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

ADDENDUM #4
TO THE
FINAL REQUEST FOR PROPOSAL

DESIGN-BUILD PROJECT

TIP U-5713 / R-5777A & B

July 26, 2019

VOID FOR BIDDING

DATE AND TIME OF TECHNICAL PROPOSAL SUBMISSION: **AUGUST 19, 2019** BY **4:00 PM**

DATE AND TIME OF PRICE PROPOSAL SUBMISSION: **AUGUST 27, 2019** BY **4:00 PM**

DATE AND TIME OF PRICE PROPOSAL OPENING: **SEPTEMBER 17, 2019** AT **2:00 PM**

CONTRACT ID:	C 204225
WBS ELEMENT NO.	50111.3.1
FEDERAL-AID NO.	N/A
COUNTY:	Craven
ROUTE NO.	U.S. 70
MILES:	5.1
LOCATION:	U.S. 70 from the eastern approach of the Neuse River Bridge to approximately one (1) mile east of S.R. 1116 (Thurman Road)
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.

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5% BID BOND OR BID DEPOSIT REQUIRED

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OTHER LIQUIDATED DAMAGES AND INCENTIVES

(3-22-7) (Rev. 2-14-8) 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 US 70 and all ramps and loops are $2,500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #2 for lane narrowing, lane closure, holiday and special event time restrictions for US 70 and all ramps and loops are $2,500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #3 for lane narrowing, lane closure, holiday and special event time restrictions for Williams Road are $1,250.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #4 for road closure time restrictions for US 70 and all ramps and loops are $5,000.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #5 for road closure time restrictions for All Other Roads are $2,500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #6 for the above multi-vehicle hauling time restrictions for US 70 and all interchange ramps (once open to traffic), and Williams Road are $300.00 per vehicle.

Liquidated Damages for Intermediate Contract Time #7 for the above multi-vehicle hauling time restrictions for US 70 and all interchange ramps (once open to traffic), and Williams Road are $400.00 per vehicle.

Liquidated Damages for Erosion Control efforts apply to this project

Reference the Erosion and Sedimentation Control Scope of Work found elsewhere in this RFP for additional information under the Erosion Control Damages Section.

Reference the ITS 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 #8 for Failure to Maintain Traveler Information for Westbound Traffic After the Existing DMS is Removed are $10,000.00 per day or any portion thereof.

ROADWAY SCOPE OF WORK (7/26/2019)

1. General

1.1 Unless allowed otherwise in this RFP, roadway designs shall be in accordance with the following documents in order of precedence:

(a) The requirements of this RFP;

(b) 2011 AASHTO A Policy on Geometric Design of Highways and Streets, 2013 Errata.

(c) NCDOT Roadway Design Manual, including all revisions effective on the Technical Proposal submittal date;

(d) 2018 NCDOT Standard Drawings, or as superseded by the detail sheets found at:

https://connect.ncdot.gov/resources/Specifications/Pages/2018-Roadway-Standard-Drawings.aspx

1.2 All pavement designs shall be in accordance with the Pavement Management Scope of Work found elsewhere in this RFP.

1.3 All limits of construction along the Mainline, Cross Streets, Service Roads and Ramps shall be of sufficient length to tie into existing conditions based upon the documents set forth in Section 1.1 of this Roadway Scope of Work.

1.4 Crown points and cross slopes along the Mainline, Cross Streets, Service Roads and Ramps shall be in accordance with the Hydraulics Scope of Work, found elsewhere in this RFP and with the documents set forth in Section 1.1 of this Roadway Scope of Work. The Hydraulics Scope of Work shall take precedence over the documents set forth in Section 1.1.

1.5 Unless otherwise noted in this RFP, the Design-Build Team shall design and construct the Mainline, all Cross Streets, Ramps, and Service Roads providing the same or better access, widening, improvements, and traffic measures of effectiveness, in the Department's sole discretion, included in the Preliminary Roadway Plans Provided by the Department.

1.6 Unless otherwise required in this RFP, all new curb and gutter along outside edge of pavement and within the Project limits shall be 2' – 6" curb and gutter in accordance with Standard #846.01 (*Roadway Standard Drawing for Concrete Curb, Gutter and Curb & Gutter*) of the 2018 *Roadway Standard Drawings*.

1.7 The Design-Build Team shall design and construct all medians within the Project limits as monolithic concrete islands in accordance with Standard #852.01 (*Roadway Standard Drawing for Concrete Islands*) and associated standard drawings of the 2018 *Roadway Standard Drawings*. Planted medians will not be permitted.

1.8 The Design-Build Team shall design and construct all Cross Streets and Service Roads such that the through movement is not required to change lanes throughout the Project limits except where tying into existing.

1.9 NSR / NCRR At-Grade Railroad Crossings with -Y- Lines:

(a) if any portion of the design and / or construction of the -Y- Lines comes within 10 feet of the centerline of the NSR / NCRR railroad tracks running parallel to the Mainline, the Design-Build Team shall upgrade the existing signals at such at-grade crossings.

1.10 A longitudinal zero percent grade along the roadway profile is acceptable under temporary conditions only. The final, permanent longitudinal grade shall be no less than 0.3%.

1.11 Throughout this Roadway Scope of Work, the following definitions shall apply:

(a) the term "**Mainline**" or "**-L- Line**" refers to US 70.

(b) the terms "**Cross Streets**" and **"-Y- Lines**" refers to the following streets:

Cross Streets (-Y- Lines) as shown on the Preliminary Roadway Plans	
R-5777A & B	**U-5713**
Day Star Lane (SRY21C2)	Garner Road (Y1)
Thurman Road (Y21)	Grantham Road (Y2)
Taberna Way (Y22)	Airport Road (Y3)
	Williams Road (Y4)
Note: The Design-Build Team is advised that the alignment names herein shown are for illustrative purposes only, not contractual and shown in accordance with the definition of Preliminary Roadway Plans. The Design-Build Team has the option to utilize the alignment names herein shown or use new alignment names that fit the need of its proposed designs.	

(c) the term "**Service Roads**" refers to the following alignments shown in the Preliminary Roadway Plans:

Service Roads as shown on the Preliminary Roadway Plans	
R-5777A & B	**U-5713**
SRY21B	SR1
SRY21B2	SR2

SRY21AY22B	SR3_ALT
SRY22A	SR4
SRY21C	SR5
SRY21D	SR6
SRY22D	SR7
Note: The Design-Build Team is advised that the alignment names herein shown are for illustrative purposes only, not contractual and shown in accordance with the definition of Preliminary Roadway Plans. The Design-Build Team has the option to utilize the alignment names herein shown or use new alignment names that fit the need of its proposed designs.	

(d) the term "**Ramps**" refers to the following alignments shown in the Preliminary Roadway Plans:

Ramps as shown on the Preliminary Roadway Plans	
R-5777A & B	**U-5713**
Y21RPA	RPAY2
Y21RPB	RPBY2
Y21RPC	RPCY2
Y21RPD	RPDY2
Y22RPA	RPAY3
Y22RPB	RPBY3
Y22RPC	RPCY3
Y22RPD	RPDY3
	RPAY4
	RPBY4
	RPCY4
	RPDY4
	RPA55
	RPB55
Note: The Design-Build Team is advised that the alignment names herein shown are for illustrative purposes only, not contractual and shown in accordance with the definition of Preliminary Roadway Plans. The Design-Build Team has the option to utilize the alignment names herein shown or use new alignment names that fit the need of its proposed designs.	

2. Preliminary Roadway Plans provided by the Department

2.1 Throughout this Roadway Scope of Work, any references to the Preliminary Roadway Plans shall include the following, in order of precedence:

(a) the preliminary roadway plans with corresponding roadway profiles, roadway cross sections and typical cross sections for each alignment encompassing STIP Projects U-5713 and R-5777A & B provided by the Department; and

(b) the most recent public meeting maps provided by the Department.

2.2 Except were indicated in this Roadway Scope of Work, the Preliminary Roadway Plans are provided by the Department for reference only and shall not be a part of the Design-Build contract between the Design-Build Team and the Department. Any references to the Preliminary Roadway Plans throughout this Roadway Scope of Work are for illustrative purposes only and are not intended to be contractual. The Department shall not be responsible for any omissions, errors, or any information shown or stated on the Preliminary Roadway Plans.

2.3 The Design-Build Team is allowed and encouraged to proposed modifications to the Preliminary Roadway Plans. Such proposed modifications by the Design-Build Team:

(a) shall not reduce the posted speed limit of the Mainline;

(b) shall fully comply with the Project commitments outlined in the Categorical Exclusion document for U-5713 / R-5777A & B provided by the Department;

(c) shall not place the Cross Streets alignments over the Mainline, under any circumstances. Alternative Technical Concepts proposing Cross Street alignments over the Mainline will be rejected; and

(d) shall comply with the interchange type set forth in Section 4.2 of this Roadway Scope of Work.

2.4 Modifications to the Roadway Preliminary Plans that are in compliance with items 2.3(a) through 2.3(d) shall not require the submittal of an Alternative Technical Concept, unless an Alternative Technical Concept is required due to deviations from the requirements included in other sections of this RFP.

2.5 Design Exceptions in the Preliminary Roadway Plans:

(a) The Department is aware of the following design exceptions:

R-5777A & B	
Service Road - SRY21AY22B-	PI Sta. 63+66.57 Design Speed = 25 mph
U-5713	
Service Road -SR4-	PI Sta. 25+68.10 Design Speed = 20 mph
Service Road -SR7-	PI Sta. 18+82.38 Design Speed = 20 mph
Service Road -Y3-	PI Sta. 27+30.29 Design Speed = 20 mph (stop condition)

Mainline -L- Northbound and Southbound	Distance between ramps in both directions, between Airport Road and Williams Road shall be no less than the distance shown in the Preliminary Roadway Plans.
Grantham Road -Y2-	Storage length for left turn movement into Service Road -SR1- shall be no less than 275 feet.
Ramp -RPAY4-	Minimum width of ramp inside shoulder shall be no less than 4 feet.
Ramp -RPBY4-	
Ramp -RPCY4-	

(b) All design exceptions, whether included in Section 2.5(a) of this Roadway Scope of Work, or as proposed by the Design-Build Team that are not included in the list provided under Section 2.5(a), shall undergo the design exceptions process established by the Department.

3. Mainline Specifications

3.1 Mainline Project Limits:

(a) The overall project limit on the south side of the Project is approximately one (1) mile east of Thurman Road, generally station 212+00 on the Preliminary Roadway Plans.

