



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

April 16, 2002

**Addendum No. 1**

RE: State Project: 8.1402212  
F. A. Project: NHF-64 (73)  
Wake County (R-2547 BB, C And CC)  
US-64 Knightdale Bypass From East of  
New Hope Road to Existing US-64 East  
Of Knightdale.

**MAY 8, 2002 Proposal Submission**

To Whom It May Concern:

Reference is made to the Design-Build Package (RFP) and Structure plans recently furnished to you on the above project.

The following Revisions have been made:

The date of the Technical and Price Proposal submission has been revised from April 3, 2002 to May 8, 2002. On the Design-Build Package cover sheet, please draw a single line thru April 3, 2002 and insert May 8, 2002 and initial same in ink. Also, the date of the Price Proposal Opening has been revised from April 19, 2002 to May 24, 2002. On the cover sheet, please draw a single line thru April 19, 2002 and insert May 24, 2002 and initial same in ink. (Sample Attached)

On page no. 1, the date of availability and completion date have been revised within the project special provision entitled "Contract Time and Liquidated Damages". Also a sentence has been added to the last paragraph of this provision. Please void page no. 1 in your package and staple the revised page no. 1 thereto.

**MAILING ADDRESS:**  
NC DEPARTMENT OF TRANSPORTATION  
CONTRACTS & PROPOSALS  
1591 MAIL SERVICE CENTER  
RALEIGH NC 27699-1591

TELEPHONE: 919-250-4124  
FAX: 919-250-4127

WEBSITE: [WWW.DOH.DOT.STATE.NC.US](http://WWW.DOH.DOT.STATE.NC.US)

**LOCATION:**  
CENTURY CENTER COMPLEX  
BUILDING B - ENTRANCE B15  
1020 BIRCH RIDGE DRIVE  
RALEIGH NC

New page nos. 34-A thru 34-D have been added to include "Insurance Special Provisions" for work on Norfolk Southern Railway Company's right-of-way. Please staple new page nos. 34-A thru 34-D after page no. 34 in your package.

On page no. 35, the last sentence of the "Overview" has been revised. Please void page no. 35 in your package and staple the revised page no. 35 thereto.

On page no. 39, the due date for submitting Technical and Price Proposals has been revised. Please void page no. 39 in your package and staple the revised page no. 39 thereto.

On page nos. 48 thru 50, the Roadway Design scope of work has been revised. Please void page nos. 48 thru 50 in your package and staple the revised page nos. 48 thru 50 thereto. New page no. 49-A has been added. Please staple new page no. 49-A after revised page no. 49 in your package.

On page nos. 52 thru 54, the Structure scope of work has been revised. Please void page nos. 52 thru 54 in your package and staple the revised page nos. 52 thru 54 thereto. New page nos. 54-A and 54-B have been added. Please staple new page no. 53-A after revised page no. 53 in your package. Please staple new page nos. 54-A and 54-B after revised page no. 54 in your package.

New page no. 54-C has been added to revise the Hydraulics scope of work. Please staple new page no. 54-C after new page no. 54-B in your package.

New page no. 179-A has been added to include "Section 105-18 SUBSTANTIAL COMPLETION". Please staple new page no. 179-A after page no. 179 in your package.

The Table of Contents has been revised as appropriate to reflect the above noted changes. Please void your Table of Contents and staple the revised Table of Contents thereto.

The following revisions have been made to the structure plans:

For the R-2547BB part, (Structure No. 5 and No. 6), sheet nos. S-3 and S-36 have been revised to remove the reference to "Electrical Conduit System." Please void sheet nos. S-3 and S-36 in your plans and staple the revised sheet nos. S-3 and S-36 thereto.

R-2547 BB,C AND CC

For the R-2547CC part, (Structure No.3), sheet nos. S-15 has been revised to correct various dimensions and the shear stud beginning and ending spaces. Please void sheet no S-15 in your plans and staple the revised sheet no. S-15 thereto.

Sincerely



R. A. Garriss, P.E.  
Contract Officer

RAG/jag/pa  
(Attachments)

cc: Mr. J. D. Goins, P.E.  
Ms. D. M. Barbour, P.E (w/attachments)  
Mr. J. V. Barbour, P.E. (w/attachments)  
Ms. Emily Lawton (FHWA) (w/attachments)  
Mr. S. D. DeWitt, P.E. (w/attachments)  
Mr. J. G. Nance, P.E (Attn:Mr.T. N. Parrott, P.E) (w/attachments)  
Mr. Ellis Powell, P.E (w/attachments)  
Mr. Greg Perfetti, P.E.(w/attachments)  
Mr. Jay Bennett, P.E. (Attn: Mr. J.A. Speer, P.E.) (w/attachments)  
Ms. Cathy Houser, P.E. (w/attachments)  
Mr. Greg Fuller, P.E. (Attn: Mr. Tom Parker, P.E.) (w/attachments)  
Mr. Richard Mullinax, P.E.(Attn:Mr. Rob Ziemba, P.E) (w/attachments)  
Mr. Steve Kite, P.E. (w/attachments)  
Mr. Ron King, P.E.(Attn: Ms. Susan Kunz) (w/attachments)  
Mr. Robert Memory (w/attachments)  
Mr. Jamie Lancaster (w/attachments)  
Mr. Njorge Wainaina, P.E (w/attachments)  
Mr. R.E. Davenport, Jr., P.E. (w/attachments)  
Ms. Kim Canady  
Ms. Yang-Ju-Lin  
Project File (2)

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

DESIGN-BUILD PACKAGE

VOID FOR BIDDING

MAY 8, 2002 JAG

DATE AND TIME OF TECHNICAL AND PRICE PROPOSAL SUBMISSION: ~~APRIL 3, 2002~~ 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

## 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.

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:

<b><u>COVERAGE</u></b>	<b><u>MINIMUM COMBINED LIMITS OF LIABILITY</u></b>
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:

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

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
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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.

**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 out 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

**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         | - | <u>1</u>  |
| 2. Number of trains per day | - | <u>4</u>  |
| 3. Maximum speed of trains  | - | <u>49</u> |

## **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.

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WAKE

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

**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.

## WAKE

- 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

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

8.1402212

## SCOPE OF WORK

WAKE

-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

8.1402212

## SCOPE OF WORK

## WAKE

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

## **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.

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