

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

FINAL REQUEST FOR PROPOSALS,
INSTRUCTIONS TO PROPOSERS

I-95, U.S. 70, & U.S. 74 Broadband Infrastructure Project
TIP R-5777D, I-5986C, HO-0002A, B & C
February 5, 2021

DATE AND TIME OF PROPOSAL SUBMISSION: **March 12, 2021 at 4:00 PM Local Time**
DATE AND TIME OF PREFERRED PROCUREMENT TRACK AND PREFERRED PROPOSER
ANNOUNCEMENT: **March 26, 2021 at 2:00 PM Local Time**

CONTRACT ID: C204556

WBS ELEMENT NO. 44648.3.5, 47532.3.4, 49456.3.2, 49456.3.3 & 49456.3.4

FEDERAL-AID NO. 0070235, 0095071, 0074233, 0074234 & 0074235

COUNTIES: Northampton, Halifax, Nash, Wilson, Wake, Johnston, Harnett, Cumberland,
Robeson, Wayne, Jones, Lenoir, Craven, Carteret, Brunswick, Columbus,
Scotland, Richmond, Anson, Union, Mecklenburg, Gaston, Cleveland,
Rutherford, Polk, Henderson & Buncombe

ROUTE NO. I-95, U.S. 70 (future I-42) & U.S. 74

MILES: 600

LOCATION: I-95 (SC border-to-VA border), U.S. 70 from I-40 to the Morehead City Port
& U.S. 74 from I-40 near Wilmington to Asheville

TYPE OF WORK: DESIGN-BUILD, OPERATIONS, MAINTENANCE, AND
COMMERCIALIZATION 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 PREFERRED PROCUREMENT TRACK AND PREFERRED PROPOSER ANNOUNCEMENT, REGARDLESS OF FUNDING SOURCES.

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GLOSSARY

The Glossary below provides the meaning of each of the acronyms in this document. Definitions are defined within the document.

(“ADA”) – Americans with Disabilities Act of 1990

(“ANSI”) – American National Standards Institute

(“APWA”) – American Public Works Association

(“ASTM”) – The American Society for Testing and Materials

(“C&G”) – Clearing and Grubbing

(“C/A”) – Control of Access

(“CA”) – Critical Area

(“CCPCUA”) – Central Coastal Plain Capacity Use Area

(“CLNA”) – Coastal Carolina Railroad

(“CORESI”) – Corridor Opportunities For Rural Efficiency and Safety Improvement

(“CV”) – Connected Vehicle

(“CWD”) – Clean Water Diversions

(“DB”) – Design Build

(“DBE”) – Disadvantaged Business Enterprise

(“DEO”) – Division Environmental Officer

(“DIT”) – Department of Information Technology

(“DMS”) – Dynamic Message Signs

(“DSSW”) – North Carolina Design Standards in Sensitive Watersheds

(“DWM”) – Division of Waste Management

(“E&SC”) – Erosion and Sediment Control

(“EAU”) – Department’s Environmental Analysis Unit

(“ECAP”) – Environment Coordination and Permitting Group

(“EIA”) – The Electronic Industries Association

(“FG”) – Final Grade

(“FHWA”) – The Federal Highway Administration

(“GEC”) – General Engineering Consultant

(“GPS”) – Global Positioning System

(“IAMS”) – ITS Asset Management System

(“IMP”) – Incident Management Plan

(“IMSA”) – The International Municipal Signal Association

- (“**INFRA**”) – The Infrastructure for Rebuilding America Grant Program
- (“**INMS**”) – ITS Network Monitoring Systems
- (“**ITS**”) – Intelligent Transportation Systems
- (“**IWOMS**”) – ITS Work Order Management System
- (“**JB**”) – Junction Boxes
- (“**LCN**”) – Lane Closure Notice
- (“**MUTCD**”) – FHWA Manual on Uniform Traffic Control Devices
- (“**NCDOT**”) – North Carolina Department of Transportation
- (“**NCDWR**”) – NC Department of Environmental Quality, Division of Water Resources
- (“**NCSMUTCD**”) – NCDOT Supplement to the Manual on Uniform Traffic Control Devices
- (“**NEC**”) – National Electrical Code
- (“**NEIS**”) – National Electrical Installation Standards
- (“**NEPA**”) – National Environmental Policy Act
- (“**NESC**”) – National Electrical Safety Code
- (“**NOVs**”) – Environmental Protection Agency Notice of Violations
- (“**NPV**”) – Net Present Value
- (“**NRHP**”) – National Register of Historic Places
- (“**O&M**”) – Operations and Maintenance
- (“**OMC**”) – Operations, Maintenance and Commercialization
- (“**OSHA**”) – Occupational Safety and Health Administration
- (“**P3**”) – Public Private Partnership
- (“**PCMS**”) – Portable Changeable Message Signs
- (“**PEF**”) – Private Engineering Firm
- (“**PFM**”) – Pay-For-Performance
- (“**PM**”) – Preventive Maintenance
- (“**PMP**”) – Project Management Plan
- (“**POR**”) – Plan of Record
- (“**PPE**”) – Personal Protective Equipment
- (“**PSF**”) – Professional Services Firm
- (“**QA/QC**”) – Quality Assurance and Quality Control
- (“**QPL**”) – Qualified Products List
- (“**R/W**”) – Right of Way

- (“**REU**”) – Roadside Environmental Unit
- (“**RFC**”) – Release for Construction
- (“**RFP**”) – Request for Proposals
- (“**RFQ**”) – Request for Qualifications
- (“**RM**”) – Responsive maintenance
- (“**RSU**”) – Roadside Unit
- (“**RWIS**”) – Remote Weather Information Systems
- (“**SLA**”) – Service Level Agreement
- (“**STOC**”) – Statewide Transportation Operations Center
- (“**SWPPP**”) – Storm Water Pollution Prevention Plan
- (“**TMP**”) – Transportation Management Plan
- (“**TMPC**”) – Transportation Management Phasing Concept
- (“**TOP**”) – Traffic Operations Plan
- (“**TRC**”) – Technical Review Committee
- (“**TSMO**”) – Transportation Systems Management and Operations
- (“**TSO**”) – Traffic Systems Operations
- (“**TTC**”) – Temporary Traffic Control
- (“**TTCP**”) – Temporary Traffic Control Plans
- (“**UAS**”) – Unmanned Aircraft Systems
- (“**UDPA**”) – The North Carolina Underground Damage Prevention Act
- (“**UL**”) – The Underwriters' Laboratories, Inc.
- (“**UPS**”) – Uninterruptable Power Supplies
- (“**USACE**”) – US Army Corps of Engineers
- (“**USDOT**”) – The United States Department of Transportation
- (“**URAs**”) – Utility Relocation Agreements

PART A: PROCUREMENT SCHEDULE AND BOND/SECURITY REQUIREMENTS

A-1.1. Procurement Schedule

The Department reserves the right to make changes or alterations to this schedule.

The Department is committed to procuring the I-95, U.S. 70 and U.S. 74 Broadband scope of work, as described in this RFP. The Department is also committed to the contract timeframe communicated with Proposers to date.

