspection shall in no sense make any unit of government or political subdivision or any

railroad corporation or public utility a party to the contract, and shall in no way interfere with the rights of either party thereunder.

105-12 UNAUTHORIZED WORK.

No work shall be performed without established lines and grades except as otherwise permitted by the Engineer. Work performed contrary to the instructions of the Engineer or contrary to any approvals granted by the Engineer will be considered as unauthorized and will not be paid for under the provisions of the contract. Work performed beyond the lines shown on the plans or as given, except as herein specified, or any extra work performed without authority will be considered as unauthorized and will not be paid for under the provisions of the contract. Any of the above work so performed may be ordered removed, replaced, or repaired at no cost to the Department.

Upon failure on the part of the Design-Builder to comply forthwith with any order of the Engineer made under the provisions of this article, the Engineer will have the authority to cause such unauthorized work to be removed and/or adjusted to conform to the provisions of the contract and to deduct the cost of removal and/or adjustment from any monies due or to become due the Design-Builder.

105-13 LIMITATIONS OF OPERATIONS.

At any time when, in the opinion of the Engineer, the Design-Builder has obstructed, closed, or is conducting operations on, a greater portion of the work than is necessary for the prosecution of the work so as to constitute a hazard to the general public or impair the function of the facility being constructed where traffic must be maintained, the Engineer may require the Design-Builder to finish the portions on which work is in progress before starting work on additional portions of the work.

105-14 NIGHT WORK.

Whenever the Design-Builder's operations are being conducted at night, the Design-Builder shall provide such artificial lighting as may be necessary to provide for safe and proper construction and to provide for adequate inspection of the work as described in Section 1412.

105-15 RESTRICTION OF LOAD LIMITS.

The Design-Builder shall comply with all legal load restrictions in hauling equipment and materials on roads under the jurisdiction of the Department.

The Department has the right to place load limit restrictions on the load a Design-Builder may haul on any road or bridge in the vicinity of his contract. The Design-Builder, prior to bidding on a project, will be responsible for making his own investigations to determine beforehand the possibility of load limit restrictions being placed on any of the highways he plans to use for hauling purposes. The Design-Builder shall not be entitled to an extension of time or to compensation for any costs, inconvenience, delay, or any other adversity to the Design-Builder as the result of any reduction by the Department in load limit, or as the result of a refusal by the Department to raise load limits as hereinafter provided or under any

other conditions, and any such reduction in load limit or refusal to raise load limits shall not constitute a basis for a claim for additional compensation.

Wherever load limit restrictions below the statutory legal load limit have been posted on any roads and/or bridges on the project or within the vicinity of the project, the Department may remove the load limit restrictions from such roads and/or bridges upon written request from the Design-Builder; and the Design-Builder thereafter will be allowed to haul up to the statutory legal limits over such roads and/or bridges, provided the Design-Builder enters into an agreement with the Department providing for:

1. Maintenance by the Design-Builder of such roads in a condition satisfactory to the Engineer during the haul period.
2. Repair by the Design-Builder of all damages to such roads after haul is completed to place them in a condition as good as they were prior to removal of the load limits.
3. Furnishing bond by the Design-Builder in an amount determined by the Engineer for the roads. Furnishing a bond for the roads does not entitle the Design-Builder to exceed the posted load limits of any bridge.
4. Assumption by the Design-Builder of all costs of strengthening any bridges which may be necessary in order to safely haul loads up to statutory legal limits. The Department will, upon request by the Design-Builder, make a determination as to the method and extent of strengthening required for the bridges and will advise the Design-Builder as to the amount of work to be done or an estimate of the charges for the work if performed by Department forces. When Department forces perform the work, the Design-Builder shall reimburse the Department in the amount of the actual charges for said work. When Design-Builder's forces perform the work, it shall be done in accordance with plans approved by the engineer and under his inspection.
5. Indemnification of the Department against any and all claims from third persons arising out of or resulting from the hauling operation or the maintenance, or lack of maintenance, of haul roads. Haul roads shall be maintained not only for the Design-Builder's hauling operations, but for the use of the general public.

Equipment operated on proposed bridges shall comply with the following load restrictions.

Maximum axle load (lbs.) 36,000
Maximum axle load on tandem axles (lbs.) 30,000
Maximum gross load (lbs.) 90,000

The Design-Builder shall keep the bridge floor clean to reduce impact forces and place approved temporary guides on the bridge floor to position the wheel loads as nearly as possible over the bridge girders. Only one earth moving vehicle shall be on a bridge at any time. Upon completion of hauling over each bridge, the Design-Builder shall clean the bridge floor, curbs and rails.

Regulations pertaining to size and weight will not apply to equipment used on the project provided the vehicles involved are not operated on pavement, completed base course, or structures.

105-16 FAILURE TO MAINTAIN THE PROJECT OR PERFORM EROSION CONTROL WORK.

Failure on the part of the Design-Builder to comply with the provisions of Article 104-10 or to perform erosion control work as directed will result in the Engineer notifying the Design-Builder to comply with these provisions. In the event that the Design-Builder fails to begin such remedial action or fails to begin erosion control work within 24 hours after receipt of such notice with adequate forces and equipment, the Engineer may proceed to have the work performed with other forces. No payment will be made to the Design-Builder for work performed by others. Any costs incurred by the Department for work performed by others as provided above in excess of the costs that would have been incurred had the work been performed by the Design-Builder will be deducted from monies due the Design-Builder on his contract.

105-17 INSPECTION AND ACCEPTANCE.

Upon apparent completion of the entire project, the Engineer will make an inspection of the project for final acceptance. If all construction provided for and contemplated by the contract is found to be satisfactorily completed, the project will be accepted. The acceptance of projects in their entirely will not be altered except as listed below:

1. When any continuous project is equal to or in excess of 5 miles in length, the Department will accept the project in 2 increments with the first increment equaling at least 50 percent of the total length of the project.
2. When it is considered to be in the best interest of the Department, other increments or parts of projects may be considered for acceptance.
3. When the contract contains an intermediate completion date requiring the completion of a portion of the work in its entirety, such portion of the work may be accepted if requested in writing by the Design-Builder.
4. Bridge decks and rails that have been constructed or rehabilitated at such time as they are open to public traffic.
5. Permanent sign panels, including hardware and retroreflective sheeting, that are required prior to the final acceptance of the project by the Traffic Control Plans or by the Engineer when the roadway where the signs are located is open to public traffic.

Acceptance of any increment or part of a project shall not operate to waive the assessment of all or any portion of liquidated damages assessable under the terms of the contract.

When the inspection discloses any work, in whole or in part, as being unsatisfactory or incomplete, the Engineer will advise the Design-Builder of such unsatisfactory or incomplete work, and the Design-Builder shall immediately correct, repair, or complete such work. The project will not be accepted and the Design-Builder shall be responsible for the maintenance of the project and maintenance of traffic until all of the recommendations made at the time of the inspection have been satisfactorily completed.

The Engineer will notify the Design-Builder in writing that the project has been accepted as soon as practicable after the completion of the project.

105-18 SUBSTANTIAL COMPLETION

When the special provisions provide for a reduction in the rate of liquidated damages for the contract time or an intermediate contract time after the work is substantially complete, the work will be considered substantially complete when the following requirements are satisfied:

1. Through traffic has been placed along the project or along the work required by an intermediate contract time and the work is complete to the extent specified below, and all lanes and shoulders are open such that traffic can move unimpeded at the posted speed. Intersecting roads and service roads are complete to the extent that they provide the safe and convenient use of the facility by the public.

2. The final layers of pavement for all lanes and shoulders along the project or along the work required by an intermediate contract time are complete.

3. All signs are complete and accepted except for the signs on intersecting roadways.

4. All guardrails, drainage devices, ditches, excavation and embankment are complete.

5. Remaining work along the project consists of permanent pavement markings, permanent pavement markers or incidental construction that is away from the paved portion of the roadway.

Upon apparent substantial completion of the entire project or the work required by an intermediate contract time, the Engineer will make an inspection of the work. If the inspection discloses the entire project or the work required by an intermediate contract time is substantially complete, the Engineer will notify the Design-Builder in writing that the work is substantially complete. If the inspection discloses the entire project or the work required by an intermediate contract time is not substantially complete, the Engineer will notify the Design-Builder in writing of the work that is not substantially complete. The entire project or the work required by an intermediate contract time will not be considered substantially complete until all of the recommendations made at the time of the inspection have been satisfactorily completed.

SECTION 106
CONTROL OF MATERIAL

106-1 GENERAL REQUIREMENTS.

The materials used on the work shall meet all requirements of the contract and shall be subject to inspection, test, or rejection by the Engineer at any time. Materials used in the work shall be new or recycled as permitted by the Specifications.

It is the Departments intent to expand the use of recovered materials in its construction programs. The Design-Builder is encouraged to find innovative and alternative ways for beneficial use of recyclable materials that are currently a part of the solid waste stream and that contribute to problems of declining space in landfills.

The Design-Builder shall make his own determination of the various kinds and quantities of materials that are necessary for the acceptable performance and timely completion of the work. It will be the Design-Builder's responsibility to obtain materials which will meet the requirements of the contract. The Design-Builder shall be responsible for the acceptability of all materials used in the work and for the timely delivery of materials to the project so that adequate time will be available for the safe and proper performance of the work.

The Design-Builder shall provide access, means, and assistance in the verification of all testing equipment, scales, measures, and other devices operated by him in connection with the testing of the materials.

If the Design-Builder desires or is required to furnish materials from local deposits, other than those, if any, described in the contract he shall assume full responsibility for the sampling of the sources and the acceptability of the material in accordance with these specifications. He shall furnish without charge such preliminary samples as may be required; except that, if requested in writing, the Engineer may allow Department forces to take samples as requested by the Design-Builder. In the latter case, the Design-Builder shall reimburse the Department for the total expense of the sampling as determined by the Engineer. Tests will be made and reports rendered, but it is understood that such tests shall in no way be construed as a guarantee of acceptance of any material which may be delivered later for incorporation in the work. The Design-Builder shall assume full responsibility for the production of uniform and satisfactory materials from such local deposits, and shall indemnify and save harmless the Department from any and all claims for loss or damages resulting from the opening and operation thereof, or from the failure of the deposit after development to produce materials acceptable to the Engineer, in either quality or quantity.

106-2 SAMPLES, TESTS, AND CITED SPECIFICATIONS.

The Design-Builder shall perform Quality Control (QC) and acceptance testing at the frequencies described in the Minimum Sampling Guide. Quality Assurance (QA), verification and Independent Assurance (IA) will be performed by the Department. Laboratory testing performed by the Design-Builder shall be performed by an AASHTO

Accredited facility and participate in the AMRL/CCRL proficiency testing program for the tests being performed. Technicians performing sampling and testing shall be qualified in accordance with the Department's training and certification requirements for the specific materials, or in accordance with AMRL/CCRL accreditation requirements.

Prior to beginning construction, the Design-Builder shall provide a "Table of Values" as described in Section 101-102 Definitions of Terms.

All tests will be made in accordance with the most recent standard or interim methods of the AASHTO in force on the date of advertisement. Should no AASHTO method of test exist for a material, the most recent standard or tentative method of ASTM or other methods adopted by the Department will be used.

All reference made to a specification published by AASHTO, ASTM, or any other organization other than the Department, which does not indicate the date of publication, will be understood to mean the specification current on the date of Request for Proposals for the project. When a more current specification is published during the life of the project, and when it is mutually agreed by the Design-Builder and the Engineer and such agreement is documented by a supplemental agreement, the Department may accept materials meeting the requirements of the latest publication.

106-3 DESIGN-BUILDER FURNISHED CERTIFICATION.

The Design-Builder shall maintain material certifications obtained from the producer, supplier, or an approved independent testing laboratory for the following types of materials, unless otherwise directed by the Engineer

1. Materials required to meet criteria documented by tests which are normally performed during the production process.
2. Materials which are required to meet specifications other than those published by AASHTO, ASTM, or the Division of Highways.
3. Materials produced at locations which are not within routine travel distance for Department representatives.
4. Materials required to meet criteria documented by tests involving special equipment not readily available to Department representatives.
5. Any other special material when so directed by the Engineer.

Material certifications of one of the following types shall be furnished for pre-tested materials. The specific type of material certification for each material shall be in accordance with the Department's Minimum Sampling Guide.

Type 1 --- Certified Mill Test Report:

A certified mill test report shall be a certified report of tests conducted by the manufacturer on samples taken from the same heat or lot number as the material actually shipped to the project. The report shall identify the heat or lot number.

Type 2 --- Typical Certified Mill Test Report:

A typical certified mill test report shall be a certified report of tests conducted by the manufacturer on samples taken from a lot which is typical of the material actually shipped to the project, but which may or may not be from the lot shipped.

Type 3 --- Manufacturer's Certification:

A manufacturer's certification shall be a certified statement that the material actually shipped to the project was manufactured by production processes which are periodically and routinely inspected to assure conformance to specification requirements.

Type 4 --- Certified Test Reports:

A certified test report shall be a certified report of test conducted by an approved independent testing laboratory on samples taken from same heat or lot number as the material actually shipped to the project. The report shall identify the heat or lot number.

Type 5 --- Typical Certified Test Reports:

A certified test report shall be a certified report of tests conducted by an approved independent testing laboratory on samples taken from a lot which is typical of the material actually shipped to the project, but which may or may not be from the lot shipped.

