



PAT McCRORY  
Governor

NICHOLAS J. TENNYSON  
Secretary

December 15, 2015

**Addendum No. 2**

Contract No.: C203702  
TIP No.: I-3802B / I-3610 / B-5365  
Counties: Cabarrus & Rowan  
Project Description: I-85 from north of Lane Street to north of the US 29 / US 601 Connector;  
I-85 / NC 152 and NC 152 / US 29 / US 601 Connector Interchanges;  
and Bridge Nos. 21 and 34

RE: Addendum No. 2 to Final RFP

**February 25, 2016 Letting**

To Whom It May Concern:

Reference is made to the Final Request for Proposals dated November 6, 2015 recently furnished to you on the above project. We have since incorporated changes, and have attached a copy of Addendum No. 2 for your information. Please note that all revisions have been highlighted in gray and are as follows:

On the COVER SHEET, change the date for Technical and Price proposal Submission to **February 4, 2016** and the date for the Price Proposal Opening to **February 25, 2016**. Please mark through the dates shown on the November 6, 2015 (Labeled) RFP and insert the new dates. This correction must be done in ink and initialed and dated by your Team's primary contractor (reference the attached example). The corrected Final RFP must be used to submit the Price Proposal for return to this office.

The first, second and third pages of the *Table of Contents* have been revised. Please void the first, second and third pages in your proposal and staple the revised first, second and third pages thereto.

Page No. 1 of the *Contract Time and Liquidated Damages Project Special Provision* has been revised. Please void Page No. 1 in your proposal and staple the revised Page No. 1 thereto.

Page Nos. 7 and 8 of the *Alternative Technical Concepts and Confidential Questions Project Special Provision* have been revised. Please void Page Nos. 7 and 8 in your proposal and staple the revised Page Nos. 7 and 8 thereto.

Page No. 12 of the *Schedule of Estimated Completion Progress Project Special Provision* has been revised. Please void Page No. 12 in your proposal and staple the revised Page No. 12 thereto.



TIP I-3802B / I-3610 / B-5365  
Addendum No. 2 to Final RFP  
Page 2

Page No. 159 of the *General Section* has been revised. Please void Page No. 159 in your proposal and staple the revised Page No. 159 thereto.

Page Nos. 172, 173 and 174 of the *Roadway Scope of Work* have been revised. Please void Page Nos. 172, 173 and 174 in your proposal and staple the revised Page Nos. 172, 173 and 174 thereto.

Page No. 189 of the *Pavement Management Scope of Work* has been revised. Please void Page No. 189 in your proposal and staple the revised Page No. 189 thereto.

Page No. 217 of the *Environmental Permits Scope of Work* has been revised. Please void Page No. 217 in your proposal and staple the revised Page No. 217 thereto.

Page Nos. 365, 367, 368 and 369 of the *Lighting Standard Special Provision* have been revised. Please void Page Nos. 365, 367, 368 and 369 in your proposal and staple the revised Page Nos. 365, 367, 368 and 369 thereto.

If you have any questions or need additional information, I can be reached by telephone at (919) 707-6900.

Sincerely,



R.A. Garris, PE  
Contract Officer

RAG/dth

cc: Mr. Rodger Rochelle, PE  
Mr. Pat Ivey, PE  
Ms. Teresa Bruton, PE  
Mr. Ron McCollum, PE  
Mr. David Hering, PE  
File

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

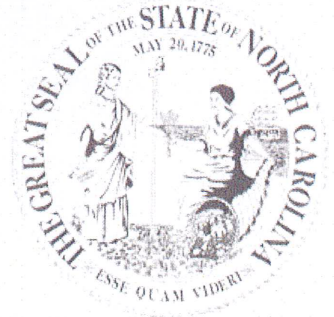
**FINAL REQUEST FOR PROPOSALS**



**DESIGN-BUILD PROJECT**

**TIP I-3802B / I-3610 / B-5365**

**November 6, 2015**



*VOID FOR BIDDING*

DATE AND TIME OF TECHNICAL AND PRICE PROPOSAL SUBMISSION: ~~December 17, 2015~~ <sup>February 4, 2016</sup> BY 4:00 PM

DATE AND TIME OF PRICE PROPOSAL OPENING: ~~January 19, 2016~~ AT 2:00 PM

CONTRACT ID: C 203702

WBS ELEMENT NO. 36780.3.GV3

FEDERAL-AID NO. NHIMF-085-2(78)63

COUNTIES: Cabarrus and Rowan

ROUTE NO. I-85

MILES: 5.9

LOCATION: I-85 from north of Lane Street to north of the US 29 / US 601 Connector;  
I-85 / NC 152 and NC 152 / US 29 / US 601 Connector Interchanges;  
and Bridge Nos. 21 and 34

TYPE OF WORK: DESIGN-BUILD AS SPECIFIED IN THE SCOPE OF WORK  
CONTAINED IN THE REQUEST FOR PROPOSALS

NOTICE:

ALL 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 WHICH REQUIRES THE PROPOSER 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. PROPOSERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOT WITHSTANDING THESE LIMITATIONS ON BIDDING, THE PROPOSER WHO IS AWARDED ANY PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING, REGARDLESS OF FUNDING SOURCES.