(b) At the south end of the Project, the Department notes the following:

1. The Mainline Project limit at the south end of the Project is Mainline station 245+00;

2. the limit for Service Road -SRY21C- goes east to approximately Mainline station 217+80.00, beyond the Mainline project limit. The intent is to provide a continuation to the existing service road from approximately -SRY21C- station 10+00.00 to -SRY21C- station 20+00.00;

3. the existing access apron between the existing service road and the Mainline, between Mainline stations 212+00 and 216+50, shall be removed; and

4. the Design-Build Team shall mark the Project limit at the south end of the Project as Mainline station 212+00.

(c) The overall project limit on the north side of the Project is approximately 0.7 mile north of Williams Road, generally station 155+00 on the Preliminary Roadway Plans.

(d) The limit of construction along the ramps on the northern terminus of the project are as follows: for ramp -RPB55-, the project limit shall be

approximately -RPB55- station 22+58.81. For ramp -RPA55-, the project limit shall be approximately -RPA55- station 22+54.55.

3.2 The Mainline shall be designed and constructed to meet a 60-mph design speed for a level urban freeway (in an urban area with right of way constraints) designed to interstate standards, except where as specified in this RFP. A maximum grade of 4% along the Mainline is allowable.

3.3 The width of mainline travel lanes throughout the length of the Project shall be 12 feet.

3.4 Mainline superelevation shall be designed and constructed in accordance with AASHTO *A Policy on Geometric Design of Highways and Streets*, Table 3-10b (Minimum Radii for Design Superelevation Rates, Design Speeds, and e_{max}=8%). The Design-Build Team shall provide all other design criteria in the Technical Proposal.

3.5 For the transition between segments R-5777A & B and U-5713 (between the Taberna Way and the Grantham Road interchanges, and around Garner Road), the Design-Build Team shall design and construct all appropriate transitions and taper lengths in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

3.6 To the extent practicable, all lane drops and / or lane additions shall be on the outside of the Mainline.

3.7 R-5777A & B:

(a) From the south project limit to Garner Road (R-5777A & B), the typical cross section for the Mainline consists of a four-lane divided facility with a 46-foot median, which shall be cable guiderail divided.

(b) For the transition between the proposed condition and the existing condition at the southern project terminus (between Mainline station 245+00.00 and Thurman Road), the Design-Build Team shall design and construct all appropriate transitions and taper length in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

(c) The total width for outside Mainline shoulders along segment R-5777A & B shall be 12 feet of clear, usable width. The 12 feet shall be measured from edge of the travelled way to either face of barrier or shoulder breakpoint. The 12-foot minimum width shall be held, at a minimum, to the back of the gore, prior to the transition to the eight-foot shoulder width minimum.

(d) The total width for inside Mainline shoulders (median side) along segment R-5777A & B shall be six (6) feet of which 4 feet shall be full depth paved shoulder.

(e) All median features designed and constructed by the Design-Build Team shall be in accordance with all documents set forth in Section 1.1 of this Roadway Scope of Work.

(f) The inside shoulder of the bridges carrying the Mainline over Thurman Road and Taberna Way shall be governed by the requirement set forth in Section 3.9(b) of this Roadway Scope of Work.

3.8 U-5713:

(a) From Garner Road to the north project limit (U-5713), the typical cross section for the Mainline consists of a six-lane divided facility with a 22-foot paved median, which shall include a Type "T" double-faced concrete median barrier along the center.

(b) The transition from the proposed condition at the north terminus of the project to the existing condition at the south approach of the Neuse River Bridge, for both the Mainline and ramps, shall be of sufficient length in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

(c) The total width for outside Mainline shoulders along segment U-5713 shall be no less than 12 feet of clear, usable width. The 12 feet shall be measured from edge of the travelled way to either face of barrier or shoulder breakpoint. The 12-foot minimum width shall be held, at a minimum, to the back of the gore, prior to the transition to the eight-foot shoulder width minimum.

(d) The total width for inside Mainline shoulders along U-5713 shall be no less than 10 feet.

(e) All median features designed and constructed by the Design-Build Team shall be in accordance with all requirements of this RFP, and with documents set forth in Section 1.1 of this Roadway Scope of Work.

(f) The Department is aware that the distance between the interchanges of the Mainline with Airport Road and Williams Road, as shown on the Preliminary Roadway Plans, is not in compliance with the documents set forth in Section 1.1 of this Roadway Scope of Work. The Department notes that the Design-Build Team is not required to address this non-compliance. The Design-Build Team, however, shall not further reduce the distance between interchanges, ramps and ramp elements, beyond what is shown on the Preliminary Roadway Plans.

(g) The Design-Build Team shall design and construct 12-foot auxiliary lanes, in both directions, between the interchanges of the Mainline with Airport Road and Williams Road, in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work. The minimum shoulder width along this segment shall be 12 feet in accordance with Section 3.8(c) of this Roadway Scope of Work.

3.9 Mainline Bridges

(a) The Design-Build Team shall design and construct the bridges carrying the Mainline over Thurman Road, Taberna Way, Grantham Road, Airport Road, and Williams Road in accordance with the Structures Scope of Work found elsewhere in this RFP.

(b) The inside shoulder of the bridges carrying the Mainline over Thurman Road and Taberna Way shall be of sufficient width to accommodate future inside widening (toward the Mainline median) of a third 12-foot lane plus shoulder. Such future shoulders shall be designed and constructed in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work. However, at final completion the bridges carrying the Mainline over Thurman Road and Taberna Way shall provide pavement marking for the Mainline's two (2) through lanes in each direction. The future third lane and shoulder shall be considered and marked as shoulder.

3.10 Mainline Access:

(a) The Design-Build Team shall design and construct the Mainline as a full control of access facility.

(b) All access from the Mainline onto existing or proposed service roads and / or properties within the Mainline project limits shall be removed.

(c) In addition to the requirements of the preceding item 3.10(b), Mainline access at approximately Mainline stations 216+00.00, 227+35.00 and 240+25.00 shall be removed.

(d) All median crossovers within the Mainline project limits shall be removed, including the median crossover at approximately Mainline station 240+25.00.

(e) The at-grade intersection of the Mainline and Garner Road shall be removed and no access shall be provided from the Mainline onto Garner Road.

3.11 Retaining Walls:

(a) The Design-Build Team shall design and construct all required retaining walls along the Mainline, Ramps and Service Roads in accordance with the

Structures Scope for Work found elsewhere in this RFP. Traffic protection for retaining wall shall be in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

(b) The length and amount of retaining walls within the project limits shall depend the Design-Build Team's design.

(c) The Design-Build Team shall design and construct all retaining walls a minimum of ten (10) feet inside the right of way. If an exception for the offset distance between the edge of the traveled way and the retaining wall or noise wall, as the case may be, is required, the Design-Build Team shall submit such design exception request to the Department and seek Department's acceptance for such design exception prior to its implementation.

4. Interchanges

4.1 The Design-Build Team shall design and construct interchanges at the following intersections along the Mainline:

(a) Thurman Road;
(b) Taberna Way;
(c) Grantham Road;
(d) Airport Road; and
(e) Williams Road.

4.2 The Design-Build Team shall design and construct all interchanges to provide full and direct access for each crossroad as shown in the Preliminary Roadway Plans provided by the Department. Any deviation from the compact diamond interchange (CDI) design shown on the Preliminary Roadway Plans shall not increase the footprint of the project.

4.3 Alternative Technical Concepts for different types of interchanges may be submitted.

4.4 Without exception, all interchanges shall be designed and constructed with the Mainline over the intersecting roadway. No Alternative Technical Concepts proposing any portion of the Mainline under an intersecting roadway will be accepted.

4.5 Ramps:

(a) The Design-Build Team shall design and construct all ramps in accordance with AASHTO *A Policy on Geometric Design of Highways and Streets*, Table 10-1 (Guide Values for Ramp Design Speed as Related to Highway Design Speed). The maximum longitudinal grade for ramps within the U-5713 segment shall be 7%. Ramps within the R-5777A & B segment shall

comply with the documents set forth in Section 1.1 of this Roadway Scope of Work.

(b) The minimum storage length for all ramps (as defined in Section 9-1 of the NCDOT *Roadway Design Manual*) shall be the most conservative length of either the storage length required in the U-5713 & R-5777 A/B Traffic Operations Analysis Technical Memorandum or the length shown in the Preliminary Roadway Plans. In any case, the storage length shall be no less than the minimum required in Section 9-1 of the NCDOT *Roadway Design Manual*.

(c) For single-lane ramps, the minimum width for ramp lanes shall be 16 feet.

(d) In those areas where ramps have two (2) or more lanes, the minimum lane width shall be 12 feet.

(e) Minimum width for ramp shoulders shall be 4 feet for inside shoulders and 8 feet for outside shoulders.

5. Service Roads

5.1 Unless specified elsewhere in this RFP, the minimum lane width for Service Roads shall be 14 feet, except where tying into existing, in which case the appropriate transition length and taper as required by the documents set forth in Section 1.1 of this Roadway Scope of Work shall be utilized.

5.2 All Service Roads shall consist of a two-lane cross section, with one lane in each direction, and 2'-6" curb and gutter.

5.3 All Service Roads within segment R-5777A & B shall be designed and constructed to meet a minimum speed of 30 mph, except where indicated in Section 2.5(a) of this Roadway Scope of Work. Within this segment, all superelevation along Service Roads shall be in accordance with AASHTO *A Policy on Geometric Design of Highways and Streets, Table 3-8 (Minimum Radii for Design Superelevation Rates*, Design Speeds, and e_{max}=4%).

5.4 All Service Roads within segment U-5713 shall be designed and constructed to meet a minimum design speed of 25 mph, except where indicated in Section 2.5(a) of this Roadway Scope of Work. Within this segment, all superelevation along Service Roads shall be in accordance with AASHTO *A Policy on Geometric Design of Highways and Streets, Table 3-8 (Minimum Radii for Design Superelevation Rates*, Design Speeds, and e_{max}=4%).

5.4a The Design-Build Team shall do an evaluation for the need of glare screens and provide recommendations for mitigation. Glare screens shall be installed as required by the NCDOT Design Manual. Methodology of installation shall be

consistent with the design for the area (i.e. guardrail mounted versus barrier mounted).

5.5 Service Road -SRY21C- (southeast quadrant of the Mainline / Thurman Road interchange): The construction limit for Service Road -SRY21C- starts approximately 0. 5 mile east of the Mainline reconstruction limit.

5.6 Service Roads -SRY21B- and -SRY21B2- (southwest quadrant of the Mainline / Thurman Road interchange):

(a) This Service Road shall extend from Thurman Road south to approximately station 240+00.00 of the Mainline.

(b) At least one point of access shall be provided at each of the parcels within the length of the Service Road, and between the Mainline right of way and the North Carolina Railroad right of way.

(c) To the greatest extent possible, the design and construction of the Service Road shall avoid the wetlands shown on the Preliminary Roadway Plans.