Type 6 --- Supplier's Certification:

A supplier's certification is a signed statement by the supplier that the material described in the certification is of the specification grade required and that the supplier has on hand Type 1, Type 2, or Type 3 material certifications to cover the material which is included in the Type 6 supplier's certification.

Type 7 --- Design-Builder's Certification:

Design-Builder's certification is a signed statement by a contractor that the used material described in the certification meets the requirements of the current specifications to the best of contractor's knowledge and that the contractor had in his possession at the time of purchase a Type 1, 2 or 3 materials certification to cover the material which is included in the Type 7 contractor's certification.

Final Material Certificate:

The Design-Builder shall, upon completion of the project, certify that all certifications were received and the materials were found in compliance with the specification requirements and list all exceptions to the plans and specifications. This certification shall be in the following format:

"This is to certify that the results of the tests on Acceptance and QC/QA samples indicate that the materials incorporated in the construction work and the construction operations controlled by sampling and testing, were in

conformity with the approved plans and specifications. Such results compare favorably with the results of the independent assurance sampling and testing. Exceptions to the plans and specifications are noted below:"

Upon final acceptance of the Project, the Design-Builder shall submit all certifications to the Engineer.

106-4 DELIVERY AND HANDLING OF MATERIALS.

All materials shall be handled carefully and in such manner as to preserve their quality and fitness for the work. Materials damaged during delivery or handling shall not be used without approval of the Engineer.

106-5 STORAGE OF MATERIALS.

Materials shall be stored so as to insure the preservation of their quality and fitness for the work. Stored materials, which may have been approved before storage, shall be subject to inspection at any time, and shall meet the requirements of the specifications at the time they are put into use. Stored materials shall be so located as to facilitate their inspection. Subject to the approval of the Engineer, that portion of the right of way not required for public travel may be used for storage purposes and for the Design-Builder's plant and equipment, but any additional space required therefor shall be provided by the Design-Builder at no expense to the Department. All storage sites located within the right of way shall be restored to their original condition by the Design-Builder at no expense to the Department, except where the materials stored are or are to become the property of the Department.

106-6 INSPECTION AT SOURCE.

The Engineer may undertake the inspection of materials at the source of supply. This inspection will be performed by Department personnel or private organizations retained by the Department. Where approved by the Engineer, the results of tests performed by private laboratories or producer's or manufacturer's laboratories may be used in determining compliance of a material or product with the contract.

The Department assumes no obligation to inspect materials at the source of supply and such inspection will be undertaken only upon condition that:

1. The cooperation and assistance of the Design-Builder and the producer with whom he has contracted for materials is assured.
2. The representative of the Engineer will have full entry at all times to such parts of the plant as may concern the manufacture or production of the materials.
3. Laboratory facilities shall be provided when required by the Engineer.

Where the Department agrees to inspect or test materials during their production or at the source of supply, the Design-Builder shall bear the cost of testing performed on materials ordered by him but not incorporated into the project. For items normally pretested by the Department, the Design-Builder shall provide a minimum of 30 days notice prior to the

beginning of production of the items for this project along with final approved shop drawings.

The Department reserves the right to retest all materials which have been tested and accepted at the source of supply after the same have been delivered, and to reject all materials which, when retested, do not meet the requirements of the specifications.

106-7 SCALES AND PUBLIC WEIGHMASTER.

This article is deleted for this project.

106-8 DEPARTMENT FURNISHED MATERIAL.

The Design-Builder shall furnish all materials necessary to complete the work, except those materials specified in the Design-Build Package to be furnished by the Department. Payment at the contract price for the item which includes the use of Department furnished material will be full compensation for all costs of handling and placing such materials after they are delivered or made available to the Design-Builder.

The Design-Builder will be held responsible for all material furnished him, and deductions will be made from any money due him to make good any shortage and deficiencies from any cause whatsoever and for any damage which may occur after Department furnished material has been made available.

106-9 DEFECTIVE MATERIAL

All materials which are not in reasonably close conformity to the requirements of the specifications shall be considered as defective and such materials, whether in place or not, shall be rejected and are to be removed from the site of the work unless otherwise permitted by the Engineer in accordance with Article 105-3. No rejected material, the defects of which may have been substantially corrected, may be used until approval has been given by the Engineer.

106-10 DENSITY DETERMINATION BY NUCLEAR METHODS.

The Engineer may, at his option, utilize nuclear methods as described in Article 520-10 and 610-11C to determine the density of selected pavement materials. The use of nuclear methods will include the establishment of the required density through the use of control strips constructed from materials actually being used on the project, and the determination of the density being obtained in test sections located throughout the project.

SECTION 107
LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

107-1 LAWS TO BE OBSERVED.

The Design-Builder shall keep himself fully informed of all Federal and State laws, all local laws, ordinances, and regulations, and all orders and decrees of bodies or tribunals having any jurisdiction or authority which may in any manner affect those engaged or employed in the work, or which in any way affect the conduct of the work. He shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall indemnify and hold harmless the Board of Transportation and the Department of Transportation and their agents and employees from any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, by the Design-Builder or by his agents and employees.

107-2 ASSIGNMENT OF CLAIMS VOID.

In accordance with G.S. 143-3.3, the Department will not recognize any assignment of claims by any Design-Builder.

107-3 PERMITS AND LICENSES.

The Design-Builder shall procure all permits and licenses except as otherwise specified; pay all charges, fees, and taxes; and give all notices necessary and incident to the due and lawful prosecution of the work.

107-4 PATENTED DEVICES, MATERIALS, AND PROCESSES.

If the Design-Builder employs any design, device, material, or process covered by letters of patent or copyright, he shall provide for such use by suitable legal agreement with the patentee or owner. The Design-Builder and his surety shall indemnify and save harmless the Department from any and all claims for infringement by reason of the use of such patented design, device, material, process, trademark, or copyright, and shall indemnify and save harmless the Department from any costs, expenses, and damages which it may be obligated to pay at any time during the prosecution or after the completion of the work by reason of any infringement.

107-5 ENCROACHMENT ON RIGHT OF WAY.

Any individual, firm, or corporation wishing to encroach on highway right of way shall secure a written permit from the Department. The Design-Builder is not authorized to allow any individual, firm, or corporation to perform any work within the limits of the project unless such work has been authorized in writing by the Engineer.

When so directed by the Engineer, the Design-Builder shall make any repairs necessary due to such encroachments and such work will be paid for as extra work.

107-6 FEDERAL PARTICIPATION.

When the United States Government pays all or any portion of the cost of the work, the Federal laws authorizing such participation and the rules and regulations made pursuant to such laws shall be observed by the Design-Builder. The work will be subject to the inspection of the representative of such Federal agencies as are created for the administration of these laws. The Design-Builder shall have no right to make the Federal Government a party to any court action solely by reason of its participation in the cost of the work or by reason of its inspection of the work.

107-7 SANITARY PROVISIONS.

The Design-Builder shall provide and maintain in a neat, sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements of the State and local Board of Health, or of other bodies or tribunals having jurisdiction.

107-8 PUBLIC CONVENIENCE AND SAFETY.

The Design-Builder shall at all times so conduct his work as to insure the least possible obstruction to traffic. The safety and convenience of the general public and the residents along the highway, and the protection of persons and property, shall be provided for by the Design-Builder as specified in Section 150.

107-9 COORDINATION WITH RAILWAY.

All work to be performed by the Design-Builder on railway right of way shall be done in a manner satisfactory to the railway company, and shall be performed at such times and in such manner as not to unnecessarily interfere with the movement of traffic upon the track of the railway company. The Design-Builder shall use all care and precautions in order to avoid accidents, damage, or unnecessary delays or interference with the railway company's traffic or other property. The Design-Builder shall carry such railroad protective insurance and public liability and property damage insurance as may be stipulated in the special provisions.

When the Design-Builder is required by the plans or special provisions to transport materials or equipment across the tracks of any railway or to perform work on railway right of way, the Design-Buildder will obtain any necessary written authority from the railway company for the establishment of a railway crossing or for the performance of work on railway right of way. The Design-Builder will be required to bear the cost of any watchman service or flagging protection necessary due to such operations, as the railway company will be reimbursed directly by the Design-Builder for the cost of such work.

In case the Design-Builder elects or finds it necessary to transport materials or equipment across the tracks of any railway at any point where a crossing is not required by the plans or special provisions, or at any point other than an existing public crossing, he shall obtain specific written authority from the railway company for the establishment of a private railway crossing and shall bear all costs in connection with such crossing, including

installation, drainage, maintenance, any necessary insurance, watchman service, flagging protection, and removal of such private railway crossing.

107-10 WORK IN, OVER, OR ADJACENT TO NAVIGABLE WATERS.

All work in or over navigable waters shall be in accordance with conditions contained in the permit obtained by the Department from the authority granting the permit. These conditions will be included in the project special provisions. The work shall be performed in such manner so as not to interfere with navigation of the waterway unless approval therefor is obtained from the authority granting the permit.

The Design-Builder shall prepare drawings necessary to obtain any addendums which may be required for his operations which are not included in the Department's permit. He shall coordinate their submission with the Engineer.

107-11 USE OF EXPLOSIVES.

When the use of explosives is necessary for the prosecution of the work, the Design-Builder shall exercise the utmost care not to endanger life or property. The Design-Builder shall be responsible for any and all damage or injury to persons or property resulting from the use of explosives. Such responsibility shall include, but shall in no way be limited to all damages arising from all forms of trespass to adjacent property as a result of blasting by the Design-Builder. Provided that in cases of damage or interruption to underground water supply or veins to adjacent landowners, the Design-Builder shall not be held responsible where the Design-Builder has used reasonable care and has taken reasonable precautions to prevent such damage.

All explosives shall be stored in a secure manner, in compliance with all laws, and all such storage places shall be marked clearly "DANGEROUS EXPLOSIVES."

The Design-Builder shall notify each public utility company having facilities in close proximity to the site of the work of his intention to use explosives. This notice shall be given sufficiently in advance to enable the utility companies to take whatever steps they may consider necessary to protect their property from injury. The Design-Builder shall also give the Engineer, all occupants of adjacent property, and all other Contractors working in or near the project notice of his intention to use explosives. Motorists shall be notified in accordance with Article 1101-10.

The Design-Builder shall submit a blasting plan to the Engineer within 24 hours after each shot. The blasting plan shall contain the full details of the drilling and blasting patterns unless otherwise approved by the Engineer, and shall contain the following information: (1) station limits of shot, (2) plan of drill hole pattern, blast hole spacing, blast hole diameters and free face, (3) initiation sequence of blastholes including delay timer and delay system, (4) manufacturers data sheet for all explosives, primers, and initiators employed, (5) loading diagram showing type and amount of explosives, primers, initiators, and location and depth of stemming. The blasting plan submitted is for quality control and record keeping purposes. Review by the Engineer shall not relieve the Design-Builder of his responsibilities as provided in Article 107-12.

107-12 PROTECTION AND RESTORATION OF PROPERTY.

The Design-Builder shall be responsible for the protection from his activities of all public and private property on and adjacent to the work and shall use every reasonable precaution necessary to prevent damage or injury thereto. He shall use suitable precautions to prevent damage to pipes, conduits, and other underground structures, and to poles, wires, cables, and other overhead structures.

The Design-Builder shall protect carefully from disturbance or damage all land monuments and property markers until the Engineer has witnessed or otherwise referenced their location and shall not remove them until directed.

The Design-Builder shall be responsible for the removal, preservation, and resetting of all mail boxes disturbed by the construction operations. The mail boxes and their supports, when reset, shall be left in as good a condition as they were before removal. The Design-Builder will not be required to furnish new material except as required to repair damage resulting from construction operations.

The Design-Builder will be held responsible for all damage or injury to property of any character resulting from any act, omission, negligence, or misconduct in the prosecution of the work. When any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, negligence, or misconduct in the execution of the work, he shall either restore at his own expense such property to a condition similar or equal to that existing before such damage or injury was done, or shall make good such damage or injury in a manner acceptable to the owner of the damaged property and to the Department. In case of failure on the part of the Design-Builder to restore such property or make good such damage or injury the Department may at the Design-Builder's expense repair, rebuild, or otherwise restore such property in such manner as the Engineer may consider necessary.

107-13 CONTROL OF EROSION, SILTATION, AND POLLUTION.

(A) General:

The Design-Builder shall take whatever measures are necessary to minimize soil erosion and siltation, water pollution, and air pollution caused by his operations. The Design-Builder shall also comply with the applicable regulations of all legally constituted authorities relating to pollution prevention and control. The Design-Builder shall keep himself fully informed of all such regulations which in any way affect the conduct of the work, and shall at all times observe and comply with all such regulations. In the event of conflict between such regulations and the requirements of the specifications, the more restrictive requirements shall apply.

The Engineer will limit the area over which clearing and grubbing, excavation, borrow, and embankment operations are performed whenever the Design-Builder's operations do not make effective use of construction practices and temporary measures which will minimize erosion, or whenever construction operations have not been coordinated to effectively minimize erosion, or whenever permanent erosion control features are not being completed as soon as permitted by construction operations.

Following completion of any construction phase or operation, on any area greater than one acre, the Design-Builder shall provide ground cover sufficient to restrain erosion within 30 calendar days. When the construction is within a high quality water zone, as indicated in the plans, ground cover sufficient to restrain erosion shall be provided within 15 calendar days. The ground cover shall be either temporary or permanent and the type specified in the special provisions.