5% BID BOND OR BID DEPOSIT REQUIRED

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C203702 (I-3802B/I-3610/B-5365)

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**\*\*\* PROJECT SPECIAL PROVISIONS \*\*\***

**CONTRACT TIME AND LIQUIDATED DAMAGES**

07/12/07

DB1 G04A

The date of availability for this contract is **March 28, 2016**, except that the Design-Build Team shall only begin ground disturbing activities as allowed by this Request for Proposals (RFP). The Design-Build Team shall consider this factor in determining the proposed completion date for this project.

The completion date for this contract is defined as the date proposed in the Technical Proposal by the proposer who is awarded the project. The completion date thus proposed shall not be later than November 15, 2019.

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. Should an observation period extend beyond the Final Completion Date proposed by the Design-Build Team in the Technical Proposal, the performance and payment bonds shall remain in full force and effect until the observation period has been completed and the work accepted by the Department.

The liquidated damages for this contract are **Twenty Thousand Dollars (\$20,000.00)** per calendar day. As an exception to this amount, where the contract has been determined to be substantially complete as defined by the Special Provision entitled *Substantial Completion* found elsewhere in this RFP, the liquidated damages will be reduced to **Five Thousand Dollars (\$5,000.00)** per calendar day.

Where the Design-Build Team who is awarded the contract has proposed a completion date for the contract as required above, but also has proposed an earlier date for substantial completion, then both of these proposed dates will become contract requirements.

Liquidated damages of **Twenty Thousand Dollars (\$20,000.00)** per calendar day will be applicable to the early date for substantial completion proposed by the bidder. Liquidated damages of **Five Thousand Dollars (\$5,000.00)** per calendar day will be applicable to the Final Completion Date proposed by the bidder where the Design-Build Team has proposed an earlier date for substantial completion.

**OTHER LIQUIDATED DAMAGES AND INCENTIVES**

(3/22/07) (Rev. 02/14/08)

DB1 G11

**Reference the Transportation Management Scope of Work found elsewhere in this RFP for more information on the following time restrictions and liquidated damages:**

Liquidated Damages for Intermediate Contract Time #1 for lane narrowing, lane closure, holiday and special event time restrictions for I-85, and I-85 ramps and loops are \$2,500.00 per 15-minute period or any portion thereof.

4. The Design-Build Proposal shall be accompanied by Bid surety in the form of a Bid Bond or Bid Deposit, dated the day of Technical and Price Proposal submission.
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 RFP in accordance with the Project Special Provision entitled *Disadvantaged Business Enterprises*.
6. The Design-Build Proposal shall address all the requirements as specified in this Request for Proposals.

In addition to the above requirements, failure to comply with any of the requirements of Article 102-8 of the Standard Special Provisions, Division One (found elsewhere in this RFP), Article 102-9 of the 2012 *Standard Specifications for Roads and Structures*, or Article 102-10 of the 2012 *Standard Specifications for Roads and Structures* and as amended in the Standard Special Provisions, Division One (found elsewhere in this RFP) may result in a Design-Build Proposal being rejected.

### **ALTERNATIVE TECHNICAL CONCEPTS AND CONFIDENTIAL QUESTIONS**

(6-8-11)

DB1 G56A

To accommodate innovation that may or may not be specifically allowed by the RFP, or other documents incorporated into the contract by reference, the Design-Build Team has the option of submitting Confidential Questions and Alternative Technical Concepts.

#### **Definitions**

A Confidential Question is defined as a private query to the Department containing information whose disclosure could alert others to certain details of doing business in a particular manner.