Activity	Date
First Industry Draft RFP issued to Short-listed Teams	June 19, 2020
Proposers Questions due on First Industry Draft RFP	July 10, 2020
First 1-on-1 Meetings with Short-listed Teams	July 21-22, 2020
Second Industry Draft RFP and Draft Project Agreements issued to Short-listed Teams	August 21, 2020
Proposers Questions due on Second Industry Draft RFP and Draft Project Agreements	September 7, 2020
Second Meeting with Short-listed Teams	September 16-17, 2020
Department Issues Third Industry Draft to Short-Listed Teams	November 20, 2020
Proposers Questions due on Third Industry Draft RFP and Draft Project Agreements	December 8, 2020
Third Meeting with Short-Listed Teams	December 16-17, 2020
Department Issues Fourth Industry Draft RFP and Draft Project Agreements	January 29, 2021
Department Issues Final RFP to Short-listed Teams	February 5, 2021
Proposal Submissions Due	March 12, 2021
Department Issues Clarification Requests to Short-Listed Teams If Required by NCDOT	March 16, 2021
1-on-1 Meetings with Teams that Submit Compliant Proposals If Required by NCDOT	March 18-19, 2021
Clarification Responses due from Proposers If Required by NCDOT	March 22, 2021

Preferred Procurement Track and Preferred Bidder Selection	March 26, 2021
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Depending on Procurement Track selected, additional information may be updated to fulfill NCDOT’s reporting requirements to the Joint Legislative Transportation and Oversight Committee, as required under applicable Law. All events and dates set forth in the Procurement Schedule and elsewhere in the ITP are subject to change in NCDOT’s sole discretion, and the Proposer shall be solely responsible for monitoring the Procurement Schedule for any such changes.

All times listed in the Procurement Schedule and elsewhere in the RFP are for local, Eastern Time in Raleigh, North Carolina for the applicable date. If any of the time periods set forth in the Procurement Schedule or this ITP fall on a non-Business Day, then such period shall automatically be extended to the next Business Day.

A-1.2. Bond/Security Requirements

The proposed bid bond, payment bond and performance bond requirements are set out below, per Procurement Track. Each of the bid bond, payment bond and performance bond must be substantially in the form described in the subsections further below.

Bond/Security Requirements – Procurement Track 1a

- Bid bond: 5% of the DB Contract Price
- Payment bond: 100% of the DB Contract Price
- Performance bond: 100% of the DB Contract Price
- In addition to the other requirements set forth herein, the payment and performance bonds furnished and maintained by the Contractor with respect to the DB scope of work will comply with the requirements of N.C. Gen. Stat. § 44A-26

Bond/Security Requirements – Procurement Track 1b

- Bid bond: \$2 million
- Beginning on the Closing Date and continuing each year of the Term thereafter, Contractor will furnish and maintain annual payment and performance bonds each in an amount equal to 200% of the total O&M price for such year shown in Appendix Part D – OMC: Price Proposal for O&M and Commercialization, as such amount may be adjusted to reflect any reevaluation of long-term O&M services and pricing undertaken pursuant to Part E-1.1 of the RFP

Bond/Security Requirements – Procurement Track 2

- Bid bond: 7% of the DB Contract Price
- Beginning on the Closing Date and continuing until the all requirements of the form of payment and performance bonds are met, the Developer will furnish and maintain payment and performance bonds each in an amount equal to 100% of the DB Contract Price for the delivery of the DB scope of work. In addition, beginning on the Closing Date and continuing each year of the Term thereafter, the Developer will furnish and maintain annual

payment and performance bonds each in an amount equal to 200% of the total O&M price for such year shown in Appendix Part G – P3: Price Proposal for O&M and Commercialization, as such amount may be adjusted to reflect any reevaluation of long-term O&M services and pricing undertaken pursuant to Part F-1.2 of the RFP

- In addition to the other requirements set forth herein, the payment and performance bonds furnished and maintained by the Developer with respect to the DB scope of work will comply with the requirements of N.C. Gen. Stat. § 44A-26

Form of Bid Bond/Security Requirements

- Procurement Track 1a: Please refer to Appendix Part H – DB: Form of Bid Bond
- Procurement Track 1b: Please refer to Appendix Part I – OMC: Form of Bid Bond
- Procurement Track 1b: Please refer to Appendix Part J – P3: Form of Bid Bond

Form of Payment and Performance Bond/Security Requirements

Proposers can access the form of Payment and Performance Bonds here:

<https://connect.ncdot.gov/letting/Pages/Central-Letting-Forms.aspx>

PART B: GENERAL INFORMATION FOR PROPOSERS

B-1.1. Introduction

In this Request for Proposals (“RFP”), the North Carolina Department of Transportation (“NCDOT” or the “Department”), an agency of the State of North Carolina (“State”), is soliciting Proposals from Proposers desiring to develop the I-95/U.S. 70/U.S. 74 Broadband Infrastructure Project described herein (the “Project”) through an arrangement that may include one or more contracts entered into by the Proposer(s) and NCDOT.

B-1.2. Project Objectives

In order to maximize value to the citizens and motorists of North Carolina, the Department will be using an innovative procurement approach and has defined the following objectives for the Project:

- Creating a fiber backbone for NCDOT’s current and future technology needs;
- Expanding the State’s fiber network for universal access, including rural areas, schools, police, emergency response, and economic development; and
- Unlocking commercialization opportunities from excess capacity to share with the private sector.

The Project objectives above have been informed by NCDOT’s successful Applications to the United States Department of Transportation (“USDOT”) Infrastructure for Rebuilding America Grant (“INFRA”) program. The Application for I-95 and U.S. 70 was completed in November 2017 and can be found here:

https://connect.ncdot.gov/resources/I95-US70-Improvements/Documents/A00_Narrative.pdf

The Application for U.S. 74 (U.S. 74 Corridor Opportunities for Rural Efficiency and Safety Improvement (“CORESI”)) was completed in February 2020 and can be found here:

<https://connect.ncdot.gov/resources/INFRA2020-US74/Documents/Narrative%20US%2074%20NCDOT.pdf>

A key component of the Project’s second objective (expanding the State’s fiber network for universal access, including rural areas, schools, police, emergency response, and economic development) can be found on page 20 of the I-95/U.S. 70 INFRA Grant Application. The Application states that the Project aims to leverage “transportation infrastructure to support education and economic development in North Carolina’s rural communities.” Furthermore, this is also demonstrated on page 3 of the CORESI INFRA Grant Application with the following statement: “...[T]he installation of fiber optic cabling along the corridor would significantly augment the state’s broadband network access to rural regions. This would provide significant societal benefits to these outlying rural regions and in areas with pockets of disadvantaged communities.”

As a result of the Project, NCDOT will be expanding the State’s fiber network for universal access by providing the private sector with the opportunity to commercialize fiber assets in rural communities. Furthermore, as a result of the installation of fiber for State use, NCDOT will be able to partner with State Agencies such as the North Carolina Department of Information

Technology (“NCDIT”) in an effort to provide fiber access to rural communities where the commercialization potential for the private sector is not feasible.

B-1.3. Procurement Process Overview

This RFP is issued in accordance with the provisions of Section 136-18(39) and 136-18(46) of the North Carolina General Statutes (the “North Carolina Statutes”) and other applicable provisions of law. The purpose of this RFP is to solicit responses from experienced firms interested in providing services outlined in the Project Scope Overview. Throughout this RFP, the terms Contractor, Proposer, Bidder, Team, Firm and Company are synonymous and may include consortia, partnerships, joint ventures and others. Furthermore, throughout this RFP, the terms NCDOT, Department, Engineer and State are synonymous.

NCDOT is using an innovative procurement approach to maximize value to the North Carolinians and other motorists. In addition to a Design Build (“DB”) procurement, NCDOT is procuring Operations, Maintenance and Commercialization (“OMC”) services. NCDOT is procuring the DB and OMC services according to a two-track procurement process.

NCDOT has not selected a Preferred Procurement Track prior to the issuance of this RFP. NCDOT intends to use Proposal responses to this RFP to select a Preferred Procurement Track and make its Proposer selection.

The Department invites Proposers to submit their responses for one or more of the Procurement Tracks as described below:

Procurement Track 1: DB and OMC services procured separately

- **Procurement Track 1a - DB:** For Proposers that are interested in submitting their RFP response addressing only the DB Services;
- **Procurement Track 1b - OMC:** For Proposers that are interested in submitting their RFP response addressing only the OMC Services;

Procurement Track 2 – Public Private Partnership (“P3”): For Proposers that are interested in submitting their RFP response for addressing the Design, Build, Finance, Operate, Maintain and Commercialization Services.