(B) Erosion and Siltation Control:

The Design-Builder shall exercise every reasonable precaution throughout the life of the project to prevent the eroding of soil and the silting of rivers, streams, lakes, reservoirs, other water impoundments, ground surfaces, or other property.

Prior to suspension of operations on the project or any portion thereof, the Design-Builder shall take all necessary measures to protect the construction area, including but not limited to borrow sources, soil type base course sources, and waste areas, from erosion during the period of suspension.

Excavated materials shall not be deposited, nor shall earth dikes or other temporary earth structures be constructed, in rivers, streams, or impoundments. As an exception to the above, confined earth materials will be permitted when approved in writing by the Engineer.

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(C) Coordination of Erosion Control Operations:

Temporary and permanent erosion control measures shall be provided as shown on the plans or as directed by the Engineer. All permanent erosion control work shall be incorporated into the project at the earliest practicable time. Temporary erosion control measures shall be coordinated with permanent erosion control measures and all other work on the project to assure economical, effective, and continuous erosion control throughout the construction and post construction period and to minimize siltation of rivers, streams, lakes, reservoirs, other water impoundments, ground surfaces, or other property.

Temporary erosion control measures shall include but not be limited to the use of temporary berms, dikes, dams, drainage ditches, silt basins, silt ditches, slope drains, structures, vegetation, mulches, mats, netting, gravel, or any other methods or devices that are necessary. Temporary erosion control measures may include work outside the right of way or construction limits where such work is necessary as a result of construction such as borrow operations, haul roads, plant sites, equipment storage sites, and disposal of waste or debris. The Design-Builder shall be liable for all damages to public or private property caused by silting or slides originating in waste areas furnished by the Design-Builder.

Materials for temporary erosion control measures shall have been approved by the Engineer before being used or shall be as directed by the Engineer.

Erosion control measures installed by the Design-Builder shall be acceptably maintained by the Design-Builder.

(D) Water and Air Pollution:

The Design-Builder shall exercise every reasonable precaution throughout the life of the project to prevent pollution of rivers, streams, and water impoundments. Pollutants such as chemicals, fuels, lubricants, bitumens, raw sewage, and other harmful waste shall not be discharged into or alongside of rivers, streams, or impoundments, or into natural or manmade channels leading thereto.

The Design-Builder shall comply with all State or local air pollution regulations throughout the life of the project.

(E) Dust Control:

The Design-Builder shall control dust throughout the life of the project within the project area and at all other areas affected by the construction of the project, including, but not specifically limited to, unpaved secondary roads, haul roads, access roads, disposal sites, borrow and material sources, and production sites. Dust control shall not be considered effective where the amount of dust creates a potential or actual unsafe condition, public nuisance, or condition endangering the value, utility, or appearance of any property.

The Design-Builder will not be directly compensated for any dust control measures necessary, as this work will be considered incidental to the work covered by the various contract items.

(F) Application of Specifications:

The provisions of this article shall apply to all construction operations. Further references and detailed requirements concerning erosion, siltation, and pollution prevention and control are given in other sections of the specifications as supplements to the general requirements of this article.

(G) Sanctions:

In the event that temporary erosion and pollution control measures become necessary due to the Design-Builder's negligence, carelessness, or failure to incorporate permanent erosion control measures into the project at the earliest practicable time, such measures shall be performed by the Design-Builder as directed by the Engineer at no cost to the Department. If the Design-Builder fails to perform such measures as directed, the Engineer may have the work performed in accordance with Article 105-16.

Failure of the Design-Builder to fulfill any of the requirements of this article may result in the Engineer ordering the stopping of construction operations in accordance with Article 108-7 until such failure has been corrected. Such suspension of operations will not justify an extension of contract time.

Failure on the part of the Design-Builder to perform the necessary measures to control erosion, siltation, and pollution will result in the Engineer notifying the Design-Builder to take such measures. In the event that the Design-Builder fails to perform such measures within 24 hours after receipt of such notice with adequate forces and equipment, the Engineer may suspend the work as provided above, or may proceed to have such measures performed with other forces and equipment, or both. No payment will be made to the

Design-Builder for the performance of this work and the cost of such work so performed will be deducted from monies due the Design-Builder on his contract.

107-14 PROTECTION OF PUBLIC LANDS.

In the execution of any work within or adjacent to any State or National forest, park, or other public lands, the Design-Builder shall comply with all regulations of all authorities having jurisdiction over such forest, park, or lands, governing the protection of public lands and the carrying out of work within public lands, and shall observe all sanitary laws and regulations with respect to the performance of work in public lands. He shall keep the areas in an orderly condition, dispose of all refuse, and obtain permits for the construction and maintenance of all construction camps, stores, warehouses, residences, latrines, cesspools, septic tanks, and other structures in accordance with the requirements of the appropriate authorities.

The Design-Builder shall take all reasonable precaution to prevent and suppress forest fires and shall require his employees and subcontractors, both independently and at the request of forest officials, to do all reasonable within their power to prevent and suppress and to assist in preventing and suppressing forest fires and to make every possible effort to notify a forest official at the earliest possible moment of the location and extent of any fire seen by them.

The Design-Builder shall obtain any construction permits which may be required for his operations, which are not a part of the project, in accordance with the requirements of the regulations of the appropriate authorities.

107-15 RESPONSIBILITY FOR DAMAGE CLAIMS.

The Design-Builder shall indemnify and save harmless the Board of Transportation and its members and the Department of Transportation and its officers, agents, and employees from all suits, actions, or claims of any character brought for any injury or damages received or sustained by any person, persons, or property by reason of any act of the Design-Builder, Subcontractor, its agents or employees, in the performance of the contract. The Design-Builder's liability to save harmless and indemnify shall include, but not by way of limitation, the following: (1) damages or claims for the failure of the Design-Builder to safeguard the work; (2) damages or claims by reason of the failure of the Design-Builder to erect adequate barricades and post adequate warnings to the public of such barricades; (3) any damage or claims caused through the Design-Builder's use of defective materials or by the performance of defective work; (4) any claims by reason of the Design-Builder's infringement of patent, trademark, or copyright; (5) any amounts paid by the Department by reason of the Design-Builder's failure to comply with or for violations of laws, ordinances, orders, or decrees; (6) any damages or claims caused by blasting operations of the Design-Builder with or without proof of negligence on the part of the Design-Builder; (7) damages or claims caused by the failure of the Design-Builder to protect private or public property pursuant to Article 107-12, including damages to public and private property caused by silting and slides from waste areas furnished by the Design-Builder, without proof of negligence; (8) damages caused by

the failure of the Design-Builder to control erosion in accordance with the plans and specifications.

In addition to any remedy authorized by law, the Department shall have a right to retain from moneys due the Design-Builder as the Department considers necessary until final disposition has been made of the following suits or claims: (1) For all claims against the Department involving claims or damages which are the Design-Builder's responsibility under Section 107 of the specifications. The Design-Builder and the Surety shall remain responsible until such suits or claims against the Department have been settled and until the Department has been indemnified and saved harmless. (2) In case of claims by the third parties against the Design-Builder involving tort liability for which the Department might be held liable for as a taking of property, or as a tort before the Industrial Commission. However, moneys due the Design-Builder will not be retained provided the Design-Builder produces satisfactory evidence to the Department that he is adequately protected from such tort liability by public liability and property damage insurance. In all other cases involving claims or suits by third parties against the Design-Builder, amounts due the Design-Builder will not be withheld provided that the consent of the Surety is furnished and the Surety guarantees payment of any amounts for which the Design-Builder may be determined to be legally liable for. (3) In cases of damage to property of the Department, such amounts necessary to pay for such damage.

In cases where claims are made or suits filed against employees, agents, or officers of the Department of Transportation or members of the Board of Transportation, the Department of Transportation may retain from moneys due the Design-Builder sufficient to indemnify such employee, agent, or officer of the Department of Transportation or member of the Board of Transportation for any amounts which they may be held liable for but for which the Design-Builder is responsible under the provisions of Section 107 of these specifications. In the event that there is not sufficient money retained or the final estimate is paid, the Department of Transportation may collect from the Design-Builder or its Surety amounts sufficient to indemnify such employee, agent, or officer of the Department of Transportation or member of the Board of Transportation for such damages incurred.

107-16 LIABILITY INSURANCE.

When required by the special provisions the Design-Builder shall carry insurance of the kinds and in the amounts specified therein in addition to any other forms of insurance or bonds required under the terms of the contract, or any other insurance carried by the Design-Builder.

107-17 OPENING SECTIONS OF PROJECT TO TRAFFIC.

If it is determined by the Engineer that the Design-Builder will not complete the work by the completion date, intermediate completion date, or intermediate completion time, the Engineer may notify the Design-Builder in writing that upon expiration of contract time or intermediate contract time the project or any portion thereof will be open to traffic. On such sections which are opened, the Design-Builder shall conduct the remainder of his operations so as to cause the least obstruction to traffic. The Design-Builder shall not be relieved of his

liability or responsibility, shall not receive any additional compensation due to the added cost of the work, nor shall he receive any extension of the completion date, intermediate completion date, or intermediate completion time, by reason of such openings.

107-18 DESIGN-BUILDER'S RESPONSIBILITY FOR WORK.

Until final acceptance of the work by the Engineer, as evidenced in writing, the Design-Builder shall have the charge and care thereof and shall take every precaution against injury or damage to any part thereof by the action of the elements, or from any other cause, whether arising from the execution or from the nonexecution of the work. The Design-Builder shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof, except as provided in other sections of the specifications. The Department will reimburse the Design-Builder for the repair of the work due to actions of the elements of such exceptional nature as to be legally classified as Acts of God.

In case of suspension of work from any cause whatever, the Design-Builder shall be responsible for all materials, and shall properly store them, if necessary, and shall provide suitable drainage of the roadway and erect necessary temporary structures at no cost to the Department.

107-19 FURNISHING RIGHT OF WAY.

The Department will be responsible for the securing of all necessary rights of way in advance of construction.

107-20 PERSONAL LIABILITY OF PUBLIC OFFICIALS.

Employees, agents, officers, and members of the Board of Transportation or the Department of Transportation shall not be held personally liable for any damages connected with the work, it being specifically understood in all such matters that they act solely as agents and representatives of the Board of Transportation or the Department of Transportation.

107-21 WAIVER OF LEGAL RIGHTS BY THE DEPARTMENT.

Upon completion of the work, the Department will expeditiously make an inspection and notify the Design-Builder of acceptance. Such final acceptance and processing of the final estimate, however, shall not preclude or stop the Department from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the Department be precluded or stopped from recovering from the Design-Builder or his Surety, or both, such overpayment as it may sustain, or by failure on the part of the Design-Builder to fulfill his obligations under the contract. A waiver on the part of the Department of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

The Design-Builder, without prejudice to the terms of the contract, shall be liable to the Department for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Department's rights under any warranty or guaranty.

107-22 SAFETY AND ACCIDENT PROTECTION.

The Design-Builder shall comply with all applicable Federal, State, and local laws, ordinances, and regulations governing safety, health, and sanitation, and shall provide all safeguards, safety devices, and protective equipment, and shall take any other needed actions, on his own responsibility that are reasonably necessary to protect the life and health of employees on the job and the safety of the public, and to protect property in connection with the performance of the work covered by the contract.

107-23 WAGES AND CONDITIONS OF EMPLOYMENT.

The Design-Builder's attention is directed to the provisions and requirements of any and all public statutes which regulate hours or conditions of employment on public work. Such provisions and requirements that are appropriate, in accordance with the intent of the particular law, act, or statute, will be applicable to all work performed by the Design-Builder with his own organization and with the assistance of workmen under his immediate superintendence, and to all work performed by subcontract. It will be the responsibility of the Design-Builder to ascertain the appropriate application of such provisions and requirements to the work.

In addition to the general requirements of the various regulations referred to above, certain additional regulations and restrictions may be imposed that are peculiar to the particular work under the contract. In such cases, these regulations and restrictions will be included in the special provisions for the particular project involved.

For projects that are financed wholly or in part with Federal funds, the minimum wage rates to be paid to all mechanics and laborers employed on the project will be determined by the U.S. Secretary of Labor. A schedule of such wage rates will be inserted in the Request for Propsals for such projects. The Design-Builder shall provide at the job site at no cost to the Department a weatherproof bulletin board covered with glass or rigid transparent plastic and shall display thereon at all times legible copies of such schedule of wage rates and of the wage rate information poster that will be furnished to him. The bulletin board shall be located in a conspicuous place easily accessible to all employees.

In the event that changes should occur in any of the regulations referred to in this article, or in any application thereof to the work under contract, no additional compensation will be allowed the Design-Builder as a result of such changes.

107-24 LIABILITY TO THIRD PARTIES.

It is not intended by any of the provisions of any part of these specifications to make the public or any member thereof a third party beneficiary hereunder, or to authorize anyone who is not a party to a contract entered into pursuant to these specifications to maintain a suit for personal injury or property damage otherwise than as authorized and provided by law.

107-25 RIGHT OF THE DESIGN-BUILDER TO FILE VERIFIED CLAIM.