An Alternative Technical Concept is a private query to the Department that requests a variance to the requirements of the RFP, or other documents incorporated into the contract by reference, that is equal or better in quality or effect as determined by the Department in its sole discretion and that have been used elsewhere under comparable circumstances. For this project, equal or better in quality or effect shall be determined in accordance with the following:

- Alternative Technical Concepts that eliminate the US 29 / US 601 Connector shall provide 1) the same or better access, widening, improvements and traffic measures of effectiveness, in the Department's sole discretion, as included in the December 15, 2015 *NC 152 Roundabout Intersection Configurations* Memorandum provided by the Department; and 2) a minimum level of service D for all intersections, including their individual intersection movements, not identified in the aforementioned Memo.
- Alternative Technical Concepts that **do not** eliminate the US 29 / US 601 Connector shall provide the same or better access, widening, improvements and traffic measures of effectiveness, in the Department's sole discretion, as included in the I-3802B Public Meeting Map provided by the Department.

#### **Confidential Questions**

The Design-Build Team will be permitted to ask Confidential Questions of the Department, and neither the question nor the answer will be shared with other Design-Build Teams. The Department, in its sole discretion, will determine if a question is considered confidential.



Confidential Questions arising prior to issuance of the Final RFP will be allowed during the industry review of the draft RFP with the individual Design-Build Teams. The Department will answer the Confidential Question verbally at the industry review meeting, if possible, and / or through subtle changes in the Final RFP, which will clarify the scope by either allowing or disallowing the request. To the greatest extent possible, the revision will be made in such a manner as to not disclose the Confidential Question.

After the issuance of the Final RFP, Confidential Questions may be asked by requesting a meeting with the State Contract Officer. The request shall be in writing and provide sufficient detail to evaluate the magnitude of the request. Questions shall be of such magnitude as to warrant a special meeting. Minor questions will not be acknowledged or answered. After evaluation, the State Contract Officer will respond to the question in writing to the Design-Build Team and / or through subtle changes in the Final RFP as reflected in an addendum, which will clarify the scope by either allowing or disallowing the request. To the greatest extent possible, the revision will be made in such a manner as to not disclose the Confidential Question.

If the Design-Build Team includes work based on the Confidential Questions and answers, the work shall be discussed in the Technical Proposal.

### **Alternative Technical Concepts**

The Design-Build Team may include an ATC in the Technical and Price Proposal only if the ATC has been received by the Department by no later than four weeks prior to the deadline for submitting Technical and Price Proposals and it has been approved by the Department (including conditionally approved ATCs, if all conditions are met).

The submittal deadline above applies only to initial ATC submittals. Resubmittal of an ATC that (1) has been revised in response to the Department's requests for further information concerning a prior submittal or (2) is a Formal ATC for a Preliminary ATC that received a favorable response from the Department shall be received by the Department no later than two weeks prior to the deadline for submitting Technical and Price Proposals.

Should the Department revise the RFP after a Formal ATC has been approved, the Design-Build Team shall be solely responsible for reviewing the RFP and determining if the ATC deviates from the revised requirements. If necessary, the Design-Build Team must submit a request for approval of all additional required variance(s) within five business days of the revised RFP distribution.

An ATC shall in no way take advantage of an error or omission in the RFP, or other documents incorporated into the contract by reference. If, at the sole discretion of the Department, an ATC is deemed to take advantage of an error or omission in the RFP, or other documents incorporated into the contract by reference, the RFP will be revised without regard to confidentiality. If at any time, the Department receives a documented question on the project similar to a concept submitted in the form of a Preliminary ATC or Formal ATC, the Department reserves the right to revise the RFP without further regard for confidentiality.

By approving an ATC, the Department acknowledges that the ATC may be included in the design and RFC Plans; however, approval of any ATC in no way relieves the Design-Build Team of its obligation to satisfy (1) other contract requirements not specifically identified in the

ATC submittal. Likewise, a favorable response to a Preliminary ATC submittal is not sufficient to include the ATC in the Design-Build Proposal.

**SCHEDULE OF ESTIMATED COMPLETION PROGRESS**

(9-1-11) (Rev. 3/19/14)

DB1 G58

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

<u>Fiscal Year</u>	<u>Progress (% of Dollar Value)</u>
2016 (07/01/15 – 06/30/16)	3 % of Total Amount Bid
2017 (07/01/16 – 06/30/17)	36 % of Total Amount Bid
2018 (07/01/17 – 06/30/18)	30 % of Total Amount Bid
2019 (07/01/18 – 06/30/19)	22 % of Total Amount Bid
2020 (07/01/19 – 06/30/20)	9 % of Total Amount Bid

The Design-Build Team shall also furnish its own progress schedule in accordance with Article 108-2 of the 2012 *Standard Specifications for Roads and Structures*. Any acceleration of the progress as shown by the Design-Build Team's progress schedule over the progress as shown above shall be subject to the approval of the Engineer.