The Department will use this RFP process to select either:

- A single DB Proposer from Track 1a and a single OMC Proposer from Track 1b, or
- A single P3 Proposer from Track 2.

After issuance of this first industry draft RFP to Proposers, the Department will hold 1-on-1 meetings with Proposers and issue future iterations of the RFP (if deemed necessary). After Proposals have been reviewed, concluding the RFP process, NCDOT will determine the Preferred Procurement Track and Preferred Proposer(s). Please refer to Part C-1.2 for the Preferred Procurement Track selection criteria.

The Department reserves the right to terminate any Procurement Track in the Department’s sole discretion. Without limitation, the Department may elect to terminate, in the Department’s sole discretion, Procurement Track 1b without terminating Procurement Track 1a.

B-1.4. Project Scope Overview

Depending on the Procurement Track, the Project scope will entail the installation of fiber infrastructure, operation, maintenance, and commercialization of broadband assets over the Project term. A brief summary of each of the scope items is included in the text below. Detailed scope and evaluation criteria for the DB, OMC and P3 Procurement Tracks can be found in Part D, E and F, respectively. The Preferred Procurement Track selection criteria can be found in Part C.

Figure 1: Project Scope Overview



Proposers must take note that the Project scope of work includes installing fiber and conduit along the complete I-95/U.S. 70 network and only Network Segment 1 and 3 of the U.S. 74 network. U.S. 74 Segment 2 (between Charlotte and Monroe) will not be a part of the Project scope of work. Alternative proposals including Segment 2 are not permitted. Proposers must only provide proposals for the scope of work as indicated in Part D, E, and F for DB, OMC, and P3 Proposers, respectively.

Following Preferred Proposer(s) and Preferred Procurement Track selection, successful Proposer(s) may engage NCDOT regarding the installation of commercialization broadband capacity in Segment 2. NCDOT is open to providing successful Proposer(s) with access to its R/W for Segment 2, subject to ownership and access terms in the Operations, Maintenance and Commercialization Agreement Terms (Appendix Part B – OMC) and Comprehensive Agreement Terms (Appendix Part E – P3). The specifics with respect to the location/route of the Segment 2

installation may be discussed with the Department following Preferred Proposer(s) and Preferred Procurement Track selection. Furthermore, any Segment 2 installation must be self-funded by the Proposer, including any permit costs. NCDOT is open to supporting the successful Proposer(s) with permitting and other requirements from a non-financial perspective to the extent permitted by the Department and North Carolina Law.

Design-Build

The DB scope of the Project includes installation of broadband infrastructure, including 306 miles of fiber, along I-95 from the South Carolina state line to the Virginia state line and along I-95 and U.S. 70, future I-42, corridors in Robeson, Cumberland, Harnett, Johnston, Wilson, Nash, Halifax and Northampton counties and Wake, Johnston, Wayne, Jones, Lenoir, Craven and Carteret counties. Services include:

- **Design Services** – Completion of construction plans, permits and related services for the Project;
- **Construction Services** – Necessary to build and ensure workmanship to the designed facilities in accordance with the applicable technical requirements and standards;
- **Right of Way Acquisition** – It is anticipated that this Project will be constructed within NCDOT’s existing right-of-way;
- **As Constructed Drawings;**
- **As-Built Drawings.**

Operations, Maintenance and Commercialization

The OMC scope of services includes operation and maintenance of Department’s fiber infrastructure outlined in the DB scope and the installation of any additional infrastructure for commercialization purposes to offset the Project costs and generate additional revenue. Key scope items include the following:

- **Operations and Maintenance (“O&M”) Services** – necessary to provide operations, maintenance, repairing and corrective maintenance for fiber optic cable and related infrastructure for the Project in accordance with the applicable performance standards and requirements. Note O&M services are required from the Proposer for both the Department’s assets and the commercialization assets. O&M of the commercialization assets shall be paid for by the Proposer.
- **Commercialization Services** – necessary to commercialize the broadband and related services (i.e., Cellular Connected Vehicle Sites, towers, etc.) developed as part of this Project to offset the Department’s Project costs and generate revenue for the Department. Commercialization Services include all necessary infrastructure investment, design and construction/installation required;
- **Right of Way Acquisition** – It is anticipated that this Project will be constructed and all work will be performed within NCDOT’s existing right-of-way; however, the Commercialization Services may require acquisition of right-of-way outside of NCDOT’s existing limits.

P3

The P3 scope of services include the design, construction, operation and maintenance of the Department's broadband infrastructure and installing any additional infrastructure for commercialization purposes to offset Project costs and generate additional revenue. Key scope items include the following:

- **Design Services** – completion of construction plans, permits and related services for the Project;
- **Construction Services** – necessary to build and ensure workmanship to the designed facilities in accordance with the applicable technical requirements and standards;
- **O&M Services** – necessary to provide operations, maintenance, repairing and corrective maintenance for fiber optic cable and related infrastructure for the Project in accordance with the applicable performance standards and requirements. Note O&M services are required from the Proposer for both the Department's assets and the commercialization assets. O&M of the commercialization assets will be for the Proposer's account;
- **Commercialization Services** – necessary to commercialize the broadband and related services (i.e., Cellular Connected Vehicle Sites, towers, etc.) developed as part of this Project to offset the Department's Project costs and generate revenue for the Department. Commercialization Services includes all necessary infrastructure investment, design and construction/installation required;
- **Right of Way Acquisition** – It is anticipated that this Project will be constructed and all work will be performed within NCDOT's existing right-of-way; however, the Commercialization Services may require acquisition of right-of-way outside of NCDOT limits;
- **As Constructed Drawings;**
- **As-Built Drawings.**

B-1.5. Project Reference Documents

Project Documents developed in support of this Project can be located at <https://connect.ncdot.gov/letting/Pages/Design-Build.aspx>.

Proposers can access information by navigating to the Project link (Broadband I-5986C and R-5777D) at this website.

NCDOT has not determined whether these reference documents are accurate, complete or relevant, or of any value to prospective Proposers. NCDOT makes no representation, warranty or guarantee as to, and will not be responsible for, the accuracy, completeness, or relevance of the reference documents and, in addition, will not be responsible for any conclusions drawn from any reference documents.

NCDOT shall not be responsible or liable in any respect for any causes of action, suits, judgments, claims, expenses, damages or losses whatsoever suffered by any Proposer by reason of (a) any use, in connection with participation in this procurement, of information, opinions or recommendations contained in the Reference Information Documents, or (b) any action or forbearance in reliance on

the Reference Information Documents. Although the Reference Information Documents may include interpretations, extrapolations, analyses and recommendations concerning data, design solutions, technical issues and solutions and construction means and methods, such interpretations, extrapolations, analyses and recommendations are (i) preliminary in nature and, in many cases, are obsolete; (ii) not intended to express the views or preferences of NCDOT or any other Governmental Entity or represent any statement of approval or acceptance thereof by NCDOT or any other Governmental Entity; and (iii) not intended to necessarily form the basis of a Proposer’s design solutions, technical solutions or construction methods. Proposers shall use or not use the Reference Information Documents at their sole risk and remain solely responsible and liable for (x) all investigations and analyses relating to the Project, including those relating to site conditions, geotechnical conditions, utilities, environmental conditions, and traffic, (y) the preparation of their Proposals, and (z) any design, means, and methods that they select, in each case, without regard to anything contained in the Reference Information Documents.