If the Design-Builder fails to receive such settlement as he claims to be entitled to under the terms and provisions of the contract, the Design-Builder may submit a written and verified claim for such amounts he deems himself or his subcontractor(s) entitled to under the terms and provisions of the contract provided he has complied with the applicable provisions of the contract including, but not limited to, giving written notice of intent to file a claim, keeping and submission of cost records, and the initial submission of a written claim within the specified time period. The claim shall be submitted to the State Highway Administrator within 60 days from the time the Design-Builder receives the final estimate as defined by Article 101-38 and shall be submitted in accordance with G.S. 136-29.

107-26 HAZARDOUS, CONTAMINATED, AND/OR TOXIC MATERIAL.

When the Design-Builder's operations encounter or expose any abnormal condition which may indicate the presence of a hazardous, contaminated, and/or toxic material, such operations shall be discontinued in the vicinity of the abnormal condition and the Engineer shall be notified immediately. Upon notification by the Design-Builder, the Engineer will investigate the work and, if necessary, suspend the work in accordance with Article 108-7. The presence of barrels; old or abandoned underground storage tanks; and discolored earth, metal, wood, etc.; visible fumes; abnormal odors; excessively hot earth; smoke; or anything else which appears abnormal may be indicators of hazardous, contaminated, and/or toxic materials and shall be treated with extraordinary caution as they are evidence of abnormal conditions.

The Design-Builder's operations shall not resume until so directed by the Engineer.

Disposition of the hazardous, contaminated, and/or toxic material will be made in accordance with the requirements and regulations of the Department of Human Resources and the Department of Environment, Health & Natural Resources. Where the Design-Builder performs work necessary to dispose of hazardous, contaminated, and/or toxic material, payment will be made at the unit prices for pay items included in the contract which are applicable to such work or, where the contract does not include such pay items, payment will be made as provided in Article 104-7 for extra work. Where the contract does not include pay items for the work necessary to dispose of hazardous, contaminated, and/or toxic material, the Engineer may have the work performed by others.

SECTION 108
PROSECUTION AND PROGRESS

108-1 GENERAL.

It is the intent of these specifications that the Design-Builder shall commence work on the date of availability shown in the Request for Proposals or as soon thereafter as practicable, but not before the contract has been executed by both the Design-Builder and the Department. The Design-Builder shall not begin work prior to the date of availability without written approval of the Engineer. If such approval is given and the Design-Builder does begin work prior to the date of availability the Department will assume no responsibility for any delays caused prior to the date of availability by any reason whatsoever, and such delays, if any, will not constitute a valid reason for extending the completion date.

It is further the intent of these specifications that the Design-Builder shall pursue the work diligently with workmen in sufficient numbers, abilities, and supervision, and with equipment, materials, and methods of construction as may be required to complete the work described in the contract, or as may be amended, by the completion date.

108-2 PROGRESS SCHEDULE.

This section is replaced by the Project Special Provision entitled " PROGRESS SCHEDULE" contained elsewhere in this Design-Build Package.

108-3 PREDESIGN CONFERENCE / PRECONSTRUCTION CONFERENCE.

The selected Design-Builder shall meet with the Engineer for a predesign conference concerning the design phase of the work. This conference shall be held prior to the commencement of work, as it is determined according to Article 108-1, and will be scheduled by the Engineer. At the predesign conference, the Design-Builder shall furnish authorized signature forms and a list of any proposed subcontractors and major material suppliers associated with the design of the project.

A preconstruction conference shall be held at least 10 working days before construction activity begins. This second conference, concerning the construction phase, shall also be scheduled by the Engineer. The Design Builder shall give the Engineer a minimum of 45 days notice before he plans to begin construction activities. This will allow the Engineer time for any environmental agency representatives involved in the permitting process, as well as any other pertinent entities, to be scheduled to attend the preconstruction conference. If the Design-Builder is responsible for utilities in accordance with Article 105-8, he shall be responsible for coordinating with the Engineer in scheduling their attendance and for notifying them. The Design-Builder shall also be responsible for coordinating with the

Engineer in scheduling the attendance of subcontractors and others deemed appropriate, and for notifying them.

At the preconstruction conference, a list of any proposed subcontractors and major. material suppliers associated with the construction of the project will be submitted.

If the contract has a DBE requirement, the Design-Builder shall submit copies of completed and signed DBE subcontracts, purchase orders, or invoices to the Department.

The Design-Builder shall submit a traffic control plan in accordance with Article 1101-5. The Design-Builder shall designate an employee who is competent and experienced in traffic control to implement and monitor the traffic control plan. The qualifications of the designated employee must be satisfactory to the Engineer.

The Design-Builder shall submit a safety plan and designate an employee as Safety Supervisor.

Both plans shall be submitted at the preconstruction conference and must be satisfactory to the Engineer. Should the design plan include activities that would place personnel on the work site, traffic control and safety plans for those activities would be submitted at the predesign conference.

During the preconstruction conference, the Engineer will designate a Department employee or employees who will be responsible to see that the traffic control plans and any alterations thereto are implemented and monitored to the end that traffic is carried through the work in an effective manner. If approved by the Engineer, the Design-Builder may designate one employee to be responsible for both the traffic control and safety plans. The Design-Builder shall not designate its superintendent as the responsible person for either the traffic control plan or the safety plan, unless approved by the Engineer.

If the project requires that Design-Builder or State personnel work from falsework, within shoring, or in any other hazardous area the Design-Builder shall submit, as part of the Design-Builder's safety plan, specific measures it will use to ensure worker safety.

The Design-Builder shall also submit a program for erosion control and pollution prevention on all projects involving clearing and grubbing, earthwork, structural work, or other construction, when such work is likely to create erosion or pollution problems.

If the Design-Builder fails to provide the required submissions, the Engineer may order the preconstruction conference suspended until such time as they are furnished. Work shall not begin until the preconstruction conference has been concluded and the safety plan has been approved, unless authorized by the Engineer. The Design-Builder shall not be entitled to additional compensation or an extension of contract time resulting from any delays due to such a suspension.

The Design-Builder shall designate a qualified employee as Quality Control Manager. The Quality Control Manager shall be responsible for the implementing and monitoring of the quality control requirements of the project.

108-4 CONSTRUCTION CONFERENCES.

After work on the project has begun, construction conferences are to be held no less than once per month. The construction conferences are to be scheduled at times which are mutually agreeable to both the Design-Builder and the Department. It shall be the Design-Builder's responsibility to attend and record the proceedings of these conferences.

108-5 CHARACTER OF WORKMEN, METHODS, AND EQUIPMENT.

The Design-Builder shall at all times employ sufficient labor and equipment for prosecuting the several classes of work to full completion in the manner and time required by these specifications.

"The Design-Builder cannot recruit Department employees for employment. Additionally, Department employees who elect to become employed by a Design-Builder may not perform any function on a project which they have been involved in during employment with the Department without written consent of the State. Any person employed by the Design-Builder and assigned to a project who has previously been involved in the project as a Department employee shall be, at the written direction of the Engineer, removed from the project. An exception to these terms may be granted when recommended by the Secretary and approved by the Board of Transportation.

Failure of the Design-Builder to comply may be justification for disqualifying the Design-Builder from further bidding in accordance with the provisions of Article 102-16 and shall be grounds for termination of this contract.

No person shall be employed by the Design-Builder or by any Subcontractor who has been determined by the Engineer to have engaged in fraudulent activities in connection with any work for the Department of Transportation.

Any person employed by the Design-Builder or by any Subcontractor who, in the opinion of the Engineer, does not perform his work in a proper and skillful manner or is disrespectful, intemperate, or disorderly or who has been determined by the Engineer to have engaged in fraudulent activities in connection with any work for the Department of Transportation shall be, at the written request of the Engineer, removed forthwith by the Design-Builder or Subcontractor employing such person, and shall not be employed again in any portion of the work without the approval of the Engineer.

Should the Design-Builder fail to remove such person or persons as required above, the Engineer may suspend the work in accordance with the provisions of Article 108-7 until such orders are complied with.

All equipment which is proposed to be used on the work is to be of sufficient size and in such mechanical condition as to meet the requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the project shall be such that no injury to the roadway, adjacent property, or other highways will result from its use. The Engineer may order in writing the removal and replacement of any unsatisfactory equipment.

When the methods and equipment to be used by the Design-Builder in accomplishing the construction are not prescribed in the contract, the Design-Builder is free to use any methods or equipment that he demonstrates to the satisfaction of the Engineer will accomplish the contract work in conformity with the requirements of the contract.

When the contract specifies that the construction be performed by the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized by the Engineer. If the Design-Builder desires to use a method or type of equipment other than those specified in the contract, he may request authority from the Engineer to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed to be used and an explanation of the reasons for desiring to make the change. If approval is given it will be on the condition that the Design-Builder will be fully responsible for producing construction work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the Engineer determines that the work produced does not meet contract requirements, the Design-Builder shall discontinue the use of the substitute method or equipment and shall complete the remaining construction with the specified methods and equipment. The Design-Builder shall remove the unsatisfactory work and replace it with work of specified quality, or take such other corrective action as the Engineer may direct. No change will be made in basis of payment for the construction items involved nor in the completion date as a result of authorizing a change in methods or equipment under these provisions.

108-6 SUBLETTING OF CONTRACT.

The Design-Builder shall not sublet, sell, transfer, assign, or otherwise dispose of the contract or any portion thereof; or of his right, title, or interest therein; without written consent of the Engineer. In case such consent is given, the sublet work shall be performed by the Subcontractor unless otherwise approved in writing by the Engineer. Failure of the Design-Builder to comply with these provisions will be just cause for the work to be considered unauthorized in accordance with Article 105-12. A firm which has been disqualified due to its failure to maintain satisfactory progress under the provisions of Article 108-8 will not be approved as a subcontractor until the firm demonstrates the ability to perform the work in a satisfactory manner. When directed by the Engineer, the Design-Builder shall submit a certified copy of the actual subcontract agreement executed between the Design-Builder and Subcontractor prior to written consent being issued by the Engineer. In case such consent is given, the Design-Builder will be permitted to sublet a portion thereof, but shall perform with his own organization, work amounting to not less than 30 percent of the total original contract amount, except:

1. Any items sublet to Disadvantaged Business Enterprise (DBE), Minority Business (MB) or Women's Business (WB), up to the value of the contract DBE, MB or WB goal, will be deducted from the total original contract amount before computing the amount of work required to be performed by the Design-Builder with his own organization.

Extra work performed in accordance with Article 104-7 will not be considered in the computation of work required to be performed by the Design-Builder.

An assignment by operations of law or assignment for the benefit of creditors, or the bankruptcy of the Design-Builder, shall not vest any right in this contract in the Trustee in bankruptcy, the Design-Builder's creditors, or the agent of the creditors.

A Subcontractor shall not sublet, sell, transfer, assign, or otherwise dispose of his contract with a Design-Builder or any portion thereof; or of his right, title, or interest therein; without written consent of the Engineer. When directed by the Engineer, the Design-Builder shall submit a certified copy of the actual subcontract agreement executed between the Subcontractor and the Second Tier Subcontractor. In the event of an assignment by operations of law or the bankruptcy of the Subcontractor, the Design-Builder shall have the right, power, and authority, in its discretion, without violating the contract or releasing the Surety, to terminate the subcontract. An assignment by operations of law or assignment for the benefit of creditors or the bankruptcy of the Subcontractor shall not vest any right in this contract in the Trustee in bankruptcy, nor the Subcontractor's creditors or agents of the creditors.

Neither the Design-Builder, nor any Subcontractor, shall enter into any written or oral equipment lease or rental agreement, materials purchase agreement, and/or labor agreement which circumvents the provisions of this article.

If the Design-Builder or a Subcontractor enters into a lease or rental agreement for equipment based upon payment for a unit of work, such agreement will be considered subletting of the contract unless the lease or rental agreement is with a commercial equipment company, manufacturer, and/or commercial leasing agency and such firm has been approved by the Engineer. An equipment lease or rental agreement which is based upon unit prices per unit of time will not be considered subletting of the contract.

The approval of any subcontract will not release the Design-Builder of his liability under the contract and bonds, nor will the Subcontractor or the second tier Subcontractor have any claim against the Department of Transportation by reason of the approval of the subcontract. The State Highway Administrator will review and consider Subcontractor claims for additional time or compensation provided such claims are submitted by the contractor in accordance with Article 107-25 and General Statute 136-29.

Failure of the Design-Builder to comply with any of the provisions of this article may be justification for disqualifying the Design-Builder from further bidding in accordance with the provisions of Article 102-16.

108-7 TEMPORARY SUSPENSION OF THE WORK.

The Engineer will have the authority to suspend the work wholly or in part by written order for such periods as he may deem necessary for any of the following reasons:

1. Conditions considered unfavorable for the suitable prosecution of the work, or
2. The Design-Builder's failure to correct conditions unsafe for workmen or the general public, or
3. The Design-Builder has not carried out orders given to him by the Engineer, or

4. The Design-Builder's failure to perform any provisions of the contract.

No extension of the completion date will be allowed for the above suspensions except as may be provided for in Article 108-10.

108-8 FAILURE TO MAINTAIN SATISFACTORY PROGRESS.

The Engineer will check the Design-Builder's progress at the time each partial pay request is received. The Design-Builder's progress may be considered as unsatisfactory if, according to the CPM of Record, the projected finish date for all work exceeds the scheduled finish date by greater than 10%.