(d) This Service Road shall be designed and constructed to meet a minimum design speed of 50 mph. All superelevation along this Service Road shall be in accordance with AASHTO *A Policy on Geometric Design of Highways and Streets, Table 3-8 (Minimum Radii for Design Superelevation Rates*, Design Speeds, and e_{max}=4%).

5.7 All service roads shall be designed and constructed so as to provide access to properties and side streets in accordance with NCDOT standards and guidelines.

5.8 Service Road Study:

(a) The Design-Build Team shall conduct a Service Road Study to determine whether parcels that no longer have direct access will be provided access to the service roads or will become a total take.

(b) The Design-Build Team shall submit such Service Road Study to the Division Construction Engineer and Resident Engineer for review and approval prior to finalizing the designs.

(c) If the Design-Build Team demonstrates, to the Department's sole satisfaction, that additional service road(s) are required, the design and construction of the service road(s), including all associated NEPA requirements, will be paid for as extra work in accordance with Subarticle 104-8(A) of the NCDOT Standard Specifications for Roads and Structures.

(d) If the Design-Build Team's design and construction methods require additional service road(s), the design and construction of the service road(s),

as well as associated NEPA requirements, shall be included in the Design-Build Team's lump sum bid for the entire project.

5.9 The following Service Roads shall, at a minimum, receive a 1.5" overlay with a typical normal section, and maintain the existing drainage features:

(a) Service Road on the east side of, and running parallel to, US 70, between Garner Road and Grantham Road (approximately Mainline stations 17+00.00 to 50+00.00);

(b) Service Road on the east side of, and running parallel to, US 70, between Grantham Road and Airport Road (approximately Mainline stations 54+00.00 to 87+50.00);

(c) Service Road on the east side of, and running parallel to, US 70, between Airport Road and Williams Road (approximately Mainline stations 92+00.00 to 116+50.00); and

(d) Service Road on the east side of, and running parallel to, US 70, between SR 1915 (Oak Street) and SR 1139 (Plum Street), (approximately Mainline stations 130+00.00 to 147+00.00).

6. Cross Streets

6.1 Along segments that include one single lane in each direction, the minimum lane width for Cross Streets shall be 14 feet. Along segments that include two or more lanes in either direction, the minimum lane width for Cross Streets shall be 12 feet.

6.2 The Design-Build Team shall design and construct all cross streets to meet the following minimum design speeds:

(a) Day Star Lane: 40 mph
(b) Thurman Road: 40 mph
(c) Taberna Way: 30 mph
(d) Garner Road: 40 mph
(e) Grantham Road: 40 mph
(f) Airport Road: 50 mph
(g) Williams Road: 50 mph

6.3 Day Star Lane:

(a) The Design-Build Team shall remove and replace Day Star Lane. The new Day Star Lane shall be within the Department's right of way, except for the 300 feet closest to Old Cherry Point Road, where the new Day Star Lane shall align with the existing Gibbs Road centerline.

6.4 Thurman Road:

(a) Reconstruction limits for Thurman Road shall be, at a minimum, the intersecting points with proposed Service Roads east and west of the Mainline.

(b) Between the intersecting points of Thurman Road with proposed Service Roads east and west of the Mainline, Thurman Road shall be designed and constructed with a minimum of two (2) through lanes in each direction and a raised median of variable width.

(c) At its eastern limit, past the intersecting point with proposed Service Roads -SRY21C- and -SRY21D-, Thurman Road shall transition from a 4-lane cross section to the existing 2-lane cross section. Such transition shall be of sufficient length to tie into existing and in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

(d) At the intersection of Thurman Road with the interchange ramps, turning lanes and channelization in the form of raised concrete islands shall be provided in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

6.5 Taberna Way

(a) The western reconstruction limit for Taberna Way shall be, at a minimum, the intersecting point with proposed Service Roads -SRY21AY22B- and -SRY22A-.

(b) The eastern reconstruction limit for Taberna Way shall be Old Cherry Point Road. The new alignment of Taberna Way east of the Mainline shall connect with Old Cherry Point Road. This new intersection with Old Cherry Point Road does not need to include turning lanes, unless specifically requested by the Department.

(c) Between the intersecting points of Taberna Way with proposed Service Roads east and west of the Mainline, Taberna Way shall be designed and constructed with a minimum of two (2) through lanes in each direction and raised median of variable width.

(d) At its eastern limit, past the intersecting point with proposed Service Road -SRY22D-, Taberna Way shall transition from a 4-lane cross section to a 2-lane cross section. Such transition shall be of the length required by the documents set forth in Section 1.1 of this Roadway Scope of Work.

(e) At the intersection of Taberna Way with the interchange ramps, turning lanes and channelization in the form of raised concrete islands shall be

provided in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

6.6 Garner Road

(a) The existing intersection of the Mainline and Garner Road will be eliminated, including the existing paved median cross over on the Mainline shall be removed.

(b) Garner Road, east and west of the Mainline shall be connected to the Service Roads.

(c) Reconstruction limits for Garner Road east and west of the Mainline shall be limited to new intersections with Service Roads, as generally shown in the Preliminary Roadway Plans, and match the existing condition on Garner Road.

6.7 Grantham Road:

(a) Reconstruction limit for Grantham Road west of the Mainline shall be at -Y2- station 12+00.00.

(b) Reconstruction limit for Grantham Road east of the Mainline shall be the point of intersection with the proposed Service Road north of the Mainline (-SR7-).

(c) Through the Mainline interchange, Grantham Road shall provide a minimum of two (2) through lanes in each direction.

(d) At the intersection of Grantham Road with the interchange ramps, turning lanes and channelization in the form of raised concrete islands shall be provided in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

(e) All transitions along Grantham Road from the proposed condition back into existing shall be of sufficient length to tie into existing and in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

6.8 Airport Road:

(a) Reconstruction limit for Airport Road west of the Mainline shall be approximately at -Y3- station 8+60.00.

(b) Reconstruction limit for Airport Road east of the Mainline shall be its intersection with Old Cherry Point Road. The Design-Build Team shall be required to install appropriate signage at the intersection of Airport Road and Old Cherry Point Road, however, the Design-Build Team is not

required to reconstruct or reconfigure the entire intersection, except where indicated (i.e. the west leg, or Airport Road leg, of the intersection with Old Cherry Point Road). The Design-Build Team is not required to add turning lanes to Old Cherry Point Road, unless specifically requested by the Department. In the event the Department requests turning lanes at the intersection of Old Cherry Point Road with Airport Road, such revisions to the plans, along with any additional studies required shall be paid by the Department as extra work in accordance with Subarticle 104-8(A) of the NCDOT Standard Specifications for Roads and Structures.

(c) Between the proposed Service Road west of the Mainline, going across the Mainline, and continuing to Old Cherry Point Road east of the Mainline, Airport Road shall provide two (2) through lanes in each direction.

(d) West of the Mainline, from the proposed Service Road going west to Airport Road's reconstruction limit approximately at -Y3- station 8+60.00, Airport Road shall transition into existing. Such transition shall be of sufficient length to tie into existing and shall be in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

(e) At the intersection of Airport Road with the interchange ramps, turning lanes and channelization in the form of raised concrete islands shall be provided in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

6.9 Williams Road:

(a) Reconstruction limit for Williams Road west of the Mainline shall be approximately at -Y4- station 11+18.00.

(b) Reconstruction limit for Williams Road east of the Mainline shall be its intersection with Old Cherry Point Road. The Design-Build Team shall be required to install appropriate signage at the intersection of Williams Road and Old Cherry Point Road, however, the Design-Build Team is not required to reconstruct or reconfigure the entire intersection except where indicated (i.e. the west leg, or Williams Road leg, of the intersection with Old Cherry Point Road). The Design-Build Team is not required to add turning lanes to Old Cherry Point Road, unless specifically requested by the Department. In the event the Department requests turning lanes at the intersection of Old Cherry Point Road with Williams Road, such revisions to the plans, along with any additional studies required shall be paid by the Department as extra work in accordance with Subarticle 104-8(A) of the NCDOT Standard Specifications for Roads and Structures.

(c) Between the proposed Service Road west of the Mainline, going across the Mainline, and continuing to Old Cherry Point Road east of the Mainline,

Williams Road shall provide a minimum of two (2) through lanes in each direction.

(d) West of the Mainline, from the proposed Service Road going west to Williams Road's reconstruction limit approximately at -Y4- station 11+18.00, Williams Road shall transition into existing. Such transition shall be of sufficient length to tie into existing and shall be in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

(e) At the intersection of Williams Road with the interchange ramps, turning lanes and channelization in the form of raised concrete islands shall be provided in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

(f) The Design-Build Team shall design and construct a full-movement access at the shopping center property located at quadrant A of the Mainline / -Y4- interchange, at -Y4- Station 17+15.00, as shown in the Preliminary Roadway Plans provided by the Department. All movements shall be designed to accommodate a WB-65 design vehicle.

(g) The Design-Build Team shall also provide, at a minimum, a left-out movement at -Y4- Station 15+80.00 Left to accommodate traffic exiting from behind the shopping center property in an easterly direction onto -Y4-. The left-out movement shall be designed to accommodate a WB-65 design vehicle. The Design-Build Team may provide a full-movement intersection at this location if it is able to prove that a full-movement intersection at this location will perform as good or better than the configuration shown in the Preliminary Roadway Plans provided by the Department.

(h) In lieu of providing a full-movement access into the shopping center property at -Y4- Station 17+15.00 Left as detailed in 6.9(f) above, the Design-Build Team may provide a full-movement intersection for the shopping center from -SR4-. All movements shall be designed to accommodate a WB-65 design vehicle. This option shall meet the following conditions:

(i) This option shall only be designed and constructed if the Design-Build Team is able to prove that this option will perform as good or better than the configuration shown in the Preliminary Roadway Plans provided by the Department.

(ii) Relocating the shopping center full-access intersection from -Y4- Station 17+15.00 to -SR4- shall not increase the footprint of -SR4- and the currently proposed right of way at this location, as

shown on the Preliminary Roadway Plans provided by the Department, and shall not reduce the number of parking spaces.

(iii) The Design-Build Team shall provide, at a minimum, a left-out movement at -Y4- Station 15+80.00 Left to accommodate traffic exiting the shopping center property in an easterly direction on -Y4-. The Design-Build Team may provide a full-movement intersection at this location if it is able to prove that a full-movement intersection at this location will perform as good or better than the configuration shown in the Preliminary Roadway Plans provided by the Department.

(iv) This option shall be able to accommodate a WB-65 design vehicle for all movements.

(v) The Design-Build Team may elect to realign -SR3_ALT- to meet -SR4- at -Y4- Station 18+42.00 if it is able to prove that this realignment will perform as good or better than the configuration shown in the Preliminary Roadway Plans provided by the Department.