**DISADVANTAGED BUSINESS ENTERPRISE**

(12-1-13)

DB1 G061

**Description**

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

**Definitions**

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

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

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

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

**APPROVAL OF PERSONNEL**

The Department will have the right to approve or reject any personnel, assigned to a project by the Design-Build Team.

In the event of engagement of a former employee of the Department, the Design-Build Team or their subcontractors shall restrict such person or persons from working on any of the Design-Build Team'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. *Former Involvement* shall be defined as active participation in any of the following activities:

- Drafting the contract
- Defining the contract scope
- Design-Build Team selection
- Negotiation of the contract cost (including calculating manhours or fees); and
- Contract administration

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.

**SUBMITTAL OF TECHNICAL AND PRICE PROPOSALS**

**Technical and / or Price Proposals that do not adhere to all the requirements noted below may be considered non-responsive and may result in the Department not considering the Design-Build Team for award of the contract or reading their Price Proposal publicly.**

**GENERAL**

Technical and Price Proposals will be accepted until **4:00 p.m. Local Time on Thursday, February 4, 2016**, at the office of the State Contract Officer:

Mr. Randy A. Garris, PE  
 Contract Standards and Development  
 1020 Birch Ridge Drive  
 Century Center Complex - Building B  
 Raleigh, NC 27610

**No Proposals will be accepted after the time specified.**

Proposals shall be submitted in two separate, sealed parcels containing the Technical Proposal in one and the Price Proposal in the other parcel.

**ROADWAY SCOPE OF WORK** (12-15-15)

**It should be noted that TIP Project, I-3802B, as referenced throughout this Request for Proposals (RFP), represents TIP Projects I-3802B, I-3610 and B-5365. All references to TIP Projects I-3802, I-3802B, I-3610 and B-5365 in material provided by the Department shall apply to this project.**

**Project Details**

- The Design-Build Team shall design and construct an eight-lane divided freeway with a minimum 22-foot median from north of Lane Street (SR 2180) to north of the US 29 / US 601 Connector. Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall design and construct the -L- Line providing the same or better access, widening, improvements, and traffic measures of effectiveness, in the Department's sole discretion, included in the I-3802 Public Meeting Map provided by the Department. The limits of -L- Line construction shall be of sufficient length to tie to existing based upon the current NCDOT guidelines and standards. The mainline (-L- Line) shall be designed and constructed to meet a 70-mph design speed for a rolling urban freeway designed to interstate standards. The Design-Build Team shall provide all other design criteria in the Technical Proposal.
- Along the -L- Line, the Design-Build Team shall design and construct minimum 14-foot outside shoulders (twelve-foot useable shoulder width plus two feet), 12-foot of which shall be full depth paved shoulders, including all acceleration, deceleration and auxiliary lanes, and ramps / loops to the back of the gore (12-foot width). Along the -L- Line, the Design-Build Team shall design and construct a minimum 22-foot full depth paved median with Type "T" double-faced concrete median barrier, unless allowed otherwise elsewhere in this RFP.
- The Design-Build Team shall coordinate with Project I-3802A design and construction to ensure accurate hydrology, capacity, and horizontal and vertical ties that adhere to the design criteria. The Design-Build Team shall not make any design or construction revisions that impact the design or construction of project I-3802A without prior written approval from the Design-Build Unit (Reference the *Cooperation Between Contractors* Project Special Provision found elsewhere in this RFP)
- Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall design and construct -Y- Lines, ramps, and service roads providing the same or better access, widening, improvement, and traffic measures of effectiveness, in the Department's sole discretion, included in the I-3802 Public Meeting Map provided by the Department. The limits of -Y- Line construction shall be of sufficient length to tie to existing based upon the current NCDOT guidelines and standards.
- The Design-Build Team shall design and construct all -Y- Lines such that the through movement is not required to change lanes throughout the project limits.