When the Design-Builder's progress is found to be unsatisfactory as described above, the Engineer may make written demand of the Design-Builder to state in writing the reason for the unsatisfactory progress and produce such supporting data as the Engineer may require or the Design-Builder may desire to submit. The Engineer will consider the justifications submitted by the Design-Builder and extensions of the completion date that have or may be allowed in accordance with Article 108-10(B).

When the Design-Builder cannot satisfactorily justify the unsatisfactory progress the Engineer may invoke one or more of the following sanctions:

1. Withhold anticipated liquidated damages from amounts currently due or which become due.
2. Remove the Design-Builder and all firms prequalified under the Design-Builder's Prequalification Number from the Department's list of qualified bidders.

When any of the above sanctions have been invoked, they shall remain in effect until rescinded by the Engineer.

108-9 DEFAULT OF CONTRACT.

(A) Declaration of Default:

The Department shall have the right to declare a default of the contract for breach by the Design-Builder of any material term or condition of the contract or specifications. Material breach by the Design-Builder shall include, but specifically shall not be limited to failure to begin work under the contract within the time specified; failure to provide workmen, equipment, or materials adequate to perform the work in conformity with the plans and specifications by the completion date; unsatisfactory performance of the work; refusal or failure to replace defective work; failure to maintain satisfactory work progress; failure to comply with equal employment opportunity contract requirements; insolvency or bankruptcy, or any act of insolvency or bankruptcy; failure to satisfy any final judgment within 10 days after entry thereof; and making an assignment for benefit of creditors.

(B) Sanctions:

In the event of a breach of the contract by the Design-Builder, the Department shall have the right, power, and authority, in its sole discretion, without violating the contract or

releasing the surety: to assume full control of the prosecution of the contract in the place and stead of the Design-Builder in directing Design-Builder's agents, employees, and Subcontractors in the performance of the work and in utilizing all materials, tools, machinery, equipment, and structures located on the project; to perform the work or any part thereof with Department personnel and equipment or to utilize any or all materials and equipment located on the project that are suitable and acceptable; to relet the work upon such terms and conditions as the Department shall deem appropriate; to employ any other methods that it may determine are required for completion of the contract in an acceptable manner; and to withhold any sums due the Design-Builder under the contract without penalty or interest until the work is completed and accepted by the Department.

(C) Notice:

Before invoking any of the sanctions provided for herein, the Department, acting through the Engineer, will give the Design-Builder at least 7 days written notice with a copy to the Surety, which will set forth the breach of contract involved and the sanctions to be imposed. The Department, in its discretion, may grant the Design-Builder time in excess of 7 days within which to comply with the contract terms and specifications, and the time allowed will be set forth in writing. If the Department determines during such period that the Design-Builder is not proceeding satisfactorily to compliance, it may impose the sanctions after 24 hours notice to the Design-Builder. If the Department determines that the Design-Builder is not in compliance at the end of the time allowed, it may immediately impose any of the sanctions set forth herein and will advise the Design-Builder, in writing, with a copy to the Surety of the sanctions imposed.

(D) Payment:

After declaration of default has been made final, the Design-Builder will be entitled to receive payment for work satisfactorily completed or portions of work satisfactorily completed, less any sums that may be due the Department from the Design-Builder but in no event shall payment exceed the contract unit or lump sum price for such work. The Department, at its election, may retain the sum due the Design-Builder, or any portion thereof, without interest or penalty, until the contract work is completed; or it may make payment to the Design-Builder upon declaration of default for work satisfactorily completed to the date that notice of default is received by the Design-Builder. The Design-Builder may be required by the Engineer, however, to carry to a stage of completion satisfactory to the Engineer any work in progress, the value of which otherwise would be lost by immediate cessation of work. Payment for such work will be made upon the basis hereinafter set out.

In the event that the Design-Builder's employees, equipment, or materials are used in prosecution of the work, or any part thereof, after default is declared, payment to the Design-Builder may be by contract unit or lump sum prices for the work performed, or, if the Engineer determines that such prices do not represent the value of the work performed, payment for the type of work or services performed will be made on a force account basis, as set forth in Article 109-3, less any sums that may be due the Department; but in no event shall payment exceed the contract unit or lump sum price for such work or services.

Determination of the method of payment shall be in the sole discretion of the Engineer, and he will advise the Design-Builder, in writing, of his determination with reference to the specific type of work or service to be performed.

If all costs and expenses incurred by the Department arising out of the breach and imposition of sanctions, together with the total cost to the Department of securing the performance of the work set forth in the contract, exceed the sum that would have been payable under the contract, the Design-Builder and the Surety shall be liable to the Department for such excess and shall pay such amount to the Department.

(E) Authority of Engineer:

The Engineer will exercise the powers and discretion vested in him by the specifications and other contract conditions in carrying out the terms of this article. He will have full power and authority to carry out any orders, directives, or resolutions issued by the Department in connection with a declaration of default. In the event that the Department fails to specify the sanctions to be imposed, the notice to be given, or the method of completing the work, the Engineer, may, in his discretion, impose such sanctions, give such notice, and select such methods of completing the work, as are authorized by this article; and such actions shall have the same effect and validity as if taken pursuant to an express order, directive, or resolution of the Department.

(F) Obligation of Design-Builder and Surety:

No term or terms of this article and no action taken pursuant hereto by the Department of Transportation, its agents, or employees, will be construed to release or discharge the Design-Builder or the Surety upon the obligation set forth in the contract bonds, and the Design-Builder and the Surety shall remain bound thereon unto the Department until the work set forth in the contract has been completed and accepted by the Department and all obligations of the Design-Builder and the Surety arising under the contract and contract bond have been discharged.

(G) Provision Not Exclusive:

The provisions shall be in addition to, and not in place of, any other provisions relating to default, breach of contract, and sanctions to be imposed in connection therewith appearing in the contract.

108-10 CONTRACT TIME; INTERMEDIATE CONTRACT TIME.

(A) General:

The contract time will be as defined in Article 101-24. No extensions to the completion date will be authorized except as allowed by this article. No modifications in the date of availability will be made for any reason whatsoever.

Intermediate contract time, as defined in Articles 101-47 and 101-48, will be that as allowed in the special provisions to complete a part, portion, or phase of the total work covered in the contract. Intermediate completion dates and intermediate completion times set forth in the special provisions may be extended on the same basis as completion dates and as described in this article.

When the liquidated damages stipulated in the project special provisions are to be on an hourly basis, extensions as described in this article will be considered on an hourly basis.

(B) Completion Date, Intermediate Completion Date, and Intermediate Completion Time Extensions:

No extension of the completion date, intermediate completion date, or intermediate completion time will be allowed for any reason except as provided for below:

1. If supplemental agreements covering the performance of extra work include provisions for an extension of the completion date, intermediate completion date, or intermediate completion time, and the final dollar value of the extra work exceeds the estimated dollar value, the number of days or the number of hours by which the completion date, intermediate completion date, or intermediate completion time was extended will be increased by the percentage which the final dollar value exceeds the estimated value.
2. If the Design-Builder's current controlling operation(s) are delayed by circumstances originating from work required under the contract and beyond his control and without his fault or negligence, he may, at any time prior to the final payment make a written request to the Engineer for an extension of the completion date, intermediate completion date, or intermediate completion time. This request shall include: (a) the circumstances resulting in the alleged delay and documentation of said circumstances as may be required by the Engineer, (b) the controlling operation(s) alleged to have been delayed, (c) the calendar dates or calendar dates and times on which the controlling operation(s) were delayed and (d) the number of calendar days or hours by which he is requesting the completion date, intermediate completion date, or intermediate completion time to be extended.

   If the Engineer determines that the controlling operation(s) were delayed because of circumstances beyond the control of and without the fault or negligence of the Design-Builder, and that the Design-Builder has pursued the work in accordance with Article 108-1, he will extend the completion date, intermediate completion date, or intermediate completion time unless otherwise precluded by other provisions of the contract. No extension of the completion date, intermediate completion date, or intermediate completion time will be allowed for delays caused by restrictions, limitations or provisions contained in the contract.
3. If changes in the work from that originally contemplated in the Design-Build Package are ordered by the Engineer and these changes result in additional work and/or extra work, the Engineer will allow an extension in the completion date, intermediate

completion date, or intermediate completion time as he may deem warranted by such changes. It is, however, the Design-Builder's responsibility to show just cause for an extension in the completion date, intermediate completion date, or intermediate completion time due to the aforesaid conditions.

Submit all requests for extensions of Contract time in writing. Only delays to activities which affect the Contract completion date will be considered for an extension of contract time. No time extensions will be granted until a delay occurs which impacts the project's critical path, consumes all available float, and extends the work beyond the contract completion date. Include in the request a written narrative describing the events which would require an extension of contract time.

Any extension to the Contract completion date will be based on the number of calendar days the Contract completion date is impacted as determined by the Engineer's analysis.

The Design-Builder's plea that insufficient contract time (days), intermediate contract time (days), or intermediate contract time (hours) was specified in the contract will not be considered as a valid reason for an extension in the completion date, intermediate completion date, or intermediate completion time.

108-11 LIQUIDATED DAMAGES.

It is mutually recognized that time is an essential element of the contract, and that delay in completing the work will result in damages due to public inconvenience, obstruction to traffic, interference with business, and the increasing of engineering and administrative costs to the Department. It is therefore agreed that in view of the difficulty of making a precise determination of such damages, a sum of money in the amount stipulated in the special provisions will be charged against the Design-Builder for each calendar day, each hour, or portion thereof that the work, or any portion of the work as described in the special provisions, remains uncompleted after the expiration of the completion date, intermediate completion date, or intermediate completion time shown in the special provisions, not as a penalty but as liquidated damages.

Should the Design-Builder or, in case of default, the Surety fail to complete the work or any portion of the work by any of the applicable completion dates, intermediate completion dates, or intermediate completion times shown in the special provisions, a deduction of the amount stipulated in the special provisions as liquidated damages will be made for each and every calendar day, for each and every hour, or portion thereof that the work or any portion of the work remains uncompleted after the expiration of any completion date, intermediate completion date, or intermediate completion time applicable to the uncompleted work. This amount will be deducted from any money due the Design-Builder or his Surety under the contract, and the Design-Builder and his Surety will be liable for any liquidated damages in excess of the amount due.

In the event that the special provisions establish one or more intermediate completion dates and/or one or more intermediate completion times in addition to the completion date, each of the liquidated damages stipulated will be considered to be cumulative to any other liquidated damages stipulated.

In case of default of the contract and the completion of the work by the Department, the Design-Builder and his Surety will be liable for the liquidated damages under the contract, but no liquidated damages will be chargeable for any delay in the final completion of the work by the Department due to any action, negligence, omission, or delay of the Department.

In any suit for the collection of or involving the assessment of liquidated damages, the reasonableness of the amount stipulated in the contract will be presumed. The liquidated damages referred to herein are intended to be and are cumulative, and will be in addition to every other remedy now or hereafter enforceable at law, in equity, by statute, or under the contract.

Permitting the Design-Builder to continue and finish the work or any part thereof after the expiration of the completion date, intermediate completion date, or intermediate completion time shall in no way operate as a waiver on the part of the Department of any of its rights under this contract.

108-12 EXTENSION OF CONTRACT TIME AND APPORTIONMENT OF LIQUIDATED DAMAGES.

It is the intent of Articles 108-10 and 108-11 of these specifications that when a contract is not completed by the completion date, intermediate completion date, or intermediate completion time the Design-Builder shall be entitled to an extension of the completion date, intermediate completion date, or intermediate completion time and apportionment and remittance of liquidated damages to the extent that the failure to complete was due to the conditions set forth in Article 108-10. The Design-Builder, however, shall be entitled to an extension of the completion date, intermediate completion date, or intermediate completion time, or an apportionment and remittance of liquidated damages only to the extent and in the proportion that such delays were caused by the conditions set forth in Article 108-10, and it is understood that any extension granted shall not operate to waive any liquidated damages or any claim which the Department has or may have against the Design-Builder by reason of failure of the Design-Builder to complete the said contract by the completion date, intermediate completion date, or intermediate completion time specified therein or as revised by authorized extensions.

108-13 TERMINATION OF CONTRACT.

The Board may terminate the contract in accordance with the following provisions:

1. Consideration will be given to termination of the contract if any of the following circumstances exist:
   a. If it is impossible for the Design-Builder to obtain critical materials for completion of the contract within a practical time limit, or

b. If it is impossible for the Design-Builder to complete the work in accordance with the contract by reason of unanticipated conditions at the site, including slides and unstable subsoil, without a major change in the design of the project and the Design-Builder will be unduly delayed in completing the project by reason of such unanticipated conditions and changes in design, or

c. If the Design-Builder is prevented from proceeding with the contract as a direct result of an Executive Order of the President with respect to the prosecution of war or in the interest of national defense, or

d. If the Design-Builder is prevented from proceeding with the work required by the contract as a direct result of a restraining order, or other court order, or by reason of a permit requirement, and the Design-Builder will be unduly delayed in completing the project by reason of such order or requirement, or

e. If the Design-Builder is prevented from proceeding with the work due to the unavailability of the site.

2. The Design-Builder shall determine that the circumstances in item 1 exist and are beyond his control, and shall notify the Department in writing of his determination and include adequate documentation of these circumstances along with such notification.

3. The Contract will be terminated under this article if:

a. Request by Design-Builder:

i. The Board concurs in the determination by the Design-Builder of the circumstances or makes an independent determination that such circumstances hereinabove indicated exist, and

ii. The Board determines that such circumstances are beyond the control of the Design-Builder, and the Design-Builder was not at fault in creating the circumstances, and

iii. The Board determines that a termination of the contract is in the best public interest, or

b. Authority of the Board:

The Board determines that a termination of the contract is in the best public interest.