6.10 Elder Street:

(a) The existing access from Elder Street into the northbound lanes of the Mainline (i.e. pavement between Plum Street and the Mainline providing access onto Elder Street) shall be removed.

(b) East of the Mainline, Elder Street shall end at its intersection with Plum Street. No work on Elder Street shall be required on the west side of the Mainline.

(c) No bridge carrying the Mainline over Elder Street will be required at this location. The Design-Build Team may design and construct the Mainline to match the existing US 70 vertical alignment at this location.

7. Pedestrian Accommodations

7.1 All existing sidewalk impacted by the Project shall be replaced in kind and in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work.

7.2 Without exception, the following Cross Streets must include sidewalk along both sides:

(a) Grantham Road;
(b) Airport Road; and
(c) Williams Road.

7.3 Alternative Technical Concepts that eliminate sidewalks at the locations stated in Item 7.2 will be rejected.

7.4 All new sidewalk within the Project limits shall only be added at those locations shown on the Preliminary Roadway Plans, and shall be designed and constructed in accordance with the documents set forth in Section 1.1 of this Roadway Scope of Work. All new sidewalk shall have a minimum width of 5 feet plus a 2-foot utility strip between the sidewalk and back of curb. Berm widths for sidewalk areas shall be the 10-foot standard width.

7.5 Sidewalk transitions, from proposed sidewalk width to existing sidewalk width, shall be a minimum of 50 feet.

8. Additional Requirements

8.1 Due to right of way constraints, the Design-Build Team will be allowed to design and construct minimum ditch widths for the facility functional classification.

8.2 Unless noted otherwise elsewhere in this RFP, all bridge rail offsets shall be the greater of 1) the bridge rail offset as indicated in the NCDOT Roadway Design Manual, 2) the approach roadway paved shoulder width, or 3) the offset required to achieve stopping sight distance (maximum 12-foot). Narrower bridge rail offsets based on bridge length will not be allowed.

8.3 For all intersection design modifications, the Design-Build Team shall provide a traffic analysis that adheres to the July 1, 2015 NCDOT Congestion Management Capacity Analysis Guidelines for the Department's review and acceptance.

8.4 At all intersections with restricted movements impacted by the Design-Build Team's design and / or construction methods, excluding resurfacing or overlays, the Design-Build Team shall provide five-inch keyed-in concrete monolithic channelization islands, regardless of the island dimensions. (Reference Roadway Standard Drawing No. 852.01.)

8.5 The mainline is a full control of access facility. The Design-Build Team shall bring to the Division's attention any deviations from the proposed control of access shown on the Preliminary Roadway Plans provided by the Department. The proposed right of way and / or control of access limits may deviate in proximity to cultural, historic, or otherwise protected landmarks, including cemeteries, to eliminate / minimize impacts. Prior to negotiating right of way, easement and / or control of access with property owners, the Department shall accept the Right of Way Plans developed by the Design-Build Team.

8.6 Prior to installation, the Design-Build Team shall be responsible for coordinating with, and obtaining approval from, the NCDOT for the control of access fence placement. The Design Build Team shall be responsible for installation of woven wire control of access fence as noted below:

(a) Throughout the construction limits, excluding areas that consist solely of pavement marking obliterations / revisions, the Design-Build Team shall remove and dispose of all existing control of access fence, and install new control of access fence.

(b) The Design-Build Team shall replace all control of access fence damaged during construction.

(c) The Design-Build Team shall install all missing control of access fence.

8.7 Except as required elsewhere in this RFP and / or to eliminate a design exception, the Design-Build Team shall not further impact any cultural, historical or otherwise protected landmark or topographic feature beyond that shown on the Preliminary Roadway Plans provided by the Department.

8.8 The Design-Build Team shall provide milled rumble strips along the mainline outside and median paved shoulders, including ramp and loop terminals, and acceleration, deceleration and auxiliary lanes, in accordance with the NCDOT Roadway Standard Drawings No. 665.01.

8.9 For all bridges, the Design-Build Team shall submit vertical and horizontal clearance design calculations at all critical points. The Design-Build Team shall submit post construction survey points for the aforementioned critical points that verify construction adhered to the vertical and horizontal clearances accepted by the Department. The Design-Build Team shall be responsible for all costs associated with correcting vertical and horizontal clearances resulting from any construction variation from the design accepted by the Department.

8.10 Roundabouts:

(a) The design and construction of roundabouts will be permitted at all intersections identified as warranting traffic signals, per the Traffic Signals Recommendations (Revised) memorandum by Regional Traffic Safety Engineer Bailey Harden, PE, dated March 21, 2019. All other intersections within the project limits not warranting traffic signals shall be stop-controlled.

(b) All roundabout designs within the project limits shall have no more than one (1) circulating lane, with the exception that right turn lanes may be added for an approach if traffic capacity requires such addition. Any right-turn lanes shall be yield lanes. Slip-lanes shall not be permitted. The Design-Build Team shall use gore striping (also referred to as vane islands) if right turn lanes are added to any roundabout design, in accordance with TRB Report 672 *Roundabouts: An Information Guide*, Second Edition, Exhibit 6-37. Teardrop designs are preferred at ramp intersections.

(c) In the event the Design-Build Team elects to employ roundabout designs at ramp intersections, the Design-Build Team shall design and construct roundabouts at both ramp intersections for the same interchange (WB and EB US 70). Combinations of roundabouts and traffic signals at ramp intersections for a single interchange will not be permitted. A maximum of two roundabouts per -Y- line at the locations specified in this Section 8.10(c) are permitted, except at Williams Road (-Y4-), where a maximum of three roundabouts are permitted only if it is proven to function equally or better than the configuration shown in the Preliminary Roadway Plans provided by the Department. Such design shall also be in compliance with the requirements Section 6.9 (Williams Road) in this Roadway Scope of Work, and Section 8.10(b) above.

(d) The length of all bridges along US 70 shall be able to accommodate, at a minimum, the typical cross section along all -Y- lines shown in the Preliminary Roadway Plans provided by the Department; meet all the project commitments included in Section H (*Project* Commitments) of the Type III (Ground Disturbing) Categorical Exclusion Action for U-5713 / R-5777A & B approved by FHWA on July 2, 2018; and the requirements of this RFP.

(e) An ATC will not be required to replace signal-controlled intersections with roundabouts. The Department reserves the right to require modifications to the roundabout designs if deemed necessary.

9. Noise Abatement

The Department will provide an approved Traffic Noise Report (TNR) and associated Preliminary Noise Wall Recommendation Memorandum that is based on the Department's preliminary design. The Design-Build Team shall evaluate the entire Project and develop the Design Noise Report (DNR) based on the plans developed by the Design-Build Team, regardless of changes to the Department's preliminary design. The DNR shall be developed in accordance with the NCDOT 2016 *Traffic Noise Policy* and the NCDOT 2016 *Traffic Noise Manual*; and be reviewed and accepted by NCDOT. Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall include all design and construction costs for all sound barrier walls required by the accepted DNR, as well as all costs associated with performing any additional geotechnical investigations necessary to design the foundations, in the lump sum price bid for the entire project. However, the Design-Build Team will not be required to include any designs associated with the proposed sound barrier walls in the Technical Proposal. Prequalification under Discipline Code 441 shall be required for the firm developing the DNR.

The Design-Build Team is cautioned that the TNR and Preliminary Noise Wall Recommendation Memorandum are provided to show the general location of potential walls. Thus, as with all information provided by the Department, the TNR and Preliminary Noise Wall Recommendation Memorandum are provided for informational purposes only

and; the Department will not honor any requests for additional contract time or compensation for any variations between the approved TNR and the approved DNR.

The Department will ballot all benefited receptors to determine which sound barrier walls recommended in the accepted DNR will be constructed. The Design-Build Team shall (1) develop and provide the information required by the Department to complete the balloting process, and (2) attend and / or speak at all balloting meetings and workshops. The Department will require four months to complete the balloting process. The Department will not honor any requests for additional contract time or compensation for the sound barrier wall construction unless the aforementioned four-month timeframe is exceeded. If time were granted, it would only be for that time exceeding the four-month period, which shall begin on the date the Department accepts the DNR developed by the Design-Build Team. The Design-Build shall not construct any sound barrier walls until the balloting process has been completed by the Department.

In accordance with Subarticle 104-8(A) of the 2018 Standard Specifications for Roads and Structures, if the accepted DNR and balloting process require more than 50,000 square feet (sf) of sound barrier wall, the amount over 50,000 sf will be paid for as extra work at the unit price of $40.00 per square foot. All work tasks required to design and construct the additional sound barrier walls, including but not limited to traffic control, pavement, drainage, concrete barrier, geotechnical investigation and earthwork shall be considered inclusive in the aforementioned unit price. The amount of extra work shall be determined by deducting all additional sound barrier wall square footage required as a result of horizontal and / or vertical alignment changes to the Preliminary Roadway Plans provided by the Department from the accepted DNR and balloting process sound barrier wall total square footage.

The Design-Build Team shall only credit the Department the construction cost of all sound barrier walls eliminated by the balloting process. The construction costs of all sound barrier walls eliminated solely by the balloting process shall be deducted from the lump sum amount bid for the entire project.

The Design-Build Team shall design and construct all proposed sound barrier walls, within the U-5713 / R-5777A & B project limits, to accommodate the future widening of one additional 12-foot lane and a six-foot buffer as generally shown in the Preliminary Roadway Maps provided by the Department, without requiring any relocations / adjustments. Such future widening shall be considered to be along the R-5777A & B segment toward the Mainline median. Sound barrier walls shown in the TNR or in the Design-Build Team's DNR outside of the U-5713 / R-5777A & B project limits shall not be constructed by the Design-Build Team and will be constructed under a separate contract. (R-5777C). At all sound barrier walls, the Design-Build Team shall provide 1) a four-foot berm between the wall and fill / cut slopes steeper than 6:1 and 2) a parallel concrete ditch at locations where the final grade slopes toward the wall.

To satisfy the FHWA's Abatement Measure Reporting requirements, the Design-Build Team shall prepare and concurrently submit a summary of the sound barrier walls to be

constructed on the project with the final sound barrier wall working drawings submittal. The Design-Build Team shall submit the sound barrier wall summary directly to the NCDOT Traffic Noise and Air Quality Group and include the information noted in Title 23 Code of Federal Regulations Part 772 Section 772.13(f), including but not limited to overall cost and unit cost per square foot.

10. Driveway Access

10.1 Excluding undeveloped properties and / or those properties identified as a total take, as determined by the Service Road Study, the Design-Build Team shall design and construct a minimum of one driveway per parcel.

10.2 The Design-Build Team shall design and construct all driveways in accordance with the most recent version of the NCDOT P*olicy on Street and Driveway Access to North Carolina Highways*, and with the following minimum requirements:

(a) The Design-Build Team shall provide horizontal and vertical alignments for all driveways that require 100 feet or longer to tie to existing.