- The Design-Build Team shall design and construct all diverging diamond interchanges (DDI), in accordance with the requirements noted below:
  - Between and through the DDI crossovers, the Design-Build Team shall design and construct lane widths that accommodate a WB-67; however, the minimum lane width between and through the DDI crossovers shall be 15 feet. All approach / departure lanes to / from the crossovers shall be tapered to the crossover lane-width prior to entering / after exiting the curve approaching / departing the crossover.
  - The Design-Build Team shall design and construct lane widths for all spurs (right and left turn movements from / to the ramps) that accommodate a WB-67; however, the minimum spur lane width shall be 15 feet. All approach / departure ramp lanes to / from the spurs shall be tapered to the spur lane width prior to entering / after exiting the spur. Regardless of the spur lane width, all spur alignments shall be located 15 feet from the outside edge of travel lane.
  - The four ramp channelization islands shall be raised grass islands bordered with 2'-6" curb and gutter.
  - Between the DDI crossovers, the Design-Build Team shall provide a minimum ten-foot wide pedestrian accommodation within the -Y- Line median. Along both sides of the aforementioned ten-foot pedestrian accommodation, the Design-Build Team shall provide barrier (2'-6" concrete dual flat-faced barrier with metal handrail and no glare screen) that extends a minimum of 42" above the walking surface. The barrier shall meet AASHTO TL-2 crash test requirements and terminate with a ten-foot taper that reduces the barrier height to 2'-3". Excluding within the aforementioned ten-foot taper, the handrail shall be installed in accordance with the 10-30-2013 Proposed Pedestrian Safety Rail Detail provided by the Department.
  - The curves approaching / departing the crossovers shall slope from the median to the outside at a 0.02 cross slope.
- The Design-Build Team has the option to replace the NC 152 / US 29 / US 601 Connector interchange with a roundabout and eliminate the US 29 / US 601 Connector, contingent on the following requirements being met:
  - The Design-Build Team shall design and construct the roundabout that replaces the NC 152 / US 29 / US 601 Connector interchange and the roundabouts at the I-85 ramp terminals in accordance with the December 15, 2015 *NC 152 Roundabout Intersection Configurations* Memorandum provided by the Department. For all other intersections, the Design-Build Team shall design and construct improvements required to accommodate the new traffic distribution associated with replacing the NC 152 / US 29 / US 601 Connector interchange with a roundabout and eliminating the US 29 / US 601 Connector. Specifically, in accordance with the January 1, 2012 NCDOT Congestion Management Capacity Analysis Guidelines, the Design-Build Team shall provide a capacity analysis for the NC 152 / US 29 corridor and surrounding roadways that, at a minimum, indicates that all intersections not identified in the aforementioned Memo, as well as their individual intersection movements, will operate at a Level of Service D or better with the new traffic distribution.
  - The Design-Build Team shall design and construct the extension of Hope Lane (SR 2672) to the northern stubout of the NC 152 / Power Street intersection roundabout.

- The Design-Build Team shall eliminate the US 29 / Madison Road intersection. The Design-Build Team shall design and construct Madison Road and Mrytle Goodnight Road such that they are provided access to the Hope Lane (SR 2672) extension noted above.
  - At NC 152, the Design-Build Team shall design and construct the Yost Town Road intersection as a right in / right out facility. The Design-Build Team shall design and construct Yost Town Road such that it is provided access to the Hope Lane (SR 2672) extension noted above.
  - The Design-Build Team shall coordinate with the China Grove Properties property owner to ensure that the aforementioned roadway revisions provide accurate hydrology, capacity, and horizontal and vertical ties to the future site development design.
  - **\*\* NOTE \*\* Relocated bullet on capacity analysis requirements**
  - Within the horizontal curve located north of the US 29 / US 601 Connector flyover bridge, the Design-Build Team shall design and construct the mainline median transition from a minimum 22-foot width, with a Type "T" double-faced concrete median barrier, to the existing 46-foot width, with one line of rigid double-faced guardrail. From the northern limits of the aforementioned transition to the project's northern terminus, the existing mainline median shoulders may remain in place, unless their replacement is required elsewhere in this RFP. If replacement is required, the Design-Build Team shall design and construct minimum 12-foot mainline median shoulders, ten-foot of which shall be full depth paved shoulders.
  - The Design-Build Team shall be responsible for all activities required for this revision, as deemed necessary by the NCDOT and the FHWA, including but not limited to public involvement, additional design effort, additional construction effort, NEPA re-evaluation, IAR revision, and / or the coordination with and concurrence from other stakeholders, including but not limited to the City of China Grove. The Department will not honor any requests for additional contract time or compensation for any efforts associated with replacing the NC 152 / US 29 / US 601 Connector interchange with a roundabout and eliminating the US 29 / US 601 Connector, including but not limited to public involvement, additional design effort, additional construction effort, and / or additional coordination and approvals.
- The Design-Build Team shall design and construct one-lane ramps that provide a minimum 16-foot lane width. The Design-Build Team shall design and construct two lane ramps that provide minimum 12-foot lanes. All ramps shall have 14-foot outside shoulders, four-foot of which shall be full depth paved shoulders and 12-foot inside shoulders, four-foot of which shall be full depth paved shoulders.
  - The Design-Build Team shall design and construct loops that adhere to Table 3-29, *Design Widths of Pavements for Turning Roadways*, shown in AASHTO's *A Policy on Geometric Design of Highways and Streets* (2011) - Case II / Condition C for one-lane loops; Case III / Condition C for two-lane loops. All loops shall have 12-foot outside shoulders, four-foot of which shall be full depth paved shoulders. All loops shall have 2'-6" curb and gutter along the inside edge of pavement, with a 14-foot berm. The minimum loop design shall be 30-mph with a minimum 230-foot radius.
  - The Design-Build Team will not be required to design or construct ramps or bridges to accommodate future loops.

shall be submitted for review and acceptance using the Design-Build submittal process prior to incorporation. The expected duration for traffic on temporary pavement must be included as part of the submittal.