4. The Design-Builder will be notified in writing by the State Highway Administrator of the action of the Board.

5. After a contract is terminated in accordance with this termination provision, the following provisions shall be applicable:

a. When the contract is terminated before completion of all items of work in the contract, payment will be made for the actual number of acceptably completed items of work or acceptably completed portions thereof at the contract unit or lump sum prices. When the contract is terminated before completion of all items

of work in the contract and items of work are partially completed or not begun, payment will be made in accordance with Article 104-6.

b. Upon request from the Design-Builder, materials meeting the requirements of the contract which were to have been incorporated into the work or were to remain the property of the Department but are not used in the work will be paid for in accordance with Article 109-6.

c. No claim for loss of anticipated profits will be considered and no payment will be made for loss of anticipated profits.

d. Termination of a contract shall not relieve the Design-Builder of his responsibilities for any completed portion of the work nor shall it relieve his Surety, of its obligation for and concerning any just claims arising out of the work performed.

108-14 TERMINATION OF CONTRACTOR'S RESPONSIBILITY.

After the project has been completed and accepted, as provided for in Article 105-17, the Design-Builder's responsibility will cease except as provided in Article 107-21 and as set forth in his contract bonds.

SECTION 109
MEASUREMENT AND PAYMENT

109-1 MEASUREMENT OF QUANTITIES.

All work completed under the contract will be measured by the Engineer according to United States standard measures unless otherwise stated in the contract.

The method of measurement and computations used in the determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to accepted engineering practice.

The terms "gage" and "thickness", when used in connection with the measurement of plates, sheets, and steel wire, shall be applied as follows:

Uncoated Steel Sheets and Light Plates ..... United States Standard Gage
Galvanized Sheets ..... AASHTO M218 or M167
Aluminum Sheets AASHTO M196 or M197

Steel Wire .....AASHTO M32

The term ton will mean short ton consisting of 2,000 pounds avoirdupois.

Cement will be measured by the barrel unless otherwise indicated elsewhere in the Specifications. The term barrel will mean 376 pounds of cement.

Trucks used to haul material being paid for by weight will be either weighed empty prior to each loading or weighed empty on a daily basis. When trucks are weighed empty on a daily basis, each truck shall be weighed prior to hauling its first load of the day and shall bear a legible identification mark.

Where aggregates that are to be paid for by weight have been stockpiled after being produced, measurement for purposes of payment will be made after the aggregates have been loaded on trucks for direct delivery to the project.

When a complete structure or structural unit, as may be indicated by the unit "lump sum" or "each", is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

When standard manufactured items are specified, and these items are identified by gage, unit weight, section dimensions, and/or other dimensions, such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

109-2 SCOPE OF PAYMENT.

The Design-Builder shall receive and accept compensation provided for in the contract as full payment for furnishing all materials and performing all work under the contract in a complete and acceptable manner and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the prosecution thereof, subject to the

provisions of Article 107-21. Payment to the Design-Builder will be made only for the work completed and accepted in accordance with the terms of the contract.

If the "Basis of Payment" or "Compensation" clause in the specifications relating to any unit price or lump sum price in the bid schedule requires that the said unit price or lump sum price cover and be considered compensation for certain work or material essential to the item, this same work or material will not also be measured or paid for under any other pay item which may appear elsewhere in the specifications.

109-3 FORCE ACCOUNT WORK.

(A)Design:

The actual costs for labor incurred times the multiplier of 2.8 will be paid.

(B) Construction:

All force account work shall be performed as directed by the Engineer including the numbers and types of equipment, the numbers and classifications of labor and foremen, and material requirements.

All work to be paid for on a force account basis will be paid for in the following manner:

1. Labor. For all authorized labor and foremen in direct charge of the specific operations, the Design-Builder will receive the rate of base wages (or scale) actually being paid by the Design-Builder for each hour that the labor and foremen are actually engaged in the work. Prior to beginning the work the Design-Builder shall submit in writing for the Engineer's approval a list of all wage rates applicable to the work. Approval will not be granted where these wage rates are not actually representative of wages being paid elsewhere on the project for comparable classes of labor performing similar work. Payment for overtime will be allowed when approved by the Engineer prior to performing the work. An amount equal to 35 percent of the total base wages paid for labor and foremen will be added to the total base wages paid to the Design-Builder.

   The percentage additive will be full compensation for overhead, profit, benefits, and contingencies.

2. Bond, Insurance, and Tax. For property damage, liability, and worker's compensation insurance premiums, unemployment insurance contributions, bond premiums, and social security taxes on the force account work, the Design-Builder will receive the actual cost to which cost 6 percent will be added. The Design-Builder shall furnish satisfactory evidence to the Engineer of the rate or rates paid for such bond, insurance, and tax.

   An annualized composite percentage of the direct cost for labor and foremen may be used to determine the cost for bond, insurance, and tax to which cost 6 percent will be added. The Design-Builder shall furnish satisfactory evidence to the Engineer of the annualized composite percentage for the bond, insurance, and tax.

   The percentage additive will be full compensation for overhead, profit, and contingencies.

3. Materials. For materials authorized and accepted by the Engineer and used, the Design-Builder will receive the actual cost of such materials, including transportation charges paid by him (exclusive of equipment rentals as hereinafter set forth), to which cost 15 percent will be added. The Design-Builder shall furnish records to the Engineer to verify the quantities of materials used in the work, prices of the materials, and costs of transportation for the materials.

   If materials used in the force account work are not specifically purchased for such work but are taken from the Design-Builder's stock, the Design-Builder shall furnish an affidavit certifying that such materials were taken from his stock, the quantity was actually used in the work, and the price and transportation cost claimed represent the actual cost to the Design-Builder.

   The percentage additive will be full compensation for overhead, profit, and contingencies.

4. Equipment. For all equipment authorized by the Engineer to be used on the force account work the Design-Builder will receive rental payment.

   Hourly rental rates paid for equipment in use which is Design-Builder owned or rented from another Contractor will not exceed 1/176th of the monthly rate listed in the "Rental Rate Blue Book for Construction Equipment", as published by Dataquest, Incorporated, which is current at the time the force account work is performed.

   In determining the hourly rate, the regional adjustment factor and the rate adjustment factor for equipment age, as set forth in the current Blue Book, will both be applied to the basic rate. An additive payment equal to 70 percent of the Blue Book estimated operating cost per hour will also be paid for the time equipment is in use. This additive payment will be full compensation for fuel, lubricants, repairs, servicing (greasing, fueling, and oiling), small tools, and other incidentals.

   If rental rates for the equipment actually being used in the work are not listed in the Blue Book, the Design-Builder will receive the prevailing rental rates being paid for such equipment in the area where the project is located. An additive payment equal to 15 percent of the prevailing rental rate will also be paid for the time equipment is in use. This additive payment will be full compensation for fuel, lubricants, repairs, servicing (greasing, fueling, and oiling), small tools, and other incidentals.

   Hourly rental rates for equipment held in ready as directed by the Engineer will be 50 percent of the rate paid for equipment in use. An additive payment will not be made for equipment held in ready. When equipment is in use less than 40 hours for any given week and is held in ready as directed by the Engineer, payment for held in ready time will be allowed for up to 40 hours, less time in use. When payment is made for equipment held in ready as directed by the Engineer, the payment for held in ready time will be allowed for up to 8 hours in a day less time in use.

   Hourly rental rates for idle equipment held in ready in accordance with Article 104-4 will be 50 percent of the rate paid for equipment in use. Hourly rental rates for idle equipment held in ready in accordance with Article 104-4 which is rented from a commercial rental agency will be paid for in accordance with the invoice rate for the

equipment. An additive payment will not be made for idle equipment. When equipment is in use less than 40 hours for any given week and is held in ready as idle equipment in accordance with Article 104-4, payment for idle equipment time will be allowed for up to 40 hours, less time in use. When payment is made for idle equipment held in ready in accordance with Article 104-4, the payment for idle equipment time held in ready will be allowed for up to 8 hours in a day less time in use.

In the event the Design-Builder does not possess or have readily available such equipment necessary for the performance of the work and such equipment is rented from a commercial rental agency, the Design-Builder will receive payment based on the approved invoice rate for the equipment. An additive payment equal to 15 percent of the calculated hourly invoice rate will also be paid for the time equipment is in use. This additive payment will be full compensation for fuel, lubricants, repairs, servicing (greasing, fueling and oiling), small tools, and other incidentals. The commercial rental agency cannot be the Design-Builder or an affiliate of the Design-Builder.

No compensation will be made for the use of equipment not authorized by the Engineer.

The Design-Builder will be reimbursed for the actual transportation costs for equipment which the Design-Builder is directed to furnish. Such payment will be limited to transportation costs from the nearest source of available equipment. If equipment is not returned to the point of origin, but is transported to another location, transportation costs will not exceed the cost of return to the point of origin. Rental for such equipment will not be paid when the equipment is being transported. The Design-Builder shall furnish records to the Engineer to verify the actual transportation costs for equipment.

The Design-Builder shall provide to the Engineer for approval a listing of all equipment and attachments to be utilized in the prosecution of the work. The list shall include the manufacturer's name, type, model, serial number, and year of manufacture. The list shall also include the invoice rate for equipment rented from a commercial rental agency. It shall be the Design-Builder's responsibility to verify the age of the equipment in a manner acceptable to the Engineer. Where such verification is not available, the rate adjustment factor used will be for the oldest equipment listed in the Blue Book.

The above prices and payments will be full compensation for fuel, lubricants, cutting edges, all repairs, and all other operating and maintenance costs other than operator's wages.

5. Miscellaneous. No additional allowance will be made for general superintendence, the use of manually powered tools, or other costs for which no specific allowance is herein provided.

6. Subcontracting. For administrative costs of the Design-Builder in connection with approved subcontract work, the Design-Builder will receive an amount in accordance with the rate schedule shown below of the total cost of such subcontracted work. The total cost will include labor; bond, insurance, and tax; materials; and equipment costs incurred by the subcontractor and computed in accordance with Items 1, 2, 3, and 4 above.

Total Cost of Subcontract Work	Rate Schedule
$0 - $10,000	10%
Above $10,000	$1,000 + 5% Above $10,000

7. General. The Engineer will maintain the payment records of work performed on a force account basis. The Design-Builder shall compare records of work with the Engineer at the end of each day on which such work is in progress.

Any contention the Design-Builder may have for an extension in the completion date, intermediate completion date, or intermediate completion time, due to performance of force account work will be considered as provided in Article 108-10.

109-4 PARTIAL PAYMENTS.

(A) General:

Partial payments will be based upon progress estimates prepared by the Engineer at least once each month on the date established by the Engineer. Partial payments may be made twice each month if in the judgment of the Engineer the amount of work performed is sufficient to warrant such payment. No partial payment will be made when the total value of work performed since the last partial payment amounts to less than $10,000.00. Partial payments will be approximate only and will be subject to correction in the final estimate and payment.

Partial payments for the lump sum design-build price shall be based on a Schedule of Payments submitted by the successful Design-Build proposer and approved by the Engineer. The Schedule of Payments shall be submitted not less than 30 calendar days after the date of award. Each item on the Schedule of Payments shall be assigned a cost and quantity and shall be identified as an activity on the project schedule. A revised Schedule of Payments shall be submitted with each update of the CPM of Record as described in Article 108-2 or when requested by the Engineer.

The Engineer will withhold an amount sufficient to cover anticipated liquidated damages as determined by the Engineer.

109-5 PAYMENT FOR MATERIAL TO BE USED IN THE WORK.

No partial payments will be made for materials to be incorporated in the work unless elsewhere provided.

109-6 PAYMENT FOR LEFTOVER MATERIALS.

Payment will be made to the Design-Builder for materials meeting the requirements of the contract which were to have been permanently incorporated into the work or were to remain the property of the Department but due to revisions or elimination of items of work by the Engineer, due to changes in the scope, or due to termination of the contract are not used in the work. The Design-Builder upon request will be reimbursed for the verified actual cost of such material delivered to a site designated by the Engineer, including any handling charges less any discount, but in no event shall payment exceed that which would have been made at the contract unit or lump sum price for the completed work.

The Design-Builder shall furnish invoices and cost records to the Engineer to verify the actual cost of materials, handling charges, discounts which were taken, and transportation charges. No percentage additive will be added to the verified cost of such material.

No payment will be made for loss of anticipated profits and no other payment will be made for leftover materials except as listed above.

109-7 COMPENSATION PAID AT CONTRACT PRICES.

Except as provided for by this article, payment for work performed will be made at the contract unit price or the contract lump sum price, as the case may be. Payment shall be made at the adjusted contract unit or lump sum price, as applicable, when a price adjustment or pay factor is provided for by the Specifications or as determined by the Engineer in accordance with Article 105-3. The Design-Builder shall not be paid for any work performed for which there is not a contract price, nor shall the Design-Builder receive additional compensation over and above the contract price for work performed or for extra work performed, except for work performed pursuant to an executed supplemental agreement or work performed in accordance with the applicable provisions of Section 104.

109-8 FUEL PRICE ADJUSTMENTS.

No fuel price adjustments will be made.

109-9 FINAL PAYMENT.