(b) Excluding grades required to tie to an existing limiting condition, the maximum driveway grade shall be 10.0%.

(c) For shoulder sections, the minimum driveway turnout for residential and commercial properties shall be 16’-0” and 24’-0”, respectively, or the existing width, whichever is greater.

(d) For curb and gutter sections, the minimum driveway turnout for residential and commercial properties shall be 20’-0” and 28’-0”, respectively, or the existing width, whichever is greater.

ENVIRONMENTAL PERMITS SCOPE OF WORK (4-16-2018)

1. General

The Design-Build Team shall be responsible for preparing all documents necessary for the Department to obtain the environmental permits required for the project construction. Permit applications shall be required for the US Army Corps of Engineers (USACE) Section 404 Permit, the NC Department of Environmental Quality, Division of Water Resources (NCDWR) Section 401 Water Quality Certification, Neuse Riparian Buffer Authorization. Depending upon impacts, a CAMA Major Development permit or Consistency Determination from the Division of Coastal Management may be required.

The Design-Build Team shall not begin ground-disturbing activities in jurisdictional resources until the environmental permits have been issued.

The Design-Build Team shall not conduct ground-disturbing activities until archaeological surveys are completed. These surveys will be provided to the Design Build Team when complete.

The Design-Build Team shall coordinate with the Division Construction Engineer or designee to determine if a Preconstruction Notification (PCN) is required for the Nationwide Permit No. 6. If a PCN is required, the Design-Build Team shall submit all necessary documents and forms to the Division Construction Engineer or designee for submittal to the appropriate agencies and shall not perform any geotechnical investigative work within the jurisdictional resource(s) requiring a PCN prior to obtaining the required approval. If a PCN is not required, the Design-Build Team may proceed with geotechnical investigations inside and outside jurisdictional resources, provided all of the Nationwide Permit No. 6 General Conditions are adhered to.

The Design-Build Team may begin construction activities prior to obtaining the aforementioned permits provided that (1) the Department has reviewed and accepted the appropriate design submittal(s); (2) the Department is notified in writing and provides written approval prior to beginning work; and (3) such activities are outside jurisdictional resources.

The Department will allow no direct contact between the Design-Build Team and representatives of the environmental agencies. No contact between the Design-Build Team and the environmental agencies shall be allowed either by phone, e-mail or in person, without representatives of the Division present. A representative from the Division shall be included on all correspondence.

Projects U-5713, R-5777A and R-5777B are not in the Merger Process. On non-merger projects, the Department has committed to coordination efforts with the environmental agencies. Thus, the Design-Build Team shall participate and present information for an interagency hydraulic design review meeting and an interagency permit impacts meeting. These meetings shall adhere to the Concurrence Point 4B and Concurrence Point 4C requirements of the Merger Process used by the environmental agencies and the Department to obtain environmental permits. Specifically, the Design-Build Team shall follow the appropriate details on the Merger information website referenced below:

https://connect.ncdot.gov/resources/Environmental/Pages/Merger.aspx

Any variation in the Department's proposed design and/or construction methods that nullify any decisions reached between the Department and the environmental agencies; and / or require additional coordination with the environmental agencies shall be the sole responsibility of the Design-Build Team. The Department will not allow any contract time extensions or compensation associated with this additional coordination.

Unless stipulated otherwise in the Technical Proposal, the Department will schedule the 4B and 4C Meetings for January 2020 and April 2020, 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 noted otherwise elsewhere 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 interagency / concurrence meetings. The Design-Build Team 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 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.

2. Permit Application Process and Timeframe for all Permits except the Nationwide Permit No. 6 for Geotechnical Investigations

It shall be the Design-Build Team's responsibility to acquire information and prepare permit drawings that reflect the impacts and minimization efforts resulting from the Merger Process and from the project as designed by the Design-Build Team. Further, it shall be the Design-Build Team's responsibility to provide these permit impact sheets (drawings) depicting the design and construction details to the Department as part of the permit application. The Design-Build Team shall be responsible for developing the permit application for all jurisdictional impacts. The permit application shall include all utility relocations required by the project. At a minimum, the permit application shall consist of the following:

- Cover Letter
- Completed forms (Section 404 ENG 4345, PCN, etc.) appropriate for impacts
- Division of Mitigation Services Acceptance Letter
- Minutes from the interagency hydraulic design review meeting and the interagency permit impacts meeting
- Stormwater Management Plan
- Permit drawings with and without contours and, if necessary, utility drawings with and without contours
- Wetland Permit Impact Summary Sheets
- Half-size plans

- Mitigation Plan (if required by the Design-Build Team's design and / or construction methods)

The Department will re-verify and update, as needed, the required environmental data that expires prior to permit issuance. These include, but are not limited to, federally protected species, re-verification of wetland jurisdictional areas, historic and archaeological sites, and 303d (impaired) streams.

Excluding the Nationwide Permit No. 6 for geotechnical investigations, the Design-Build Team shall submit one permit application for the entire project. The Design-Build Team shall not submit multiple applications to develop a "staged permitting" process to expedite construction activities in a phased fashion.

Direct coordination between the Design-Build Team, the Division Construction Engineer or designee, Resident Engineer, DEO and EAU shall be necessary to ensure proper permit application development. Upon completion of the draft permit application, the Design-Build Team shall concurrently forward the permit application to the Division review and approval. After all revisions are complete, the Department will subsequently forward the permit application to the appropriate environmental agencies.

Any temporary construction measures, including de-watering, construction access, etc. shall be addressed in the permit application. Impacts that result from so-called temporary measures may not be judged to be temporary impacts by the environmental agencies. These issues shall be addressed by the Design-Build Team and reviewed by the Division prior to the interagency hydraulic design review meeting and the interagency permit impacts meeting; and resolved with the environmental agencies during the aforementioned meetings.

The Design-Build Team shall clearly indicate the location and impacts of haul roads and utility relocations in jurisdictional areas. The Design-Build Team shall also identify all proposed borrow and waste sites. Further, the Design-Build Team shall describe the construction methods for all structures. The temporary impact descriptions (haul roads, utility relocations, work bridges, etc.) shall include restoration plans, schedules and disposal plans. The aforementioned information, descriptions and details shall be presented during the interagency hydraulic design review meeting and the interagency permit impacts meeting, and be included in the permit application.

The NCDOT hereby commits to ensuring, to the greatest extent practicable, that the footprint of the impacts in areas under the jurisdiction of the Federal Clean Water Act will not be increased during the Design-Build effort. In accordance with the Department of Water Resources' NCG 010000, all fill material shall be stabilized and maintained to prevent sediment from entering adjacent waters or wetlands. The Design-Build Team shall be responsible for ensuring that the design and construction of the project will not impair the movement of aquatic life.

Requests made for modifications to the permits obtained by the Design-Build Team shall only be allowed if the Engineer determines it to be in the best interest of the Department and shall be strongly discouraged. The Design-Build Team shall not take an iterative approach to hydraulic design issues. Prior to submitting the permit application, the hydraulic design shall be complete and accepted by the Department.

The Design-Build Team should expect it to take up to 11 months to accurately and adequately complete all designs necessary for the permit application, submit the permit application to the Department, and obtain permit approvals from the environmental agencies. Environmental agency review time will be approximately 120 days from receipt of a "complete" permit application. No requests for additional contract time or compensation will be allowed if the permits are obtained within this 11-month period. The Department will consider requests for contract time extensions for obtaining the permits only if the Design-Build Team has pursued the work with due diligence, the delay is beyond the Team's control, and the 11-month period has been exceeded. If time were granted it would be only for that time exceeding the 11-month period. This 11-month period is considered to begin on the Date of Availability as noted elsewhere in the RFP.

The Design-Build Team is advised herein that the approximate timeframes listed above for the NCDCM, NCDWR, and the USACE to review a permit application begin only after a fully complete and 100% accurate submittal.

3. Mitigation Responsibilities of the Design-Build Team

As required by the NEPA Process and the USACE / EPA Section 404(b)(1) Guidelines, to offset potential wetland and stream impacts, the Department has reviewed the roadway project corridor for potential on-site mitigation opportunities. Since no on-site mitigation opportunities were identified, the Department will acquire the compensatory mitigation for unavoidable impacts to wetlands and surface waters due to the project construction from the NC Division of Mitigation Services. This amount of mitigation acquired will be based on impacts, as identified in the U-5713, R-5777A and R-5777B preliminary designs.

Any changes proposed by the Design-Build Team to any design or construction details provided by the Department shall be approved by the Department prior to being submitted to the environmental agencies for their approval.

Should additional jurisdictional impacts result from revised design and / or construction methods, suitable compensatory mitigation for wetlands and surface waters shall be the sole responsibility of the Design-Build Team. Therefore, it is important to note that additional mitigation will have to be approved by the environmental agencies and such approval shall require, at a minimum, the preparation and approval of a Mitigation Plan before permits are approved. To mitigate for these additional jurisdictional impacts, the Design-Build Team shall be responsible for all costs associated with acquiring suitable mitigation. Construction of any on-site mitigation shall be performed by a contractor that has successfully constructed similar on-site mitigation. In the absence of suitable on-site mitigation, the Design-Build Team shall be responsible for acquiring all additional mitigation from the NC Division of Mitigation Services or an approved compensatory mitigation banking source.

The Design-Build Team shall analyze all new areas to be impacted that have not been analyzed during the NEPA Process, including but not limited to borrow sites, waste sites, haul roads and staging areas that are located outside the project right of way. This analysis shall include performing all environmental assessments. These assessments shall require the Design-Build Team to engage the services of an NCDOT prequalified environmental consultant to conduct a full environmental investigation to include, but not be limited to, Federally Listed Threatened and

Endangered Species, wetlands, streams, avoidance and minimization in jurisdictional areas, compensatory mitigation, and historical, archaeological, and cultural resources surveys in these areas. The environmental consultant shall obtain concurrence through the Division, from the U.S. Fish & Wildlife Service and/or National Marine Fisheries Service, to document compliance with Section 7 of the *Endangered Species Act* for those species requiring such concurrence. In addition, the Design-Build Team shall identify additional mitigation required, identify the amount of time beyond the aforementioned 11-month period, and fulfill all other requirements that the environmental agencies impose to obtain the permit. Any contract time extensions resulting from additional environmental assessments required by the Design-Build Team's design and / or construction methods impacting areas outside those previously analyzed through the NEPA Process shall be solely at the Department's discretion.