NCDOT does not represent or warrant that the information, opinions and recommendations contained in the Reference Information Documents are complete or accurate or that such information, opinions and recommendations are in conformity with the requirements of the RFP, Governmental Approvals or applicable Laws. Proposers shall have no right to compensation, time extension or other claim in connection with participation in this procurement based on any incompleteness or inaccuracy in the Reference Information Documents.

B-1.6. Status of Federal Environmental Approval

NCDOT is currently developing the environmental documentation under FHWA’s guidelines for compliance with the National Environmental Policy Act (“NEPA”). It is important for Proposers to note, at this time, that the proposed Project remains in the environmental process. It is possible that the Project scope may need to be modified to comply with the environmental process. Nothing contained in the RFP is intended to modify, limit, or otherwise constrain the environmental process or commit NCDOT or any other entity to undertake any action with respect to the Project, including any procurement or the final design and construction of the Project.

B-1.7. Project Funding

NCDOT was awarded \$147 million of federal funds for the improvement of the designated I-95 and U.S. 70 corridors under the USDOT INFRA Grant program. Furthermore, NCDOT has also been successful in its CORESI INFRA Grant application. NCDOT may use INFRA Grant proceeds to make available up to **\$90 million** to fund the capital costs of the Project. NCDOT will not make use of federal funds for broadband along the U.S. 74 corridor. To the extent additional funding is required, NCDOT will consider upfront payments from commercialization and State resources, if available. Please refer to Preferred Procurement Track Selection (Part C) for further information.

B-1.8. Stipend

A stipulated fee of **\$20,000, \$40,000, and \$100,000**, for the Track 1a, Track 1b and Track 2, respectively, will be awarded to each short-listed Proposer that provides a responsive, but unsuccessful, Proposal. A Proposer will only receive one stipend fee, i.e. if a Proposer bids for two Procurement Tracks (i.e. a Proposer bids for Track 1a/b or Track 2) and one track is not selected,

the Proposer will only receive the higher stipulated fee. If a contract award is not made, all short-listed Proposers that provide a responsive Proposal shall receive and accept the stipulated fee. Once award is made, or a decision is made not to award, unsuccessful Proposers can apply for the stipulated fee by notifying the State Contract Officer, in writing, and providing an original invoice by the earlier of 60 days after notice of contract award and a decision not to make contract award after the proposal submittal deadline. If the Proposer accepts the stipulated fee, the Department reserves the right to use any ideas or information contained in the Proposal in connection with any contract awarded for the project, or in connection with any subsequent procurement, with no obligation to pay additional compensation to the unsuccessful Proposer. The stipulated fee will be paid to eligible Proposers within ninety days after the award of the contract or the decision not to award. Unsuccessful Proposers may elect to refuse payment of the stipulated fee and retain any rights to its Proposal and the ideas and information contained therein.

In the event that the Department suspends or discontinues the procurement process prior to the Proposal submittal date current at the time of the suspension, no stipulated fee will be paid.

B-1.9. Disadvantage Business Enterprises

NCDOT is committed to complying with the North Carolina General Statute 136-28.4 with respect to disadvantaged minority-owned and women-owned business enterprises for state funded projects and supporting Disadvantaged Business Enterprise (“DBE”) firms on federally funded projects.

B-2.0. NCDOT Pre-Qualification Requirements

Separate to the Request for Qualifications (“RFQ”) qualification process, certain parties within Proposer teams shall be pre-qualified by the Department for the work they are identified to perform. If the work is to be done by a Proposer office other than the one that is prequalified, it will be necessary to have that Proposer office prequalified. Prior to the deadline for submitting the RFP Proposal response(s), the following team members (regardless of procurement track) shall be pre-qualified with the Department for each short-listed Proposer:

- Prime Contractor(s) (individually)
- Lead Design Engineer Firm (for all disciplines anticipated to provide preconstruction services)
- Lead Construction Contractor
- Lead O&M Firm

All Joint Ventures, LLCs, or any legal structure that is different than the existing pre-qualification status must be pre-qualified prior to the submittal deadline for Proposals. Sub-contractors need only be pre-qualified prior to performing the work. All DB Proposers should be pre-qualified prior to submittal of the Price Proposals at RFP stage. Furthermore, all DB entities submitting Proposals as part of the P3 Procurement Track should be pre-qualified prior to submittal of the Price Proposals. If not pre-qualified at the time of submitting the Price Proposals, the prime contractor is solely responsible for either (1) ensuring that the design firm is pre-qualified prior to its first design submittal; or (2) replacing that firm with a pre-qualified firm.

For the NCDOT prequalification process and requirements, refer to Article 102-2 of the Standard Specifications and the following website:

<http://www.ncdot.org/business/howtogetstarted/>

B-2.1. Amendments

NCDOT reserves the right to issue amendments to this RFP at any time before the Proposal Response Deadline. NCDOT will distribute any amendments to this RFP to all RFP holders identified on the short-list. No oral or written response provided by NCDOT in connection with this RFP will be binding on NCDOT, nor will it change, modify or waive the requirements of this RFP, except to the extent such response is included in an amendment issued in accordance with this Part B-2.1 (Amendments). Proposers are responsible for monitoring the Project website for information concerning the Project.

B-2.2. General Information

NCDOT reserves the right, at its sole discretion, to either proceed no further with the Project procurement process or to re-advertise in another public solicitation.

The NCDOT reserves the right to accept or reject any and all Proposal responses and / or discontinue the selection process at any time prior to contract execution. In the event that the Department suspends or discontinues this procurement prior to the Technical Proposal and/or Price Proposal submittal date, where applicable, no stipulated fee will be paid.

The NCDOT assumes no liability and will not reimburse costs incurred by firms (whether selected or not) in developing Proposal responses to this RFP.

The NCDOT will not be bound by oral explanations or instructions given at any time during the procurement process or after award. Only information that is received in response to this RFP will be evaluated; references to information previously submitted will not suffice as a response to this solicitation.

The NCDOT reserves the right to request or obtain additional information about any and all responses to this RFP. NCDOT may also issue addenda to this RFP which will be issued to all short-listed teams.

Each individual entity submitting a Proposal can only appear in one Proposal per procurement track. Proposers are encouraged to familiarize themselves with the North Carolina Public Records Act, North Carolina General Statute § 132-1 et seq (“Public Records Law”) and any other laws and regulations applicable to the disclosure of documents submitted under the RFP, including North Carolina General Statute § 136-28.5(c). All materials submitted by Proposers, including the Proposals, shall be subject to such laws. In no event shall NCDOT or any of its agents, representatives, consultants, directors, officers or employees be liable to a Proposer or Proposer team member for the disclosure of any materials or information submitted in response to the RFP.

In the event the Proposer submits any documents which the Proposer believes are not subject to disclosure pursuant to the Public Records Law, it must conspicuously mark each document “CONFIDENTIAL” or “CONFIDENTIAL TRADE SECRETS” in the header or footer of each such page affected. Blanket designations that do not identify the specific information shall not be acceptable and may be cause for NCDOT to treat the entire Proposal as public information.

NCDOT will not advise a submitting party as to the nature or content of documents entitled to protection from disclosure under the Public Records Law or other applicable laws, as to the

interpretation of such laws, or as to definition of trade secret. Nothing contained in this provision shall modify or amend requirements and obligations imposed on NCDOT by the Public Records Law or other applicable Law. The provisions of the Public Records Law or other Laws shall control in the event of a conflict between the procedures described above and the applicable Law. Information submitted by Proposers may be made available to USDOT representatives. NCDOT intends to follow procedures established by USDOT to avoid disclosure, to the extent possible, of such information under the Freedom of Information Act.