When a resurfacing grade ties to an existing curb, bridge and / or pavement, the Design-Build Team shall perform incidental milling such that the new pavement ties flush with the existing feature(s). When tying to the aforementioned feature(s), the Design-Build Team shall not reduce the minimum required surface layer pavement thickness noted above. At existing pavement ties, the Design-Build Team shall perform incidental milling for a minimum distance of 25 feet at bridges and six feet at curb sections. The Design-Build Team shall not perform incidental milling more than 72 hours prior to placement of the asphalt surface layer.

All driveways, up to the radius point, shall be constructed with the full-depth pavement design of the intersecting roadway. The entire impacted length of all non-concrete driveways with a 10% grade shall be constructed with 1.5" S9.5B (or S9.5C or SF9.5A) and 8" ABC with prime coat. Unless otherwise noted above, the Design-Build Team shall adhere to the following for all driveway construction:

- For existing gravel and soil driveways, use 8" ABC
- For existing asphalt driveways, use 1.5" S9.5B (or S9.5C or SF9.5A) and 8" ABC with prime coat
- For existing concrete driveways, use 6" jointed concrete reinforced with woven wire mesh

The rate of application and the maximum and minimum thickness per application and layer shall be in accordance with the NCDOT Roadway Design Manual.

Excluding the high side of superelevated sections, the Design-Build Team shall design and construct median and outside shoulder drains and outlets at the locations noted below for the mainline asphalt pavement alternates:

- Throughout crest vertical curves located in cut sections
- Throughout all sag vertical curves
- Where the grade is less than 1%.

Excluding the high side of superelevated sections and areas where the existing mainline shoulders may remain in place, the Design-Build Team shall design and construct continuous median and outside shoulder drains and outlets for the mainline concrete pavement designs, including but not limited to the widened section from the beginning of the existing doveled jointed concrete pavement north of the US 29 / US 601 Connector (approximately Station 750+00 -L-) to the northern project limits.

Where installed on the outside shoulder, outlets shall be provided approximately every 300 feet. Where installed on the median shoulder, outlet locations shall not exceed 500 feet, and all outlets shall be located at drainage structures. Shoulder drains shall be placed to drain the entire pavement structure. The shoulder drain design and outlet locations shall be submitted to the Design-Build Unit for review and acceptance.

with this additional coordination. The Design-Build Team shall follow the appropriate details in the document titled “Merger Implementation Team – Merger Process Information” which will be provided by the Department upon request.

Unless otherwise stipulated in the Technical Proposal, the Department will schedule the 4B and 4C Meetings for I-3802B / I-3610 / B-5365 for July 2016 and October 2016, respectively. The Design-Build Team shall clearly identify in their Technical Proposal what months they would like the Department to schedule these meetings. Failure on the part of the Design-Build Team to meet these dates shall place all responsibility for delays resulting from missing these dates solely in the hands of the Design-Build Team.

Unless otherwise noted in this RFP, the Design-Build Team shall be bound by the terms of all signed planning documents, and approved minutes and commitments of all concurrence meetings and shall be held accountable for meeting all permit conditions. The Design-Build Team shall be required to staff any personnel necessary to provide permit compliance.

Unless noted otherwise elsewhere in this RFP, the Department will not honor any requests for additional contract time or compensation for any efforts required in order to obtain compliance with Section 7 of the *Endangered Species Act* for the northern long-eared bat and / or obtain any permit or permit modification, including but not limited to public involvement, additional design effort, additional construction effort, and / or additional environmental agency coordination and approvals.