4. Commitments

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize wetland and surface water impacts; and to provide full compensatory mitigation of all remaining wetland and surface water impacts. Avoidance measures were taken during the planning and NEPA Process and minimization measures were incorporated as part of the preliminary design provided by the Department. The Design-Build Team shall incorporate these avoidance and minimization features, plus any minimization identified during the interagency hydraulic design review meeting and the interagency permit impacts meeting, into the design and / or construction methods at no additional cost or contract time extension.

All work by the Design-Build Team must be accomplished in strict compliance with the plans submitted with the permit application and in compliance with all conditions of the permits and certifications issued by the environmental agencies. The Design-Build Team shall provide each of its contractors and / or agents associated with the construction or maintenance of this project with a copy of the permits and certifications.

Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall strictly adhere to these commitments, as well as others, including but not limited to, those included in the U-5713, R-5777A and R-5777B environmental documents, all permits, all interagency meetings, and all site visits.

If the Design-Build Team discovers any previously undocumented historic or archaeological resources while conducting the authorized work, they shall immediately suspend activities in that area and notify, in writing, the NCDOT Archaeology Group Leader and NCDOT Project Development Engineer, as listed below, who will initiate any required State / Federal coordination after a timely initial assessment. The Design-Build Team shall also immediately notify a representative from the Division. Inadvertent or accidental discovery of human remains shall be handled in accordance with North Carolina General Statutes 65 and 70. All questions regarding these discoveries shall be addressed to Mr. Matthew Wilkerson, NCDOT Archaeology Group Leader at (919) 707-6089, or the Division Construction Engineer or designee.

The Design-Build Team shall coordinate with the Division and the NCDOT Archaeological Group to comply with the following environmental commitment.

New Bern Battlefield Earthworks (CV2055)

Project activities within the existing right of way on the east side of U.S. 70 will impact the earthworks, however a finding of no adverse effect will be established when the commitments detailed below are fulfilled:

1. Construction activities will not impact any land outside (east of) the existing ROW (all land within 35 meters (115 feet) of the U.S. 70 pavement).
2. Archaeological survey will be conducted within the existing ROW from the earthworks north to a small drainage valley, a distance of approximately 273 meters (900 feet). The survey will consist of the excavation of shovel tests at a 15-meter (50-foot) interval within the existing ROW.
3. A metal detector survey will be conducted within the existing ROW along the east side of U.S. 70 from the earthworks north to a small drainage valley. The metal detector survey will be followed by shovel tests placed at each positive reading.
4. The earthworks will be examined by excavation of a trench across it. The cross section will be recorded with a measured drawing and photographs.
5. The results of the survey/testing will be provided in a report that will be reviewed by NCDOT and HPO/OSA staff.
6. No staging or storage of equipment and materials will occur within the National Register boundary and corresponding vicinity of the newly identified earthworks section.
7. Tree protection will be installed along the ROW during construction.
8. To ensure avoidance of the earthworks, protective fencing will be installed defining its boundary. A member of the NCDOT Archaeology Group (Caleb Smith,919-707-6086) will assist with the installation of this protective fencing.

On-going Archaeological Surveys

NCDOT will conduct the required archaeological survey for R-5777AB in several areas where high archaeological potential has been identified along each side of U.S. 70.

Northern long-eared bat (NLEB) (Myotis septentrionalis)

The USFWS has developed a programmatic biological opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), USACE, and NCDOT for NLEB in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for NLEB is “May Affect, Likely to Adversely Affect”. The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Craven County, where TIP U-5713 and R-5777A & B are located. This level of incidental take is authorized from the effective date of a final listing determination through April 30, 2020.

ITS SCOPE OF WORK (4-18-19)

GENERAL

Design, furnish, and install new ITS devices along the project. Remove and stockpile ITS devices impacted by the construction of this project. Integrate the new and relocated CCTVs and new DMS devices into the existing computer and network hardware and software at the NCDOT Division 2 Traffic Operations Center (TOC) ***located at 1037 W.H. Smith Blvd, Greenville, NC 27835,*** the Craven County 911 Center ***located in New Bern***, and the Statewide Traffic Operations Center (STOC) located at 1636 Gold Star Drive, Raleigh, NC 27607. Major items of work include, but are not limited to, the following:

- Removal and stockpiling of one (1) analog CCTV assembly and wireless radio communications equipment
- Removal and stockpiling of one (1) DMS assembly and its supporting structure and wireless radio communication equipment
- Design, procurement, installation, integration and testing of five (5) New High Definition (IP Based) Closed Circuit Television Camera (CCTV) assemblies
- Design, procurement, installation, integration and testing of three (3) New Dynamic Message Signs (DMS) assemblies and supporting pedestal type structures
- Procurement and installation of junction boxes
- Design, procurement, and installation of power distribution system and equipment for each new ITS device including service poles
- Coordination with and procurement of Electrical service from appropriate power company including the required permits and inspections by "authorities having jurisdiction", and the payment of permit fees and service-delivery charges
- Installation and testing of state-furnished cellular modems for the portable CCTV and portable CMS near Williams Street interchange.
- Reinstallation and testing of wireless radio communications equipment, antennas and cabling assemblies.

Furnish and install guardrail to protect the ITS devices, as required.

Determine the location of each ITS device, obtain the Engineer's approval of the locations, install and implement test procedures, and integrate the devices with the Division 2 Traffic Operations Center (TOC) ***located at 1037 W.H. Smith Blvd, Greenville, NC 27835,*** the Craven County 911 Center ***located in New Bern***, and the Statewide Traffic Operations Center (STOC) located at 1636 Gold Star Drive, Raleigh, NC 27607.

Prior to any underground work, locate existing utilities, communications cable, power cable, and adjust work activities to protect these facilities. Immediately cease work and notify the Engineer and the affected owners if damage to existing utilities occurs. Repair damages to existing utilities, communications cable, and / or power cable at no cost to the Department.

Traveler information about conditions on the Neuse River and Trent River Bridges is vital to the safety of the motoring public. Therefore, 10 days prior to removal of the existing Front Access

DMS near Williams Road and the CCTV near Elder Street, the Design-Build Team shall install and make operational a westbound portable CMS and a portable CCTV with a Department-furnished cell modems to perform the operations and functions of the removed DMS and CCTV.

Additionally, provide six (6) portable CCTV cameras for traffic control usage at the direction of the Engineer. Portable CCTV locations will be provided by the Engineer at the time of deployment.

To provide advanced information about conditions within the construction limits, the westbound DMS in this project, proposed to be located east of the Thurman Road, shall be installed and made operational from the Division 2 TOC and from the STOC 30 days prior to the start of construction.

Perform all work in accordance with the *Dynamic Message Sign* and *High Definition CCTV Metal Pole With CCTV Lowering System Field Equipment* Project Special Provisions found elsewhere in this RFP, the 2018 NCDOT *Standard Specifications for Roads and Structures* and the 2018 NCDOT *Roadway Standard Drawings.*

Refer to the Traffic Signals and Signal Communications Scope of Work for additional ITS, Signal Communication Plans, Junction Box and Conduit requirements.

INTERMEDIATE CONTRACT TIMES

Intermediate Contract Time #6 for Failure to Maintain Traveler Information for Westbound Traffic After the Existing DMS is Removed.

During construction, the Design-Build Team shall maintain traveler information for westbound traffic at location west of Williams Road after the existing DMS near Williams Road is removed. The Design-Build Team shall notify the Engineer a minimum of seven days prior to all proposed disruptions in their ability to maintain traveler information service.

Liquidated Damages for Intermediate Contract Time #8 for Failure to Maintain Traveler Information for Westbound Traffic After the Existing DMS is Removed are $10,000.00 per day or any portion thereof.

STOCKPILING AND DISPOSAL OF ITS COMPONENTS

For purposes of this ITS scope, stockpile shall mean delivery of material to a location designated by the Engineer, and the Department retains ownership of the materials. Deliver stockpiled equipment to the NCDOT Division 2 Traffic Services Office ***located at 1712 North Memorial Drive, Greenville, NC 27835***.

For purposes of this ITS scope, dispose shall mean the contractor takes ownership of the material and may salvage it or lawfully discard it according to the applicable laws governing the material.

The Design Build Team shall remove and stockpile the DMS assembly from Williams Road with its support structure and field equipment cabinet (including, but not limited to interior components) at the NCDOT Division 2 Traffic Services Office located at 1712 North Memorial Drive, Greenville, NC 27835.

The Design-Build Team shall remove and stockpile the analog CCTV assembly west of Williams Road with its field equipment cabinet (including, but not limited to, interior components like transceivers, media converters, encoders, and decoders) at the NCDOT Division 2 Traffic Services Office located at 1712 North Memorial Drive, Greenville, NC 27835.

Wireless radio components, antennas and repeaters shall be inventoried (i.e. brand, model, etc.) and tested in the presence of the engineer prior to being taken out of service. The same equipment shall be preserved by the contractor for reuse at the new DMS and CCTV locations near Williams Road. The Design Build Team shall dispose of all removed DMS foundations and associated materials, all electrical service components/hardware, all camera poles, all repeater poles, and all electric service wood poles including associated hardware, guy assemblies and grounding materials.

DESIGN REQUIREMENTS

COMMUNICATIONS

Center-to-Field communication with new ITS devices networks will be through a state furnished leased communications line via the hub cabinet detailed in the *Traffic Signals and signal Communications Scope of Work.*

The Design Build Team shall terminate the drop cable in an interconnect center in the field equipment cabinet. The Design Build Team shall connect ITS devices to the fiber-optic network via field Ethernet switches in the field equipment cabinet. The Design Build Team shall provide the field Ethernet switches to the Engineer for network configuration at least 6 weeks prior to their scheduled installation.

CCTV CAMERAS

The Design-Build Team shall strategically locate and install five (5) new CCTV cameras on metal poles with lowering devices at a location and height which provide optimum viewing as defined in the *High Definition CCTV Metal Pole With CCTV Lowering System and Field Equipment* Project Special Provision found elsewhere in this RFP.

Install one CCTV camera assembly at each of the following locations:

- Williams Road (including wireless radio communications back to the Craven County 911 Center)
- Airport Road
- Grantham Road
- Taberna Way
- Thurman Road

Furnish site surveys, including but not limited to bucket truck surveys or UAV (a.k.a. drone), to ensure camera coverage areas are acceptable, and provide information to the Engineer to obtain written approval. Determine the exact location of each CCTV camera, obtain the Engineer's

written approval of the locations, and install the cameras. All components required for the CCTV installations shall be new.

Share power service with nearby traffic signal and CCTV if feasible. If not feasible, install new electrical service equipment at each CCTV location. Furnish and install new CCTV equipment as defined in the *High Definition CCTV Metal Pole With CCTV Lowering System and Field Equipment* Project Special Provision found elsewhere in this RFP. Comply with the National Electrical Code (NEC), the National Electrical Safety Code (NESC), the Standard Specifications, the Project Special Provisions, and all local ordinances. All work involving electrical service shall be coordinated with the appropriate utility company and the Engineer. Obtain all necessary permits, coordinate inspections, obtain approval of the installation, and pay all fees and construction costs including any utility company charges for service delivery.