The Engineer will notify the Design-Builder giving the apparent liquidated damages, if any assessed. After the Design-Builder submits the documents listed in Article 109-10, the entire sum found to be due after deducting all previous payments and all amounts to be retained or deducted under the provisions of the contract will be paid the Design-Builder.

109-10 DOCUMENTS REQUIRED FOR THE PROCESSING OF THE FINAL ESTIMATE.

Prior to the processing of the final estimate, the following documents shall have been submitted to and accepted by the Engineer.

1. Statement of Consent of Surety on the contract bonds for payment of money due the Design-Builder.

2. Affidavit of the Design-Builder that all obligations and debts arising out of the construction have been satisfied, or affidavit which shall include a list of obligations not satisfied.
3. Written notice that the Design-Builder has no request for any extension in the completion date or any adjustment in compensation from that shown in the final estimate or in lieu thereof written notice presenting all request for adjustment of the final estimate setting forth full justification for such requests.
4. Any other documents that are required by the contract such as completed Form PR-47 and all reports, statements, and other information necessary for compliance with applicable labor regulations of the Federal Highway Administration.
5. As-constructed plans.
6. Final Material Certificate

Submission of false information in the documents required by this section shall be a basis for disqualifying the Design-Builder from further bidding in accordance with Article 102-16.

109-11 INTEREST ON FINAL PAYMENT.

Should final payment on a project not be made within 120 calendar days after the project final acceptance date, interest, at the average rate earned by the State Treasurer on the investment within the State's Short Term Fixed Income Investment Fund during the month preceding the date interest becomes payable, will be paid the Design-Builder on the final payment for the period beginning on the 121st day after final acceptance and extending to the date the final estimate is paid, provided that the documents required by Article 109-10 have been submitted within 30 days of the mailing of the notification outlined in Article 109-9. In the event the Design-Builder fails to submit the required documents within the stipulated 30 day period, and the final estimate is not paid until 120 calendar days following final acceptance of the project, the number of days on which interest accrues will be reduced by the number of days in excess of 30 that the Design-Builder requires to submit the document(s).

SECTION 150
MAINTENANCE OF TRAFFIC

150-1 GENERAL.

The Design-Builder will be required to maintain traffic within the limits of the project, including all existing roadways which cross or intersect the project, unless otherwise provided in the contract or approved by the Engineer. Traffic shall be maintained from the time the Design-Builder begins work on the project site until acceptance of the project, including any periods during which the Design-Builder's operations are suspended, unless otherwise provided for in the contract or approved by the Engineer. The Design-Builder shall conduct his work in a safe manner which will create a minimum amount of inconvenience to traffic.

The Design-Builder shall be responsible for maintaining in a safe, passable, and convenient condition, such part or parts of existing roads as are being used by him to maintain traffic within the limits of the project from the time the Design-Builder begins work on the project until acceptance of the project. As an exception to the above, the Department will be responsible for the removal of ice and snow from all portions of the project open to traffic.

Whenever it is necessary to utilize traffic control devices as shown in the contract, as determined by the Engineer, or in order to conform to the provisions of this section, the work of furnishing, erecting, operating, maintaining, covering, relocating, and removing traffic control devices shall be in accordance with the provisions of Division 11 & 12.

PROJECT SPECIAL PROVISIONS
PERMITS

The Design-Builder's attention is directed to the following permits which have been applied for by the Department of Transportation to the authority granting the permits. Copies of these permits will be provided when received by the Department.

PERMIT	AUTHORITY GRANTING THE PERMIT
Dredge and Fill and/or Work in Navigable Waters	U. S. Army Corps of Engineers
Water Quality	Division of Environmental Management, DEHNR State of North Carolina

The Design-Builder shall comply with all applicable permit conditions during construction of this project. Those conditions marked by * are the responsibility of the department and the Design-Builder has no responsibility in accomplishing those conditions.

Agents of the permitting authority will periodically inspect the project for adherence to the permits.

The Design-Builder's attention is also directed to Articles 107-10 and 107-14 of the Standard Specifications and the following:

Should the Design-Builder propose to utilize construction methods (such as temporary structures or fill in waters and/or wetlands for haul roads, work platforms, cofferdams, etc.) not specifically identified in the permit (individual, general, or nationwide) authorizing the project it shall be the Design-Builder's responsibility to coordinate with the appropriate permit agency to determine what, if any, additional permit action is required. The Design-Builder shall also be responsible for initiating the request for the authorization of such construction method by the permitting agency. The request shall be submitted through the Engineer. The Design-Builder shall not utilize the construction method until it is approved by the permitting agency. The request normally takes approximately 60 days to process; however, no extensions of time or additional compensation will be granted for delays resulting from the Design-Builder's request for approval of construction methods not specifically identified in the permit.

Where construction moratoriums are contained in a permit condition which restricts the Design-Builder's activities to certain times of the year, those moratoriums will apply only to the portions of the work taking place in the waters or wetlands provided that activities outside those areas is done in such a manner as to not affect the waters or wetlands.

8.1402212 January 1, 2002

STANDARD SPECIAL PROVISION

AVAILABILITY OF FUNDS - TERMINATION OF CONTRACTS

In accordance with G.S. 143-28.1 (6), Subsection (5) of G.S. 143-28.1 is hereby incorporated verbatim in this contract. G.S. 143-28.1(5) is as follows:

"(5). Amounts Obligated - Payments subject to the Availability of Funds - Termination of Contracts. Highway maintenance and construction appropriations may be obligated in the amount of allotments made to the Department of Transportation by the Office of State Budget and Management for the estimated payments for maintenance and construction contract work to be performed in the appropriation fiscal year. The allotments shall be multi-year allotments and shall be based on estimated revenues and shall be subject to the maximum contract authority contained in subdivision (2) above. Payment for highway maintenance and construction work performed pursuant to contract in any fiscal year other than the current fiscal year will be subject to appropriations by the General Assembly. Highway maintenance and construction contracts shall contain a schedule of estimated completion progress and any acceleration of this progress shall be subject to the approval of the Department of Transportation provided funds are available. The State reserves the right to terminate or suspend any highway maintenance or construction contract and any highway maintenance or construction contract shall be so terminated or suspended if funds will not be available for payment of the work to be performed during that fiscal year pursuant to the contract. In the event of termination of any contract, the contractor shall be given a written notice of termination at least 60 days before completion of 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".

Payment will be made on any contract terminated pursuant to the special provision in accordance with Article 108-13, Item 5, of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 1, 2002.

8.1402212

STANDARD SPECIAL PROVISIONS
(ENGLISH AND METRIC)
NCDOT GENERAL SEED SPECIFICATION FOR SEED QUALITY

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

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

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

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

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

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

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

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

Further specifications for each seed group are give below:

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

Sericea Lespedeza
Oats (seeds)

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

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

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

Common or Sweet Sundangrass

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

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

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

Crownvetch
Pensacola Bahiagrass
Japanese Millet
Switchgrass
Reed Canary Grass

8.14022[illegible]2

March 19, 2002

STANDARD SPECIAL PROVISIONS
ERRATA

Correct the 2002 Standard Specifications as follows:

Page 2-21, Subarticle 235-4(B)

In the third (3rd) sub-bullet under the eighth (8th) bullet in this subarticle, delete the word "subgrade" and insert the words "finished grade".

Page 3-4, Article 300-10

Change all references to 300-8 to 300-9.

Page 5-9, Subarticle 520-3(A)

Delete the words "at your option".

Page 5-10, Subarticle 520-6(A)

In the first sentence, add a period after "(B)" and delete the words "and (C).".

Delete the last sentence of the subarticle.

Page 8-55, Subarticle 866-5(G)

In the third (3rd) pay item, insert the words "with Posts" after the word "Fence".

Page 10-1, Subarticle 1000-3(A)

In the second (2nd) paragraph, change 550 psi to 600 psi (4.1 MPa).

Page 10-2, Subarticle 1000-3(A)

In the last sentence of the second (2nd) paragraph on this page, change 550 psi to 600 psi (4.1 MPa).

Page 10-5, Table 1000-1

Under the column "Consistency Max. Slump" change the sub-heading 'Non-Vibrated' to 'Vibrated' and change the sub-heading 'Vibrated' to 'Non-Vibrated'. Under the column "Min. Cement

Content" change the sub-heading 'Non-Vibrated' to 'Vibrated" and change the sub-heading 'Vibrated' to 'Non-Vibrated'.

Page 15-3, Article 1505-3

In the last paragraph of this article, change Article 300-6 to Article 300-7.

Page 15-10, Article 1510-5

In the fourth (4^{th}) paragraph, insert a comma after the word "water".

Page 15-18, Article 1530-2

In the third (3^{rd}) paragraph on the page, change "Section 812" to "Section 340".

STANDARD SPECIAL PROVISION

AWARD OF 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 ground of race, color, or national origin".

8.1402212

MINORITY AND FEMALE EMPLOYMENT REQUIREMENTS

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

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

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

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

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

EMPLOYMENT GOALS FOR MINORITY
AND FEMALE PARTICIPATION

Economic Areas

Area 023 29.7%

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

Area 024 31.7%

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

Area 025 23.5%

Columbus County
Duplin County
Onslow County
Pender County

Area 026 33.5%

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

Area 027 24.7%

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

Area 028 15.5%

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

Area 029 15.7%

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

Area 0480 8.5%

Buncombe County
Madison County

Area 030 6.3%

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

SMSA Areas

Area 5720 26.6%

Currituck County

Area 9200 20.7%

Brunswick County
New Hanover County

Area 2560 24.2%

Cumberland County

Area 6640 22.8%

Durham County
Orange County
Wake County

Area 1300 16.2%

Alamance County

Area 3120 16.4%

Davidson County
Forsyth County
Guiford County
Randolph County
Stokes County
Yadkin County

Area 1520 18.3%

Gaston County
Mecklenburg County
Union County

Goals For Female

Participation in Each Trade

(Statewide) 6.9%

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

Page

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 superintendence 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 authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's

EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring 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 the U.S. DOL) and Helpers:**

a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. **Apprentices and Trainees (Programs of the U.S. DOT):**

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. **Withholding:**

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. **Overtime Requirements:**

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. **Violation:**

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. **Withholding for Unpaid Wages and Liquidated Damages:**

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

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

1. **Compliance with Copeland Regulations (29 CFR 3):**

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. **Payrolls and Payroll Records:**

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

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

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked 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

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than $1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

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 that $10,000 or imprisoned not more than 5 years or both."

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

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

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

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

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

1. **Instructions for Certification - Primary Covered Transactions:**

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

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

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

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement 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.

8.1402212

Training Special Provisions

This project special provision will not be applicable to those Design-Builders who have elected to participate in the Department's *Alternative On-The-Job Training Program.* In the event the Design-Builder is participating in the Department's *Alternative On-The-Job Training Program*, the Civil Rights and Business Development Section of the Contractual Services Unit will certify that participation to the appropriate Highway Division and Resident Engineers.

This Training Special Provision supersedes subparagraph 7b of the Special Provision entitled "*Specific Equal Employment Opportunity Responsibilities,"* (Attachment 1), and is in implementation of 23 USC 140(a). As a part of the Design-Builder's equal opportunity affirmative action program, training shall be provided as follows:

The Design-Builder shall provide on-the-job training aimed at developing full journey workers in the type of trade or classification involved. 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 number of trainees to be trained under this contract will be as specified in the project special provisions included else where in the proposal form.

In the event that a Design-Builder subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subDesign-Builder, provided, however, the Design-Builder shall maintain the primary responsibility for meeting the training requirements imposed by this special provision and the subDesign-Builder has an approved on-the-job training program. The Design-Builder shall also insure that this training special provision is made applicable to such subcontract. 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 skilled work classifications on the basis of the Design-Builder's needs and the availability of journey workers in the various classifications within a reasonable area of recruitment. Prior to commencing construction, the Design-Builder shall submit to the Department for approval the number of trainees to be trained in each selected classification and the training program to be used. Furthermore, the Design-Builder shall specify the starting time for training in each of the classifications on the form provided by the Department. That form shall be submitted by the Design-Builder to the Department on or before the date of the pre-construction conference. The Design-Builder 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 10 percent of the specific program requirement.

Training and upgrading of minorities and women toward journey worker_status is a primary objective of this Training Special Provision. Accordingly, the Design-Builder shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private resources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment. The Design-Builder will be responsible for demonstrating the steps he has taken in the pursuance thereof, prior to a determination as to whether the Design-Builder is in compliance with this Training Special Provision. 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.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journey worker status or in which he has been employed as a journey worker. The Design-Builder should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Design-Builder's records should document the finding in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Design-Builder and approved by the Department. The Department shall approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the Design-Builder and to qualify the average trainee for journey worker status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the US Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the US Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training, shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-Aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the Department prior to commencing work on the classification covered by the program. It is the intention of these provisions that training be provided in the construction crafts rather than clerk-typist or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is provided and approved by the Department and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

It is normally expected that a trainee will begin his training on the project as soon as feasible after the start of work utilizing the skill involved and remain on the project as long as training opportunities exist in the work classification or until he has completed his training program. It is not required that all trainees be on board for the entire length of the contract. A Design-Builder will have fulfilled his responsibilities under this training special

provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the Design-Builder for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journey worker's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Design-Builder shall furnish the trainee a copy of the program he will be following providing the training. The Design-Builder shall provide each trainee with a with a certificate showing the type and length of training satisfactorily completed.