In the event of any proceeding or litigation concerning the disclosure of any material submitted by the submitting party, NCDOT will be the custodian retaining the material until otherwise ordered by a court or such other authority having jurisdiction with respect thereto, and the submitting party will be responsible for otherwise prosecuting or defending any action concerning the materials at its sole expense and risk; provided, however, that NCDOT reserves the right, in its sole discretion, to intervene or participate in the litigation in such manner as it deems necessary or desirable. All costs and fees (including attorneys' fees and costs) incurred by NCDOT in connection with any litigation, proceeding, or request for disclosure shall be reimbursed and paid by Proposer objecting to disclosure. Each Proposer shall be responsible for all of its own costs in connection with any litigation, proceeding, or request for disclosure.

Except to the extent provided under applicable Law, in no event shall NCDOT, or any of its board members, agents, representatives, consultants, directors, officers or employees be liable to a Proposer or Proposer team member for the disclosure of all or a portion of a Proposal submitted under the RFP.

Proposers should note that the RFP and a Contract Agreement will be required to conform with federal laws and regulations applicable to projects funded in whole or in part with federal-aid highway funds, including regulations of the Federal Highway Administration, Buy America requirements, the Davis-Bacon Act, Title VI of the Civil Rights Act of 1964, as amended, and 49 C.F.R. Part 26 (regarding the participation of DBE).

Submission of a Proposal constitutes the Proposer's agreement to the provisions of this Part B-2.3.

To ensure that information is distributed equitably to all short-listed Proposers, **all questions and requests for information shall be directed to the State Contract Officer through the Design-Build e-mail address (designbuild@ncdot.gov)**. This precludes any Proposer Team member, or representative, from contacting representatives of the Department, other State Agencies or Federal Agencies either by phone, e-mail or in person concerning this Project.

For the purpose of this Project, Proposer's attention is directed to the use of consulting engineer requirements in the Design-Build Policy and Procedures dated October 6, 2011, and Public Private Partnerships Policy & Procedures dated January 9, 2014. If a member of the Proposer's team wishes to be granted an exception to this policy, then that team member should submit a letter to the Department requesting an exception. The letter should be submitted to Mr. **Ronald E. Davenport, Jr., PE, State Contract Officer through the Design-Build e-mail address (designbuild@ncdot.gov)**. If a firm was contracted to perform pre-hydraulic design reports, surveys, threatened and endangered species assessments, or geotechnical investigations in support for this Project, an exception is hereby granted categorically to that firm and no letter will be required.

B-2.3. Conflicts of Interest

Proposers shall identify any real or perceived Conflict of Interest of the Proposer or any team member or sub-consultant of the Proposer’s Team with regard to the Project. Individuals and firms that are restricted from proposing or joining a Proposer team include, without limitation, the following individuals, firms, and their affiliates:

- KPMG LLP
- Hunton Andrews Kurth LLP
- ONUG
- Exhult Engineering
- Altman Solon

Prior to finalizing their teams, Proposers should require their proposed team members to identify and carefully review potential Conflicts of Interest, which may preclude certain individuals, firms and their affiliates from participating on a Proposer team for the Project. If a potential Conflict of Interest is identified, the Proposer must present the pertinent information to NCDOT. Given a real or perceived Conflict of Interest, NCDOT, in its sole discretion, will decide if a Proposer has the ability to mitigate such a conflict.

In addition to the foregoing, the organizational conflict of interest rules found in 23 CFR § 636, Subpart A, including 23 CFR § 636.116, also apply to this procurement. 23 CFR § 636.103 defines an “organizational conflict of interest” as follows:

“Organizational conflict of interest means that because of other activities or relationships with other persons, a person is unable or potentially unable to render impartial assistance or advice to the owner, or the person’s objectivity in performing the contract work is or might be otherwise impaired, or a person has an unfair competitive advantage.”

If applicable, a Proposer shall provide information concerning organizational conflicts of interest and disclose all relevant facts concerning any past, present or currently planned interests that may present an organizational conflict of interest. Such Proposer shall state how its interests or those of any of its team members, consultants, contractors or subcontractors, including the interests of any chief executives, directors or key personnel thereof, may result in, or could be viewed as, an organizational conflict of interest.

B-2.4. Instructions for Proposal Submittals – All Procurement Tracks

The following information must be submitted by DB Proposers (Track 1a), OMC Proposers (Track 1b), and P3 Proposers (Track 2), respectively:

DB Proposers (Track 1a):

1. DB Bid Bond per the requirements in Part A-1.2. Bond/Security Requirements
2. DB Technical Proposal: DB Proposers must provide information as required in Part D-1.3. DB Technical Proposal and Evaluation Criteria
3. DB Price Proposal: DB Proposers must complete the Itemized Proposal Sheet (ITEMIZED PROPOSAL FOR CONTRACT NO. C204556), located in Appendix Part A – Final Request for Proposals, Design-Build Project

OMC Proposers (Track 1b):

1. OMC Bid Bond per the requirements in Part A-1.2. Bond/Security Requirements
2. OMC Technical Proposal: OMC Proposers must provide information as required in:
 - a. Part E-1.4. OMC Information Submittal
 - b. Part E-1.5. O&M Services Submittal
 - c. Part E-1.6. Commercialization Services Submittal
3. OMC Price Proposal: OMC Proposers must provide information as required in:
 - a. Part E-1.7. OMC Price Proposal Submittal
 - b. Part E-1.8. Base Case Financial Model Submittal

P3 Proposers (Track 2):

1. P3 Bid Bond per the requirements in Part A-1.2. Bond/Security Requirements
2. P3 Technical Proposal: P3 Proposers must provide information as required in:
 - a. Part F-1.4. P3 Information Submittal
 - b. Part F-2.0b. Technical Proposal and Evaluation Criteria – DB Portion of P3 Proposals
 - c. Part F-1.5. O&M Services Submittal
 - d. Part F-1.6. Commercialization Services Submittal
2. P3 Price Proposal: P3 Proposers must provide information as required in:
 - a. The Itemized Proposal Sheet (ITEMIZED PROPOSAL FOR CONTRACT NO. C204556), located in Appendix Part A – Final Request for Proposals, Design-Build Project
 - b. Part F-1.7. P3 Price Proposal Submittal
 - c. Part F-1.8. Base Case Financial Model Submittal

For all Procurement Tracks, Technical and / or Price Proposals that do not adhere to all the requirements noted below may be considered non-responsive.

GENERAL SUBMITTAL INSTRUCTIONS

Technical and Price Proposals for all Procurement Tracks will be accepted until **March 12, 2021 at 4:00 PM Local Time** at the office of the State Contract Officer:

Mr. Ronald E. Davenport, Jr., PE
Contract Standards and Development
1020 Birch Ridge Drive
Century Center Complex - Building B
Raleigh, NC 27610

No Proposals will be accepted after the date and time specified.

Proposals shall be submitted in two separate, sealed parcels containing the Technical Proposal in one and the Price Proposal in the other parcel. Proposals shall be delivered to Door B3 of the Century Center Complex—Building B. The courier shall call either Ms. Marsha Sample at (919) 707-6915 or Mr. Ken Kennedy, PE at (919) 707-6919 to accept delivery at Door B3. Any courier shall not be allowed beyond Door B3’s entranceway, and any courier shall wear a face covering, in accordance with the Department Memo “Office Procedures and Protocols for COVID-19 Operational Safety”.

TECHNICAL PROPOSAL SUBMITTAL INSTRUCTIONS

An electronic copy of the Technical Proposal, on a thumb drive, shall be submitted in a sealed package. The electronic copy shall be created by converting all files into a PDF format. The electronic copy shall be scaled to reproduce to the appropriate page format, as defined below. The outer wrapping shall clearly indicate the following information:

Technical Proposal – Electronic Copy
Submitted By: (DB, OMC, or P3 Team's Name)
DB, OMC, or P3 Team’s Address
Contract Number C204556
TIP Number R-5777D & I-5986C & HO-0002A, B & C
Multiple Counties

For DB Proposers: Installation of broadband fiber along I-95, U.S. 70, and U.S. 74.