Furnish and install new equipment cabinets as defined in the *High Definition CCTV Metal Pole With CCTV Lowering System and Field Equipment* Project Special Provision found elsewhere in this RFP. All components required for the CCTV relocations shall be new.

DMS

The Design-Build Team shall strategically locate and install three (3) new pedestal mount DMSs. Furnish and install new DMS and associated equipment as defined in the *Dynamic Message Sign* Project Special Provision found elsewhere in this RFP.

Install one new DMS at each of the following locations:

- US 70 eastbound approximately 2 miles west of the Trent River Bridge
- US 70 westbound west of Williams Road ramps onto US 70 (including wireless radio communications back to the Craven County 911 Center).
- US 70 westbound approximately 5-7 miles east of Thurman Road

The DMSs installed under this project shall be selected from the most current version of the NCDOT ITS & Signals Qualified Products List.

Determine the exact location of the DMSs by coordinating with the Engineer. Obtain the Engineer’s written approval of the locations and install the DMSs.

Install new electrical service equipment at all new DMS locations. Comply with the National Electrical Code (NEC), the National Electrical Safety Code (NESC), the Standard Specifications, the Project Special Provisions, and all local ordinances. All work involving electrical service shall be coordinated with the appropriate utility company and the Engineer. Obtain all necessary permits, coordinate inspections, obtain approval of the installation, and pay all fees and construction cost including utility company charge for service delivery.

MATERIALS & CONSTRUCTION

Furnish and install new materials and hardware that meet the requirements of the 2018 *NCDOT Standard Specifications for Roads and Structures* and this Scope of Work.

Furnish and install dynamic message signs from NCDOT 2018 Qualified Products List (QPL) to receive approval for use on the project. Catalog cuts will not be required for items on the QPL.

The QPL website is:

https://connect.ncdot.gov/resources/safety/Pages/ITS-and-Signals-Qualified-Products.aspx

CCTV CAMERAS

Install each CCTV camera on a new metal pole with a CCTV lowering system that can be operated manually and/or with a power tool.

Install the following minimum equipment in each CCTV equipment cabinet:

- Power equipment including power supplies, circuit breakers, surge protectors, and other related materials.
- Fiber optic cable interconnect center with patch panel and fiber optic jumpers
- Field Ethernet switch

In the CCTV equipment cabinet near Williams Road, the Design Build Team shall reestablish wireless radio communications with the Craven County 911 Center. Additional repeaters and system reprogramming may be needed.

Perform all work in accordance with the High Definition *CCTV Metal Pole With CCTV Lowering System and* Field Equipment Project Special Provision found elsewhere in this RFP, the 2018 NCDOT Standard Specifications for Roads and Structures and the 2018 NCDOT Roadway Standard Drawings.

DYNAMIC MESSAGE SIGNS

Install DMSs on a single metal pedestal type structure with ladders, ladder safety cages, and walkways leading to the DMS maintenance access door. The bottom of each DMSs shall be 25 feet higher than the highest point of the roadway. Install DMS equipment in an approved equipment cabinet mounted on the structure. Install the following minimum equipment in each DMS equipment cabinet:

- DMS controller
- UPS and power equipment including power supplies, circuit breakers, surge protectors, and other related materials.
- Fiber optic cable interconnect center with patch panel and fiber optic jumpers
- Field Ethernet switch

In the DMS equipment cabinet near Williams Road, the Design Build Team shall reinstall the wireless radio system and reestablish wireless radio communications with the Craven County 911 Center. Additional repeaters and system reprogramming may be needed.

Perform all work in accordance with the *Dynamic Message Sign* Project Special Provisions found elsewhere in this RFP, the 2018 NCDOT *Standard Specifications for Roads and Structures* and the 2018 NCDOT *Roadway Standard Drawings.*

Integration and operation of new devices from the 911 Center will require the existing wireless radio system to be re-aimed and reprogrammed to receive signals from the new CCTV and DMS locations at or nearest to Williams Road. Additional repeaters may also be necessary to relay the signal to the existing wireless radio system. Accessing the existing antenna and radio system located on the bridge will require a bridge closure for the duration of reprogramming process. The Design-Build Team will coordinate all bridge closures with the Division Traffic Engineer, the STOC and the 911 Center.

Reinstall the existing wireless radios and communications equipment at the Williams Road CCTV and the westbound DMS nearest to the Williams Road interchange. Configure and reestablish wireless radio communications with these new devices to the existing wireless radio system at the 911 Center.

JUNCTION BOXES

Furnish and install standard junction boxes (pull boxes) with all necessary hardware in accordance with Sections 1098-5 and 1716 of the 2018 NCDOT *Standard Specifications for Roads and Structures*. Provide standard junction boxes with minimum inside dimensions of 16”(l) x 10”(w) x 10”(d) for electrical service. Provide junction box covers with standard “Electric” logo, pull slots and stainless steel pins.

At each 12-fiber drop to the 144-fiber trunk cable that is on or along the shoulder of US 70, the Design-Build Team shall furnish and install new *Special Oversized Heavy Duty Junction Boxes with Steel Covers* that meet the requirements of Sections 1098-5 and 1716 of the 2018 NCDOT *Standard Specifications for Roads and Structures* and the **ASHT0 H20 rating requirements** with minimum inside dimensions of 36”(l) x 24”(w) x 36”(d).

At each 12-fiber drop to the 144-fiber trunk cable that is **not** on or along the shoulder of US 70, the Design-Build team shall furnish and install new *Oversized Heavy Duty Junction Boxes with a Standard Cover* that meet the requirements of Sections 1098-5 and 1716 of the 2018 NCDOT *Standard Specifications for Roads and Structures* and the **ASHT0 H20 rating requirements** with minimum inside dimensions of 30”(l) x 15”(w) x 24”(d).

Store 20’ of spare 12-drop cable in oversized heavy duty junction boxes and in ITS field equipment cabinets, as needed. Store a minimum of 30’ of spare 144-fiber trunk cable in special oversized heavy duty junction boxes, as needed.

WOOD POLES

Furnish and install wood poles, with all necessary grounding systems and hardware necessary in accordance with Section 1720 of the 2018 NCDOT *Standard Specifications for Roads and Structures*. Provide wood poles sized as necessary for the intended application.

Use 40’ Class 4 wood poles for overhead electrical service drops.

Use 6” x 6” x 8’ treated wood posts for underground electrical service.

Furnish and install related items of work including but not limited to risers with weatherhead or heat shrink tubing, guys, anchors and all necessary hardware in accordance with Section 1720 of the 2018 NCDOT *Standard Specifications for Roads and Structures*.

METAL POLES AND CCTV LOWERING SYSTEM

METAL POLES

The Design-Build Team shall provide and install CCTV metal poles, with grounding systems and necessary hardware in accordance with the *High Definition CCTV Metal Pole With CCTV Lowering System and Field Equipment* Project Special Provision found elsewhere in this RFP, the 2018 NCDOT *Standard Specifications for Roads and Structures* and the 2018 NCDOT *Roadway Standard Drawings.*

The work covered by this section includes requirements for the design, fabrication, and installation of custom-designed metal poles for CCTV cameras with camera lowering systems for IP (Internet Protocol) cameras, all with custom-designed foundations.

The Design-Build Team shall provide designs of the completed assemblies with hardware that equals or exceeds *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals* 6th Edition, 2013 (hereafter called 6th Edition AASHTO), including the latest interim revisions.

Standard Drawings for metal poles and metal pole foundations are available on the Department’s website:

https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx

CCTV CAMERA LOWERING SYSTEM

The Design-Build Team shall provide a CCTV camera lowering system for a digital, IP based cameras as an integral part of the CCTV metal pole. The lowering system will consist of a support arm, camera connection box, and all necessary cabling and wiring for installation.

PORTABLE CCTV CAMERA LOWERING DEVICE

The Design-Build Team shall provide a portable CCTV lowering device to operate the lowering system manually (e.g. hand crank) and with a power tool.

ELECTRICAL SERVICE

Furnish and install new electrical services rated 100 Amps for overhead service or 200 Amps for underground service, 240/120 VAC service drops for the each new ITS device. Furnish and install related items of work, including, but not limited to standard size junction boxes, risers, guy assemblies, and wood poles with all necessary hardware in accordance with Section 1700 of the 2018 NCDOT *Standard Specifications for Roads and Structures*. (Reference the Utilities

Coordination Scope of Work found elsewhere in the RFP for additional coordination / approval requirements and payment responsibilities)

CODES AND STANDARDS

All ITS materials shall conform to the latest version of the applicable standards of the National Electrical Code (NEC), National Electric Manufacturer's Association (NEMA), the Underwriters' Laboratories, Inc. (UL), the Electronic Industries Association (EIA), the International Municipal Signal Association (IMSA), and the National Electrical Safety Code (NESC). All materials and workmanship must conform to the requirements of the NESC, standards of the American Society for Testing and Materials (ASTM); American National Standards Institute (ANSI). Comply with all federal laws, state laws, and city codes in accordance with the 2018 NCDOT *Standard Specifications for Roads and Structures*.

Network equipment shall conform to the NCDOT and NC Statewide IT Policies and Standards as described at **http://it.nc.gov/statewide-resources/policies.** The architecture of the IT modules must be approved by NCDOT IT and the NC Office of Information Technology architecture groups.

SUBMITTALS

Submit a 60% set of preliminary plans and 100% set of project plans, including specifications for materials, catalog cuts, and installation and testing requirements for review and acceptance by the Department. A 100% set of plans and specifications shall be sealed and signed by a NC registered professional engineer. Acceptance of plans and specifications by the Department/ITS & Signals does not relieve the contractor of his/her responsibility and liability for inadequate or unacceptable designs. The registered engineer who is sealing and signing the plans and specification, along with his/her firm, is ultimately responsible for all designs and the construction resulting from the design plans and specifications. No construction of the ITS devices and / or communications cable shall begin until the Department/ITS Section has accepted the 100% plans and specifications. Provide the Department with a minimum of 10 working days for each review.

QUALIFIED PRODUCTS LIST

Submit a listing of items on the NCDOT 2018 Qualified Products List (QPL) to receive approval for use on the project. Catalog cuts will not be required for items on the QPL. The QPL website is:

https://connect.ncdot.gov/resources/safety/Pages/ITS-and-Signals-Qualified-Products.aspx

MAINTENANCE AND REPAIR REQUIREMENTS

The Design-Build Team shall maintain and repair all ITS components within the project scope, including but not limited to, ITS devices, ITS conduit system, and all related ITS components, from the beginning of construction until the final acceptance of the project by the NCDOT. After acceptance of the project, the Design-Build Team shall be responsible for repairing the system due to faulty materials or workmanship in accordance with the *Twelve Month Guarantee* Project

Special Provision found elsewhere in this RFP, or longer if the Design-Build extends the aforementioned warranty period.