The Design-Builder will provide for maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

GENERAL DECISION NC000011 03/02/01 NC11
 General Decision Number NC010011

 Superseded General Decision No. NC000011

 State: North Carolina

 Construction Type:
 HIGHWAY

 County(ies):
 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 Publication Date
 0 03/02/2001

COUNTY(ies):
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

 SUNC3002A 02/12/1990

	Rates	Fringes
CARPENTER	7.63	
CONCRETE FINISHER	7.52	
ELECTRICIAN	10.26	
IRONWORKERS (Reinforcing)	9.76	
LABORER		
Comman	5.33	
Asphalt Lay Down Man	5.60	
Asphalt Raker	6.14	
Form Setter (Road)	8.57	
Mason (Brick, Block, Stone)	7.44	
Pipe Layer	6.23	
Power Tool Operator	8.28	

POWER EQUIPMENT OPERATORS:

Asphalt Distributor	6.78
Asphalt Paver	7.47
Bulldozer	7.33
Bulldozer (utility)	6.72
Concrete Curb Machine	7.09
Concrete Finishing Machine	7.85
Concrete Paver	6.90
Crane, Backhoe, Shovel, & Draglne (over 1 yd.)	8.16
Crane, Backhoe, Shovel, & Dragline (1 yd. & under)	6.95
Drill Operator	7.34
Grade Checker	5.45
Gradeall	8.38
Greaseman	6.49
Loader	7.09
Mechanic	8.47
Motor Grader (Fine Grade)	8.04
Motor Grader (Rough Grade)	7.68
Oiler	5.88
Roller (Finisher)	6.70
Roller (Rough)	5.65
Scraper	6.63
Screed Asphalt	7.09
Stone Spreader	6.02
Stripping Machine Operator	6.00
Subgrade Machine	7.13
Sweeper	5.80
Tractor (Utility)	5.47

TRUCK DRIVERS:

Trucks - Single Rear Axle	5.42
Trucks - Multi Rear Axle	6.08
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)(v)).

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

ITEMIZED PROPOSAL FOR CONTRACT NO. C200376

County : WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
			ROADWAY ITEMS			
0001	0000900000-N	SP	GENERIC MISCELLANEOUS ITEM DESIGN, CONSTRUCTION & INSPEC-TION	Lump Sum	L.S.	

0750/Nov30/Q 1.0/D900000/E1

Total Amount Of Bid For Entire Project :

8.1402212

12/19/89

*AWARD LIMITS ON MULTIPLE PROJECTS

It is the desire of the Bidder 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 Bidder 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 low Bidder(s) on indicated projects, the total value of which is more that the above stipulated award limits, the Board of Transportation will award me (us) projects from among those indicated which have a total value not exceeding the award limit and which will result in the lowest total bids to the Department of Transportation.

_____

**Signature of Authorized Person

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

LISTING OF DBE SUBCONTRACTORS

Sheet _____ of _____

FIRM NAME AND ADDRESS		ITEM DESCRIPTION	(*) AGREED UPON UNIT PRICE	DOLLAR VOLUME OF SUBLET ITEM

PROJECT NO._____ **COUNTY**_____ **FIRM**_____

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

LISTING OF DBE SUBCONTRACTORS

Sheet _____ of _____

FIRM NAME AND ADDRESS		ITEM DESCRIPTION	(*) AGREED UPON UNIT PRICE	DOLLAR VOLUME OF SUBLET ITEM

PROJECT NO._____ **COUNTY**_____ **FIRM**_____

LISTING OF DBE SUBCONTRACTORS

Sheet ____ of ____

FIRM NAME AND ADDRESS		ITEM DESCRIPTION	(*) AGREED UPON UNIT PRICE	DOLLAR VOLUME OF SUBLET ITEM

PROJECT NO._____ **COUNTY**_____ **FIRM**_____

LISTING OF DBE SUBCONTRACTORS

Sheet ____ of ____

FIRM NAME AND ADDRESS		ITEM DESCRIPTION	(*) AGREED UPON UNIT PRICE	DOLLAR VOLUME OF SUBLET ITEM

PROJECT NO._____ **COUNTY**_____ **FIRM**_____

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

**Dollar Volume of DBE Subcontractor..... $ _____

Percentage of Total Contract Bid Price

_____%

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

12/21/99

EXECUTION OF PRICE PROPOSAL, NONCOLLUSION AFFIDAVIT, AND DEBARMENT CERTIFICATION

The person executing the Price Proposal, on behalf of the Design-Builder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the Design-Builder 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 Price Proposal, and that the Design-Builder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this Price Proposal in the proper manner also constitutes the Design-Builder's certification of "Status" under penalty of perjury under the laws of the United States in accordance with the Debarment Certification included elsewhere in the proposal form, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF DESIGN-BUILDER
(If a corporation uses this sheet)

_____
(Print full name of corporation)

_____
(Address as Prequalified)

Attest_____ By_____
(Secretary) (Assistant Secretary) (President) (Vice President)
Delete inappropriate title (Asst. Vice President)
Delete inappropriate title

_____ _____
Print Signer's Name Print Signer's Name

CORPORATE SEAL

NOTE - AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the

_____ day of _____, 20___.

_____
(Signature of Notary Public) NOTARY SEAL:

of _____County.

State of _____.

My Commission Expires: _____

Signature Sheet 1 (Price Proposal) - Corporation

EXECUTION OF PRICE PROPOSAL, NONCOLLUSION AFFIDAVIT, AND DEBARMENT CERTIFICATION

The person executing the Price Proposal, on behalf of the Design-Builder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the Design-Builder 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 Price Proposal, and that the Design-Builder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this Price Proposal in the proper manner also constitutes the Design-Builder's certification of "Status" under penalty of perjury under the laws of the United States in accordance with the Debarment Certification included elsewhere in the proposal form, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF DESIGN-BUILDER
(If a joint venture, use this sheet)

Instructions to Bidders: On Line (1), print the name of each contractor. On Line (2), print the name of one of the joint venturers and execute below in the appropriate manner and furnish in the following lines all information required by Article 102-8 of the Specifications. On Line (3), print the name of the other joint venturer and execute below in the appropriate manner and furnish all information required by said article of the Specifications. For correct form of execution and information required for execution of this sheet by an individual, see Signature Sheets 3 and 4; for a corporation, see Signature Sheet 1; and for a partnership, see Signature Sheet 5.

(1)_____ and _____
A Joint Venture

(2)_____(Seal)
(Name of Design-Builder)

_____
(Address as Prequalified)

_____ By_____
Witness or Attest

_____ _____
Print Signer's Name Print Signer's Name
If a corporation, affix corporate seal:

and

(3)_____(Seal)
(Name of Design-Builder)

_____
(Address as Prequalified)

_____ By_____
Witness or Attest

_____ _____
Print Signer's Name Print Signer's Name
If a corporation, affix corporate seal:

NOTE - AFFIDAVIT MUST BE NOTARIZED For Line (2)

Subscribed and sworn to before me

this the _____day of _____, 20____.

_____
(Signature of Notary Public & Seal)

of _____County.

State of _____.

My Commission Expires:_____.

NOTE - AFFIDAVIT MUST BE NOTARIZED For Line (3)

Subscribed and sworn to before me

this the ____ day of _____, 20___.

_____
(Signature of Notary Public & Seal)

of _____County.

State of _____.

My Commission Expires_____.

EXECUTION OF PRICE PROPOSAL, NONCOLLUSION AFFIDAVIT, AND DEBARMENT CERTIFICATION

The person executing the Price Proposal, on behalf of the Design-Builder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the Design-Builder 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 Price Proposal, and that the Design-Builder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this Price Proposal in the proper manner also constitutes the Design-Builder's certification of "Status" under penalty of perjury under the laws of the United States in accordance with the Debarment Certification included elsewhere in the proposal form, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF DESIGN-BUILDER
(If an individual doing business under a
firm name, use this sheet)

Name of Design-Builder_____trading
(Print individual name)

_____
Witness

_____ and doing business as _____
Print signer's name (Print firm name)

_____
(Address as Prequalified)

Signature of Design-Builder_____
(Individually)

_____
Print signer's name

NOTE - AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the NOTARY SEAL

_____ day of _____, 20___.

_____
(Signature of Notary Public)

of _____County.

State of _____.

My Commission Expires:_____

Signature Sheet 3 (Price Proposal) - INDIVIDUAL WITH FIRM NAME

12/21/99

EXECUTION OF PRICE PROPOSAL, NONCOLLUSION AFFIDAVIT, AND DEBARMENT CERTIFICATION

The person executing the Price Proposal, on behalf of the Design-Builder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the Design-Builder 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 Price Proposal, and that the Design-Builder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this Price Proposal in the proper manner also constitutes the Design-Builder's certification of "Status" under penalty of perjury under the laws of the United States in accordance with the Debarment Certification included elsewhere in the proposal form, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF DESIGN-BUILDER
(If an individual doing business in
his own name, use this sheet)

Name of Design-Builder_____
(Print)

_____
(Address as Prequalified)

_____ Signature of Design-Builder_____
Witness (Individually)

_____ _____
Print Signer's Name Print Signer's Name

NOTE - AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the NOTARY SEAL

_____ day of _____, 20___.

_____
(Signature of Notary Public)

of _____County.

State of _____.

My Commission Expires:_____

Signature Sheet 4 (Price Proposal) - Individual Name

12/21/99

EXECUTION OF PRICE PROPOSAL, NONCOLLUSION AFFIDAVIT, AND DEBARMENT CERTIFICATION

The person executing the Price Proposal, on behalf of the Design-Builder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the Design-Builder 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 Price Proposal, and that the Design-Builder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this Price Proposal in the proper manner also constitutes the Design-Builder's certification of "Status" under penalty of perjury under the laws of the United States in accordance with the Debarment Certification included elsewhere in the proposal form, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF DESIGN-BUILDER
(If a partnership, use this sheet)

_____
(Print Name of Partnership)

_____
(Address as Prequalified)

_____ By_____
Witness Partner

_____ _____
Print Signer's Name Print Signer's Name

NOTE - AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the NOTARY SEAL

_____ day of _____, 20___.

_____
(Signature of Notary Public)

of _____County.

State of _____.

My Commission Expires:_____

Signature Sheet 5 (Price Proposal) - Partnership

12/21/99

EXECUTION OF PRICE PROPOSAL, NONCOLLUSION AFFIDAVIT, AND DEBARMENT CERTIFICATION

The person executing the Price Proposal, on behalf of the Design-Builder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the Design-Builder 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 Price Proposal, and that the Design-Builder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this Price Proposal in the proper manner also constitutes the Design-Builder's certification of "Status" under penalty of perjury under the laws of the United States in accordance with the Debarment Certification included elsewhere in the proposal form, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

SIGNATURE OF DESIGN-BUILDER
(Limited Liability Company, use this sheet)

Name of Design-Builder_____
(Print firm name)

_____
(Address as Prequalified)

Signature of Manager_____
(Individually)

_____
Print Signer's Name

NOTE - AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the

_____ day of _____, 20___. NOTARY SEAL

_____
(Signature of Notary Public)

of _____County.

State of _____.

My Commission Expires:_____

Signature Sheet 6 (Price Proposal) - LIMITED LIABILITY COMPANY

2/16/99

Project No.:8.1402212

County: WAKE

ACCEPTED BY THE
DEPARTMENT OF TRANSPORTATION

_____
Contract Officer

_____
Date

Execution of Contract and Bonds
Approved as to Form:

_____
Attorney General

Signature Sheet 7 (Bid - Acceptance by Department)

7/17/90

DEBARMENT CERTIFICATION OF BIDDERS

Instructions & conditions for certification

1. By signing and submitting this proposal, the Design-Builder is providing the certification set out below.

2. The inability of a Design-Builder of provide the certification required below will not necessarily result in denial of participation in this contract. If the certification is not provided, the Design-Builder must submit an explanation (exception) of why it cannot provide the certification set out below. The certification or explanation (exception) will be considered in connection with the Department's determination whether to award the contract. However, failure of the prospective Design-Builder to furnish a certification or an explanation (exception) may be grounds for rejection of the Price Proposal.

3. The certification in this provision is a material representation of fact upon which reliance is placed when the Department determines whether or not to award the contract. If it is later determined that the Design-Builder knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the Department may terminate this contract for cause of default.

4. The prospective Design-Builder shall provide immediate written notice to the Department if at any time the Design-Builder learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

5. 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 12540. 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.

6. The Design-Builder agrees by submitting this Price Proposal that, should the contract be awarded, 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 contract, unless authorized by the Department.

7. The prospective Design-Builder further agrees by submitting this proposal that it 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.

8. The prospective Design-Builder may rely upon a certification of a prospective participant in a lower tier covered transaction that it 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.

9. 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.

10. Except for transactions authorized under paragraph 6 of these instructions, if the successful Design-Builder 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 may terminate this transaction for cause of default.

3

DEBARMENT CERTIFICATION

The Design-Builder 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.

Where the prospective Design-Builder is unable to certify to any of the statements in this certification, it shall attach an explanation to this proposal.

****

IF AN EXPLANATION, AS PROVIDED IN THE ABOVE DEBARMENT CERTIFICATION, HAS BEEN ATTACHED TO THE PROPOSAL, PLEASE CHECK THE BOX SHOWN BELOW:

☐ An explanation has been attached to the proposal.