For OMC Proposers: Operation, Maintenance and Commercialization of broadband fiber along I-95, U.S. 70, and U.S. 74.

For P3 Proposers: Public Private Partnership of broadband fiber along I-95, U.S. 70, and U.S. 74.

Submittal by mail shall not be permitted for this Technical Proposal.

DB Technical Proposal Requirements

8 ½ inch by 11 inch pages

No fold out sheets allowed – 11 inch by 17 inch pages shall only be allowed for typical installation details

Printed on one side only

Double-spaced

Font size 12 - Within embedded tables, charts, and graphics only, minimal font size 10 is permissible

Excluding the introductory letter to Mr. Ronald E. Davenport, Jr., P.E. (two-page maximum length) and the 11 inch by 17 inch typical installation details, the **maximum number of allowable pages shall be 40 pages.**

The aforementioned introductory letter to Mr. Ronald E. Davenport, Jr., PE shall include a statement acknowledging that the NCDOT may destroy all DB Technical Proposals not retained by the Department, **or** a statement that the NCDOT should return all DB Technical Proposals not retained by the Department.

Project team members, identified in the Statement of Qualifications, shall not be modified in the DB Technical Proposal without written approval of the Department. Any such request should be sent to the attention of Mr. Ronald E. Davenport, Jr., PE, at the address below:

NCDOT- Contract Standards and Development
Century Center Complex - Building B
1020 Birch Ridge Drive
Raleigh, NC 27610

OMC Technical Proposal Requirements

8 ½ inch by 11 inch pages

No fold out sheets allowed – 11 inch by 17 inch pages shall only be allowed for typical installation details

Printed on one side only

Double-spaced

Font size 12 - Within embedded tables, charts, and graphics only, minimal font size 10 is permissible

Excluding the introductory letter to Mr. Ronald E. Davenport, Jr., P.E. (two-page maximum length) and the 11 inch by 17 inch typical installation details, **the maximum number of allowable pages shall be 90 pages**. CVs / resumes will not be included in the page count.

The aforementioned introductory letter to Mr. Ronald E. Davenport, Jr., PE shall include a statement acknowledging that the NCDOT may destroy all OMC Technical Proposals not retained by the Department, **or** a statement that the NCDOT should return all OMC Technical Proposals not retained by the Department.

Project team members, identified in the Statement of Qualifications, shall not be modified in the OMC Technical Proposal without written approval of the Department. Any such request should be sent to the attention of Mr. Ronald E. Davenport, Jr., PE, at the address below:

NCDOT- Contract Standards and Development
Century Center Complex - Building B
1020 Birch Ridge Drive
Raleigh, NC 27610

P3 Technical Proposal Requirements

8 ½ inch by 11 inch pages

No fold out sheets allowed – 11 inch by 17 inch pages shall only be allowed for typical installation details

Printed on one side only

Double-spaced

Font size 12 - Within embedded tables, charts, and graphics only, minimal font size 10 is permissible

Excluding the introductory letter to Mr. Ronald E. Davenport, Jr., P.E. (two-page maximum length) and the 11 inch by 17 inch typical installation details, **the maximum number of allowable pages shall be 130 pages**. CVs / resumes will not be included in the page count.

The aforementioned introductory letter to Mr. Ronald E. Davenport, Jr., PE shall include a statement acknowledging that the NCDOT may destroy all P3 Technical Proposals not retained by the Department, **or** a statement that the NCDOT should return all P3 Technical Proposals not retained by the Department.

Project team members, identified in the Statement of Qualifications, shall not be modified in the P3 Technical Proposal without written approval of the Department. Any such request should be sent to the attention of Mr. Ronald E. Davenport, Jr., PE, at the address below:

NCDOT- Contract Standards and Development
Century Center Complex - Building B
1020 Birch Ridge Drive
Raleigh, NC 27610

PRICE PROPOSAL SUBMITTAL INSTRUCTIONS

DB and P3 Proposers must provide a hard copy and electronic copy of the DB Itemized Proposal Sheet (ITEMIZED PROPOSAL FOR CONTRACT NO. C204556), located in Appendix Part A. The electronic copy of the DB Itemized Proposal Sheet must be submitted in PDF format.

OMC and P3 Proposers must provide a hard copy and electronic copy of the Price Proposal, by completing Appendix Part D and Appendix Part G, respectively. The electronic copy of Appendix Part D and Appendix Part G must be submitted in Microsoft Excel and PDF format.

OMC and P3 Proposers must also provide an electronic copy only of the Base Case Financial Model as required in Part E-1.8 and Part F-1.8, respectively. The electronic copy of the Base Case Financial Model must be submitted in Microsoft Excel format only.

Hard copy and soft copy (submitted on a thumb drive) Price Proposals shall be submitted in a sealed package. The outer wrapping shall clearly indicate the following information:

Price Proposal
Submitted by (DB, OMC, or P3 Team's Name)
DB, OMC, or P3 Team's Address
Contract Number C204556
TIP Number R-5777D & I-5986C & HO-0002A, B & C
Multiple Counties

For DB Proposers: Installation of broadband fiber along I-95, U.S. 70, and U.S. 74.

For OMC Proposers: Operation, Maintenance and Commercialization of broadband fiber along I-95, U.S. 70, and U.S. 74.

For P3 Proposers: Public Private Partnership of broadband fiber along I-95, U.S. 70, and U.S. 74.

Proposers must take note that failure to execute the requirements in this RFP may render the Price Proposal non-responsive.

Submittal by mail shall not be permitted for this Price Proposal.

PART C: PREFERRED PROCUREMENT TRACK SELECTION

The purpose of this section is to summarize the evaluation criteria of each Procurement Track to illustrate how preferred Proposers will be selected within each Procurement Track (i.e., how the best DB Proposer will be selected from Track 1a, how the best OMC Proposer will be selected from Track 1b, and how the best P3 Proposer will be selected from Track 2), and how the Preferred Procurement Track (i.e., Track 1 or Track 2) will be selected.

C-1.1. Summary of DB, OMC, and P3 Evaluation Criteria

As described in Part D, Part E and Part F for the DB, OMC and P3 Procurement Tracks, respectively, below is a summary of each of the evaluation criteria.

C-1.1a. DB Evaluation Criteria

Qualified DB Proposals will be evaluated according to the Proposer's DB Technical Proposal and DB Price Proposal and assigned a total score out of 100 points. The highest score will determine the Best DB Proposal (as defined below).

The Proposer's DB Technical Proposal will be evaluated out of 10 points according to the evaluation criteria in Part D, in order to determine the Proposer's DB Technical Proposal Score.

The Proposer's DB Price Proposal will be evaluated out of 90 points relative to other qualified DB Price Proposals, according to the formula below, in order to determine the Proposer's DB Price Proposal Score:

- If the DB Price Proposal is the lowest price out of all qualified DB Proposals:
DB Price Proposal Score = 90 points
- If the DB Price Proposal is not the lowest price out of all qualified DB Proposals:
DB Price Proposal Score = (Lowest Price) / (DB Price Proposal) x 90 points

Proposals will not be deemed non-responsive if the Proposer's Price Proposal results in a "funding gap." See Part C-1.2 for further explanation.

The Proposer's DB Technical Proposal Score (out of 10 points) and the Proposer's DB Price Proposal Score (out of 90 points) will then be combined to calculate the Proposer's DB Proposal Score. The Proposer with the highest DB Proposal Score will be the "Best DB Proposal".

The State Contract Officer will provide each Proposer with its DB Technical Proposal Score, DB Price Proposal Score, and DB Proposal Score when the Department makes a Preferred Proposer and Preferred Procurement Track announcement.