#### ***Endangered Species Act Compliance for Northern Long-eared Bat***

As noted in the December 2, 2015 Construction Consultation Project Commitments, the US Army Corps of Engineers (USACE) Section 404 Permit will not be issued until the *Endangered Species Act* compliance is satisfied for the northern long-eared bat. To assist with obtaining this compliance, the Department has completed the Federally Protected Bat Species Survey Report for the preliminary design shown on the I-3802 Public Meeting Map. If the Design-Build Team’s design and / or construction extend beyond the limits surveyed by the Department, the Design-Build Team shall update the Federally Protected Bat Species Survey Report to include all additional areas impacted by the Design-Build Team’s design and / or construction for the Department’s review and acceptance. The Design-Build Team shall acquire all other information and prepare drawings required to obtain compliance with Section 7 of the *Endangered Species Act* for the northern long-eared bat. At a minimum, the required information / drawings shall consist of the following:

- Biological Conclusion Recommendations
- Estimated total acreage of tree clearing for the project
- Estimated tree clearing acreage beyond 100 feet of the existing cleared corridor
- Electronic design files showing the limits of cut, fill, and tree clearing



- Complete luminaire catalog number. Catalog number tested must match the catalog number of the luminaire submitted, except for variations which do not affect performance.
  - Description of luminaire, LED light source(s) and LED driver(s)
  - Goniophotometry
  - Colorimetry
- 
- LM-80 lumen maintenance test report shall be provided for each respective LED light source.
  - Luminaire shall be constructed of a single piece die cast aluminum housing. Each luminaire shall be finished gray in color unless otherwise noted.
  - The luminaire shall have a 7 pin ANSI C136.41 compliant photocontrol receptacle for future expansion capabilities. Provide shorting caps to cover photocontrol receptacle for all luminaires.
  - Luminaires shall have a maximum lamp lumen depreciation (LLD) factor of 0.84 at 100,000 hours & 25°C. Provide a summary of reliability testing performed for LED driver.
  - Luminaires maximum total power consumption shall not exceed the values shown in the plans. Nominal luminaire input wattage shall account for nominal applied voltage and any reduction in driver efficiency due to sub-optimal driver loading.
  - Luminaire shall have a maximum Backlight, Uplight & Glare (BUG) rating of 3-0-3 and an IESNA distribution of Type II or Type III as required to meet the spacing, the average maintained footcandle level, and the average to minimum uniformity ratio requirements shown on the plans. The same BUG rating and distribution type shall be used throughout the project.
  - Luminaire electrical components (driver and surge protection) shall meet the dust and moisture requirements of ingress protection (IP) rating of IP65 and IP66 for the optical compartments as specified in ANSI C136.25, minimum.
  - Luminaire shall have external and internal labels per ANSI C136.15 and ANSI C136.22, respectively. Internal label shall identify the manufacturer, year and month of manufacture, and the manufacturer's part number.
  - Luminaire shall have an internal bubble level.
  - Luminaires shall start and operate in -20° C to +40° C ambient.
  - Luminaires shall be rated for continuous service at an ambient temperature of 40°C (104°F)
  - Electrically test fully assembled luminaires before shipment from factory.
  - Effective Projected Area (EPA) and weight of the luminaires shall not exceed 1.4 square feet and 46 pounds, respectively.
  - Luminaires shall be designed for ease of electrical component replacement.
  - Luminaires shall be rated for minimum 2G vibration, minimum, per ANSI C136.31.
  - LED light sources and drivers shall be RoHS compliant.
  - The luminaire manufacturer shall have no less than five (5) years of experience in manufacturing LED-based lighting products and the manufacturing facility must be ISO 9001 certified.

- The coating shall exhibit no greater than 30% reduction of gloss per ASTM D523, after 500 hours of QUV testing at ASTM G154 Cycle 6.
- Exterior surfaces shall be smooth and free of burrs.

H. Thermal management

- Mechanical design of protruding external surfaces (heat sink fins) on roadway luminaries shall facilitate hose-down cleaning and discourage debris accumulation.
- Liquids or moving parts shall not be allowed for thermal management.

I. Color Quality

- Minimum Color Rendering Index (CRI) of 70 with a Correlated Color Temperature (CCT) of 3500K to 4500K

J. Optics

- Transmissive optical components shall be applied in accordance with OEM design guidelines to ensure suitability for the thermal / mechanical / chemical environment.

K. The following shall be in accordance with corresponding sections of ANSI C136.37

- All internal components shall be assembled and pre-wired using modular electrical connections.
- Terminal blocks shall be used for incoming AC lines. Terminal blocks shall be easily accessible to installers or repair personnel. Wire nuts shall be prohibited inside the luminaire housing.

L. Latching and hinging

- Refractor and housing door holders and hinges shall be designed to maintain positive control of door to the luminaire body so as not to allow the accidental disengagement of either door.
- Drivers shall be mounted to a housing door designed to be opened from the bottom of the luminaire. Housing door shall allow easy removal for troubleshooting / repair on the ground.