PLAN OF RECORD DOCUMENTATION

Prepare and submit to the Department Plan of Record (POR) documentation that depicts the conduit and ITS device locations. Submit final POR documentation in electronic and hard copy format for Department approval. Provide electronic plans in MicroStation (latest release in use by the Department) format on CD. Submit hard copy documentation on 22 x 34 inch plan sheets. POR documentation shall include the final location and depth of conduits, wiring external to the cabinets, locations of splice enclosures, junction box locations, and SMFO cable terminations. Include in the POR documentation real world coordinates for all ITS devices, splice enclosures, junction boxes, and equipment cabinets installed or utilized under this project. Provide the coordinates in feet units using the North Carolina State Plane coordinate system (1983 North American Datum also known as NAD ’83). Furnish coordinates that do not deviate more than 1.7 feet in the horizontal plane and 3.3 feet in the vertical plane. Global positioning system (GPS) equipment able to obtain the coordinate data within these tolerances may be used.

TESTING

Develop test plans and procedures for the new CCTV cameras and DMSs and all associated components and submit to the Engineer for review and approval.

Upon completion of the CCTV and DMS installations, conduct unit tests according to the approved test plan and procedures. Provide all necessary test equipment.

In case of failures and substandard performance, the Design-Build Team shall identify the cause, repair or replace the faulty parts and components and repeat the test. If the problem persists, the entire unit causing the problem shall be replaced prior to retest.

After successful completion of all unit tests, submit the test reports along with the record of repairs and part replacements to the Engineer.

After completion of all unit tests, a final system test shall be performed to prove and demonstrate the ability to access and operate all devices from the NCDOT Division 2 Traffic Operations Center (TOC) ***located at 1037 W.H. Smith Blvd, Greenville, NC 27835,*** the Craven County 911 Center ***located in New Bern***, and the Statewide Traffic Operations Center (STOC) ***located at 1636 Gold Star Drive, Raleigh, NC 27607.***

INTEGRATION

A. Integration with STOC: This task will require configuration of the CCTV Camera and DMS application servers to add the new devices in the perspective applications’ databases. Program each devices’ cellular communications parameter such as IP address in the applicable server and verify command and control from the operators’ workstation. Coordinate these activities with the State ITS Operations Engineer, Steve Wardle, at (919) 825-2600.

B. Integration with Division 2 TOC: This task will require configuration of the DMS application server to add the new DMSs in the application’s databases. Program each DMS’s cellular communications parameter such as IP address in the DMS server and verify

command and control from the operators' workstation. Integration of the new CCTV cameras will consist of accessing each camera's web-interface using a state-approved web browser and adding the devise URL to the Favorite folder. The description of the URL shall be the location of the camera. Coordinate these activities with the Division Traffic Engineer, Steve Hamilton, at (252) 439-2816.

C. Integration with the Craven County 911 Center: There is no configuration or programming required at the 911 center as all the conditions are pre-existing. Verify command and control of affected devices to ensure correct configuration of field devices. Coordinate this work through the Division Traffic Engineer, Steve Hamilton.

PAVEMENT MANAGEMENT SCOPE OF WORK (12-10-2018)

**** NOTE ** The Department will not consider Alternative Technical Concepts that provide an alternate pavement design.**

The pavement design for the US 70 mainline travel lanes, mainline median shoulders and mainline outside shoulders shall consist of one of the following alternates:

Alternate 1	**Alternate 2**
3.0” S9.5C	3.0” S9.5C
3.5” I19.0C	3.0” I19.0C
7.0” B25.0C	4.0” B25.0C
	8.0” ABC

The mainline travel lanes, mainline median shoulder and mainline outside shoulder pavement design chosen shall be used throughout the limits noted above. The Design-Build Team shall specify the pavement alternate to be used in the Technical Proposal.

Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall mill the existing US 70 mainline pavement, including travel lanes and structurally acceptable paved shoulders, to be retained to a depth of 2.5”, replace with 2.5” I19.0C and resurface with a minimum of 3” S9.5C. (Reference the Roadway Scope of Work found elsewhere in this RFP). The Design-Build Team shall remove and dispose of / recycle the existing US 70 right turn lane /left turn lane pavement structures within the footprint of the permanent mainline travel lanes or full depth paved shoulder to the top of the soil subgrade.

Other pavement designs for this project are listed in the Tables 1 and 2 below:

Table 1

Line (U-5713)	**Surface**	**Intermediate**	**Base**	**ABC**
-RPAY2-, -RPBY2-, -RPCY2-, -RPDY2-, -RPAY3-, -RPBY3-, -RPCY3-, -RPDY3-, -RPAY4-, -RPBY4-, -RPCY4-, -RPDY4-,	3.0” S9.5C	4.0” I19.0C	4.0” B25.0C	-
SR 1124 (Grantham Road, -Y2-), SR 1131 (Airport Road, -Y3-), SR 1167 (Williams Road, -Y4-)	3.0” S9.5B	4.0” I19.0C	4.0” B25.0C	-
-SR1-, -SR2-, -SR3_ALT-, -SR4-, -SR5-, -SR6-	3.0” S9.5B	4.0” I19.0C	4.0” B25.0C	-
Other Service Roads	3.0” S9.5B	-	-	8.0” *

* Use prime coat at normal application rate.

Table 2

Line (R-5777A/R-5777B)	**Surface**	**Intermediate**	**Base**	**ABC**
-Y21RPA-, -Y21RPB-, -Y21RPC-, -Y21RPD-, -Y22RPA-, -Y22RPB-, -Y22RPC-, -Y22RPD-,	3.0” S9.5C	4.0” I19.0C	4.0” B25.0C	-
SR 1116 (Thurman Road, -Y21-), Taberna Way (-Y22-)	3.0” S9.5B	4.0” I19.0C	4.0” B25.0C	-
-SRY21C-, -SRY21B-, -SRY21D-, -SRY21C2-, -SRY21AY22B-, -SPY22A-, -SPY22D-	3.0” S9.5B	4.0” I19.0C	4.0” B25.0C	-
Other Service Roads	3.0” S9.5B	-	-	8.0” *

* Use prime coat at normal application rate.

For the -Y- Lines, ramps, loops and service road pavement designs noted in the table above, the Design-Build Team may substitute an ABC layer for an asphalt base course layer. If such an alternative is proposed, the thickness of the ABC layer, used as a substitute for the asphalt base course layer, shall be equal to twice the proposed asphalt base course layer thickness specified for the roadway. If an asphalt surface course is placed directly on the ABC layer, the Design-Build Team shall apply prime coat.

The Design-Build Team shall maintain the same pavement design throughout the -Y- Line, ramps, loops, and service road construction limits. In the Technical Proposal, the Design-Build Team shall specify the base option chosen (ABC or asphalt) for all -Y- Lines, ramps, loops, and service roads. The Design-Build Team may substitute an asphalt base course layer for an ABC layer, as described above, for tie-ins and narrow widening.

Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall resurface the existing pavement of all -Y- Lines, ramps, loops and service roads with a minimum depth that equals the full thikness of surface course as provided in **Table 1** and **Table 2** above, with the exception of those Service Roads segments referred to in Section 5.9 of the Roadway Scope of Work, which shall, at a minimum, receive a 1.5” overlay with a typical normal cross section and maintain the existing drainage features (reference the Roadway Scope of Work found elsewhere in this RFP).

Throughout the construction limits that consist solely of pavement marking obliterations and / or revisions, the Design-Build Team shall uniformly overlay the existing pavement with a minimum pavement depth that equals half the full thickness of the surface course as provided in the tables above.

On all ramps and loops, the adjacent through lane pavement design shall extend to the back of the gore (12-foot width).

Longitudinal joints of all surface course layers shall not be located in the final traffic pattern wheel path. If applicable, the Design-Build Team shall indicate in the Technical Proposal where all underlying longitudinal joints will be located and demonstrate how the underlying longitudinal joint location will minimize reflective cracking.

Unless noted otherwise elsewhere in this RFP, the minimum narrow widened width shall be six feet. The minimum narrow widened width may be reduced to four feet only if the Design-Build Team demonstrates that their equipment properly compacts narrow widening and obtains prior Department written approval. Tapers that tie proposed pavement to existing pavement are excluded from the narrow widening requirements noted above.

In areas where the existing paved shoulders are proposed to be incorporated into a permanent travel lane or full depth paved shoulder, the Design-Build Team shall be responsible for evaluating the existing paved shoulder regarding its suitability for carrying the projected traffic volumes. In the event that the existing paved shoulder is found to be inadequate, the Design-Build Team shall be responsible for upgrading the existing paved shoulder to an acceptable level or replacing the existing paved shoulder. The Design-Build Team shall submit their evaluation and proposed use

of existing paved shoulders to the Division Construction Engineer or designee Unit for review and acceptance or rejection.

Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall pave from 1) the edge of all paved shoulders to the face of all single face barrier / guardrail, excluding median locations that the NCDOT Roadway Standard Drawings do not require paving to the face of guardrail; 2) from the edge of all paved shoulders to the edge of all expressway / shoulder berm gutter; and 3) from the edge of all paved shoulders to the face of proposed retaining walls and sound barrier walls located on the outside shoulder with 6" of ABC (or 4" B25.0C), a split seal and at least two lifts of surface course. If a split seal is not used, the ABC pavement design shall require prime coat at the normal application rate. In these areas, the Design-Build Team's installation of ABC or black base shall be consistent with the pavement type for the specific roadway. As an alternative to the above pavement design for paving the shoulders to the face of the aforementioned features, the Design-Build Team may use the adjacent travel lane pavement design. In addition, the Design-Build Team shall place at least 6" of ABC or 4" B25.0C under all single face barrier, expressway / shoulder berm gutter and curb and gutter.

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 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 and 8" ABC with prime coat, or 2.0" S9.5B and 6" ABC without prime coat.
- For existing concrete driveways, use 6" jointed concrete reinforced with woven wire mesh.

The Design-Build Team shall be responsible for the design of all temporary pavements and for the evaluation of existing shoulders and roadways regarding their suitability for carrying traffic during construction, if necessary. In the event that the existing shoulders and / or roadways are found to be inadequate for the proposed temporary traffic volumes and duration, the Design-Build Team shall be responsible for upgrading the pavement to an acceptable level. Temporary pavements shall be designed in accordance with the most recent version of the NCDOT *Pavement Design Procedure*. Temporary pavement designs and associated calculations 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.

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

Shoulder drains, including the maintenance of existing shoulder drains, will not be required.

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.