C-1.1b. OMC Evaluation Criteria

Qualified OMC Proposals will be evaluated according to the Proposer's OMC Technical Proposal and OMC Price Proposal and assigned a total score out of 100 points. The highest score will determine the Best OMC Proposal (as defined below).

The Proposer's OMC Technical Proposal will be evaluated out of 10 points according to the evaluation criteria in Part E, in order to determine the Proposer's OMC Technical Proposal Score.

The Proposer’s OMC Price Proposal will be evaluated out of 90 points relative to other qualified OMC Price Proposals, according to the formula below, in order to determine the Proposer’s OMC Price Proposal Score:

- If the OMC Price Proposal is the lowest price out of all qualified OMC Proposals:
OMC Price Proposal Score = 90 points
- If the OMC Price Proposal is not the lowest price out of all qualified OMC Proposals:
OMC Price Proposal Score = (Lowest Price) / (OMC Price Proposal) x 90 points

The OMC Price Proposal is the sum of the following:

- Add: The Net Present Value (“NPV”)¹ over the contract term of the price of the O&M scope of work
- Subtract: The proposed Guaranteed Upfront Payment to the Department
- Subtract: The NPV² over the contract term of the proposed Annual Guaranteed Revenue Share
- Subtract: The NPV³ over the contract term of the proposed Annual Speculative Net Cash Flow Share

The Proposer’s OMC Technical Proposal Score (out of 10 points) and the Proposer’s OMC Price Proposal Score (out of 90 points) will then be combined to calculate the Proposer’s OMC Proposal Score. The Proposer with the highest OMC Proposal Score will be the “Best OMC Proposal.”

The State Contract Officer will provide each Proposer with its Technical Proposal Score, OMC Price Proposal Score, and OMC Proposal Score when the Department makes a Preferred Proposer and Preferred Procurement Track announcement.

Proposers must take note of the instructions in Appendix Part D – OMC: Price Proposal for O&M and Commercialization. In order to maximize value, the Department’s financial objective is to close any funding gap that may exist using the Guaranteed Upfront Payment, and to cover its annual O&M expense (i.e., the O&M Price Proposal) over the term of the contract, with the Annual Guaranteed Revenue Share. Proposals will not be deemed non-responsive if the Proposer’s Price Proposal results in a “funding gap.” See Part C-1.2 for further explanation.

C-1.1c. P3 Evaluation Criteria

Qualified P3 Proposals will be evaluated according to the Proposer’s P3 Technical Proposal and P3 Price Proposal and assigned a score out of 100 points. The P3 Proposer’s P3 Technical Proposal includes the P3 Proposer’s DB Technical Proposal and OMC Technical Proposal. The highest score will determine the Best P3 Proposal.

The P3 Proposer’s Technical Proposal will be evaluated out of 10 points according to the evaluation criteria in Part F, in order to derive the Proposer’s P3 Technical Proposal Score.

¹ The discount rate to be used will be 2.82% p.a..
² The discount rate to be used will be 2.82% p.a..
³ The discount rate to be used will be 14.00% p.a..

The P3 Proposer's Price Proposal will be evaluated out of 90 points relative to other qualified P3 Price Proposals, according to the formula below, in order to derive the Proposer's P3 Price Proposal Score:

- If the P3 Price Proposal is the lowest price out of all qualified P3 Proposals:
Score = 90 points
- If the P3 Price Proposal is not the lowest price out of all qualified P3 Proposals:
Score = (Lowest Price) / (P3 Price Proposal) x 90 points

The P3 Price Proposal is the sum of the following:

- Add: The P3 Proposer's DB Price Proposal
- Add: NPV⁴ over the contract term of the price of the O&M scope of work
- Subtract: The proposed Guaranteed Upfront Payment to the Department
- Subtract: The NPV⁵ over the contract term of the proposed Annual Guaranteed Revenue Share
- Subtract: The NPV⁶ over the contract term of the proposed Annual Speculative Net Cash Flow Share

The Proposer's P3 Technical Proposal Score (out of ten points) and the Proposer's P3 Price Proposal Score (out of 90 points) will then be combined to calculate the Proposer's P3 Proposal Score. The Proposer with the highest P3 Proposal Score will be the Best OMC Proposal.

The State Contract Officer will provide each Proposer with the Proposer's P3 Technical Proposal Score, P3 Price Proposal Score, and P3 Proposal Score when the Department makes a Preferred Proposer and Preferred Procurement Track announcement.

Proposers must take note of the instructions in Appendix Part G – P3: Price Proposal for O&M and Commercialization. In order to maximize value, the Department's financial objective is to close any funding gap that may exist using the Guaranteed Upfront Payment, and to cover its annual O&M expense (i.e., the O&M Price Proposal) over the term of the contract, with the Annual Guaranteed Revenue Share. Proposals will not be deemed non-responsive if the Proposer's Price Proposal results in a "funding gap." See Part C-1.2 for further explanation.

C-1.1d. Pass/Fail and Responsiveness Evaluation

The Proposer's Technical Proposals and Price Proposals will be reviewed on a pass/fail basis (a) for the Proposal's conformance to the RFP instructions regarding organization and format and responsiveness to the requirements set forth in the RFP and (b) based on the pass/fail criteria set forth below. Any Proposal that fails on any of the pass/fail portions of the evaluation may be considered non-responsive and may not be eligible for recommendation for award. NCDOT retains the sole discretion to disregard or waive minor irregularities, omissions, nonconformities and discrepancies.

⁴ The discount rate to be used will be 2.82% p.a..

⁵ The discount rate to be used will be 2.82% p.a..

⁶ The discount rate to be used will be 14.00% p.a..

Evaluation of Proposals will be conducted by NCDOT’s Technical Review Committee (“TRC”) and Financial Review Committee (“FRC”), each of which will be comprised of representatives from NCDOT. The TRC and FRC may also be assisted by advisors, including NCDOT representatives and outside consultants who will offer advice on commercial, financial, and legal aspects of each Proposal.

NCDOT may request additional or clarifying information from a Proposer prior to a final pass/fail determination. Proposals that are deemed non-responsive to the RFP, or that do not pass the pass/fail criteria, as outlined below, may be excluded from further consideration, and the Proposer will be so advised. NCDOT may also exclude from consideration any Proposer whose Proposal contains a material misrepresentation.

Technical Proposal Pass/Fail Evaluation

Technical Proposals will be evaluated based on the following pass/fail criteria:

- (a) Applicable to all Procurement Tracks: Submission of the required bid bond
- (b) Applicable to all Procurement Tracks: The Technical Proposal contains the required materials as identified in Part B-2.4, Instructions for Proposal Submittals – All Procurement Tracks
- (c) Applicable to all Procurement Tracks: Proposer has provided a statement that either (i) each of the major participants, including equity members, and key personnel listed in the Proposer’s SOQ have not changed since the Proposer’s submission of the SOQ or (ii) the Proposer has previously advised NCDOT of a change, NCDOT has consented to such change, and the Proposal attaches a true and correct copy of NCDOT’s written consent thereto.

Price Proposal Pass/Fail Evaluation

Price Proposals will be evaluated based on the following pass/fail criteria:

- (a) Applicable to the OMC or P3 Procurement Tracks only: Each Proposer shall submit to the Department information describing any material changes to its financial condition and capabilities as evidenced by the financial and other data submitted in the SOQ.

Proposers must submit a letter from the chief executive officer, chief financial officer or treasurer (or, if neither a chief financial officer nor treasurer exists for an entity, an individual who serves in an equivalent capacity and whose title shall be specified in the certification) for the Proposer providing information on any materially adverse change(s) in financial condition since submission of the SOQs and those that are pending or certifying that no such materially adverse changes have occurred. In instances where a materially adverse change has occurred, or is anticipated to occur, the affected entity shall provide a statement describing each materially adverse change in detail, the likelihood that the developments will continue during the period of the Proposer’s performance of the Project requirements and the projected full extent of the changes likely to be experienced during the contract term.