M. Manufacturer or local sales representative shall provide installation and troubleshooting support via telephone and / or e-mail.

**7.30 WARRANTY**

Provide a minimum ten-year warranty covering maintained integrity and functionality of the luminaire housing, wiring, and connections, LED light source(s) and LED driver. Negligible light output from more than 10 percent of the LED packages shall constitute luminaire failure.

Warranty period shall begin after project acceptance by the Department. Supplier shall furnish documentation of warranty procedures to the Design-Build Team stating that warranty is for NCDOT.

**7.40 CONSTRUCTION METHODS**

Level and secure each luminaire in all directions. Adjust any luminaires, as directed by the Engineer, to provide optimal illumination distribution.

All LED packages on all luminaires must be operating normally at project acceptance. Any luminaire displaying improper operating characteristics prior to the Department accepting the entire project shall be replaced by the Design-Build Team at no additional cost to the Department.

**8.00 HIGH MAST LIGHT EMITTING DIODE (LED) LUMINAIRES**

**8.10 DESCRIPTION**

Furnish, install and place into satisfactory operation, LED luminaires on high mount standards as detailed in this RFP.

The Design-Build Team shall supply Holophane or Cooper LED high mount luminaires as specified below or approved equal.

<b>Mounting Height</b>	<b>Nos. of Fixtures</b>	<b>Holophane Part Number</b>	<b>Cooper Part Number</b>
120'	8	HMLED2-12-4K-AH-G-AW-P7	GAN-AE-10-LED-8-5WQ-AP-MA-4N7
100'	6	HMLED2-12-4K-AH-G-AW-P7	GAN-AE-10-LED-8-5WQ-AP-MA-4N7
80'	8	HMLED2-06-4K-AH-G-AWP7	GAN-AE-06-LED-8-5WQ-AP-MA-4N7
60'	4	HMLED2-06-4K-AH-G-AWP7	GAN-AE-06-LED-8-5WQ-AP-MA-4N7

Any alternate luminaire submitted for approval must meet the minimum requirements below. The Design-Build Team shall supply the Department with current catalog cuts and 3<sup>rd</sup> party certified photometric data files in Illuminating Engineering Society (IES) format for any alternate high mount luminaire submitted for Department approval. The Department will thoroughly evaluate alternate luminaires to determine if proposed alternate high mount luminaire meets or exceeds design criteria prior to installation.

High mount luminaire retrofit LED kits shall not be an acceptable alternative.

## 8.20 MATERIALS

### 8.21 LUMINAIRE REQUIREMENTS

#### A. General Requirements

- LM-79 photometric test reports shall be provided for all LED luminaires. LM-79 luminaire photometric reports shall be produced by an independent testing laboratory and include the following:
  - Name of testing laboratory. The testing laboratory must hold National Voluntary Laboratory Accreditation Program (NVLAP) accreditation for the IES LM-79 test procedure or must be qualified, verified, and recognized through the U.S. Department of Energy's CALiPER program.
  - Report number
  - Date
  - Complete luminaire catalog number. Catalog number tested must match the catalog number of the luminaire submitted, except for variations which do not affect performance.
  - Description of luminaire, LED light source(s), and LED driver(s)
  - Goniophotometry
  - Colorimetry
- LM-80 lumen maintenance test report shall be provided for each respective LED light source.
- Luminaire shall be constructed of aluminum. Each luminaire shall be finished gray in color unless otherwise noted.
- The luminaire shall have a 7 pin ANSI C136.41 compliant photocontrol receptacle for future expansion capabilities. Provide shorting caps to cover photocontrol receptacle for all luminaires.
- Luminaires shall have a maximum lamp lumen depreciation (LLD) factor of 0.83 at 100,000 hours & 25° C. Provide a summary of reliability testing performed for LED driver.
- Luminaires maximum total power consumption shall not exceed the values shown in the plans. Nominal luminaire input wattage shall account for nominal applied voltage and any reduction in driver efficiency due to sub-optimal driver loading.
- Luminaire shall have a maximum Backlight, Uplight & Glare (BUG) rating of 5-0-5 and an IESNA distribution of Type V as required to meet the spacing, the average maintained footcandle level and the average to minimum uniformity ratio requirements shown on the plans. The same BUG rating and distribution type shall be used throughout the project.
- Luminaire LED modules shall meet dust and moisture rating of IP-66, minimum.
- Luminaire shall have an external label per ANSI C136.15.
- Luminaires shall have an internal label per ANSI C136.22.
- Luminaires shall start and operate in -20° C to +40° C ambient.