The following list identifies certain items that the Department would consider to be materially adverse changes in financial condition. This list is intended to be indicative only. At the discretion of the Department, any failure to disclose a prior or pending materially adverse change may result in disqualification from further participation in the selection process. Estimates of the effect on revenues and expenses and the change in equity shall be provided separately for each materially adverse change as certified by the chief financial officer or treasurer (or, if neither position exists for the entity, an individual who serves in an equivalent capacity and whose title shall be specified in the certification). References to the notes in the financial statements are not sufficient to address the requirement to discuss the impact of materially adverse changes. The affected entity shall also provide a discussion of measures that would be undertaken to insulate the Project from any recent materially adverse changes, and those currently in progress or reasonably anticipated in the future.

List of indicative materially adverse changes in financial condition:

- (1) An event of bankruptcy involving the affected entity, a related business unit within the same corporation or the parent corporation of the affected entity;
- (2) A decrease in tangible net worth of ten percent (10%) or greater of shareholder equity;
- (3) A sale, merger or acquisition exceeding ten percent (10%) of the value of shareholder equity prior to the sale, merger or acquisition that in any way involves the affected entity, a related business unit or parent corporation of the affected entity;
- (4) A downward change in credit rating for the affected entity, a related business unit or parent corporation of the affected entity;
- (5) Inability to meet material conditions of loan or debt covenants by the affected entity, a related business unit or parent corporation of the affected entity that has required, or is expected to require, a waiver or modification of agreed financial ratios, coverage factors or other loan stipulations, or additional credit support from shareholders or other third parties;
- (6) Other events known to the affected entity, a related business unit or parent corporation of the affected entity that represent a materially adverse change in financial condition since submission of the SOQs or may be pending for the next reporting period.

If NCDOT determines that a Proposer no longer appears to have the financial capability to fulfill its obligations, it may offer such Proposer the opportunity to meet the financial requirement through one or more guarantors acceptable to NCDOT.

(b) Applicable to the OMC or P3 Procurement Tracks only:

i. Proposers shall furnish the Base Case Financial Model to provide supporting assumptions to its projections provided in the Price Proposal. While the model mechanics will be at the Proposer's discretion, it should clearly outline the Proposer's calculations used to build out the Price Proposal, including build-up (bottom up and/or top down) of the commercialization revenue calculations and rationale used. The Base Case Financial Model shall be provided as a dynamic Microsoft Excel file, with clearly marked inputs and outputs.

The Base Case Financial Model must provide in-depth supporting calculations for the following inputs in the Price Proposal:

- Revenues from Commercial Activities
- O&M Costs for Commercial Activities
- Net Commercialization Cash Flows

The Base Case Financial Model must include the projected capital expenditures needed for the generation of Revenues from Commercial Activities. The Department reserves the sole discretion to assess the reasonability of the Proposer's due diligence conducted and observable evidence for the purpose of evaluating the Proposal.

ii. Proposers shall provide any available verifiable evidence to substantiate its views as outlined in the approach to commercialization narrative, including any secured customer contracts, letter of interest from potential customers, any demonstrable customer demand for the network from the Proposer's existing customer base, or any other quantifiable evidence. Customer contracts and other forms of tangible evidence, such as letters of interest, shall be provided as attachments to the OMC Information Submittal Requirements (Part E-1.4) or P3 Information Submittal Requirements (Part F-1.4), and can be marked as confidential information if need be. The reasonability of the commercialization approach will be determined based on the Department's sole discretion, considering market precedents, existing market conditions, the Department's estimates, tangible evidence supporting the Proposer's approach, and the level of the Proposer's due diligence conducted to date.

iii. Proposers shall identify sufficient financing for the Project, including all design, construction, operation, maintenance and commercialization, including sufficient financing for the Guaranteed Upfront Payment and Annual Guaranteed Revenue Share.

C-1.2. Preferred Procurement Track Selection Criteria

The Department will rigorously review all Proposals to determine the Procurement Track that best aligns with the Department's objectives.

The Department is targeting the most cost effective solution for the DB scope of work and intends to utilize the Federal funding available for the Project from the INFRA Grant proceeds and NCDOT contributions of other public funds (up to \$90 million in total). NCDOT will not make use of federal funds for broadband along the U.S. 74 corridor. In evaluating Proposals, the

Department will ascertain the “funding gap”, which exists if the sum of the following is negative:
(i) The \$90 million the Department currently intends to make available for the Project, plus (ii) upfront funding commitments from commercialization activities, less (iii) the cost of the DB scope of work as set forth in the Proposals.

Depending on the total funding gap that remains after considering the upfront commitments from commercialization activities (if such a funding gap exists), the Department will consider all options available to close the funding gap, including the contribution of additional public funds that may be available to the Department to further offset the cost of the DB scope of work. The Department retains the right to terminate the procurement if it determines that it is not feasible or otherwise in the best interests of the Department to close the funding gap by contributing additional public funds to the Project.

All Proposers must take note that the need for financing will not dictate the selection of the Track 2 as the Preferred Procurement Track.

In order to determine the Preferred Procurement Track, the Department will perform the following:

- 1) The Best DB Proposal from Track 1a and the Best OMC Proposal from Track 1b (Proposals with the highest points) will be combined to create the Track 1 Proposal for Preferred Procurement Track evaluation
- 2) The Best P3 Proposal (Proposal with the highest points) will be the Track 2 Proposal for Preferred Procurement Track evaluation
- 3) The Best DB Proposal’s DB Technical Proposal Score and the Best OMC Proposal’s OMC Technical Proposal Score (both out of ten points) will be averaged (according to the arithmetic mean) to calculate a Track 1 Proposal Technical Score out of 10 points
- 4) The Best P3 Proposal’s P3 Technical Proposal Score will be the Track 2 Proposal Technical Score out of 10 points
- 5) The Track 1 Price Proposal will be calculated by adding the Best DB Proposal’s Price Proposal and the Best OMC Proposal’s Price Proposal
- 6) The Track 2 Price Proposal will be the Best P3 Proposal’s Price Proposal
- 7) The Track 1 Price Proposal and Track 2 Price Proposal will be evaluated out of 90 points relative to each other, according to the formula below:
 - a) If the Track 1 Price Proposal is the lowest price: Track 1 Price Proposal Score = 90 points
 - b) If the Track 1 Price Proposal is not the lowest price: Track 1 Price Proposal Score = (Track 2 Price Proposal) / (Track 1 Price Proposal) x 90 points
- 8) The Track 1 Price Proposal Score (out of 90 points) will then be added to the Track 1 Technical Proposal Score (out of 10 points) to derive the Track 1 Proposal Score
- 9) The Track 2 Price Proposal Score (out of 90 points) will then be added to the Track 2 Technical Proposal Score (out of 10 points) to derive the Track 2 Proposal Score

The Department will then select the highest score between the Track 1 Proposal Score and Track 2 Proposal Score to select the Preferred Procurement Track, which is deemed to maximize value.

The State Contract Officer will provide each Proposer with the Track 1 Proposal Score and Track 2 Proposal Score when the Department makes a Preferred Proposer and Preferred Procurement Track announcement.

The Department reserves the right to terminate any Procurement Track in the Department's sole discretion. Without limitation, the Department may elect to terminate, in the Department's sole discretion, Procurement Track 1b without terminating Procurement Track 1a.

PART D: INFORMATION REQUIRED FROM PROPOSERS FOR DESIGN-BUILD (TRACK 1a)

The purpose of Part D is to describe the information required for the DB Procurement Track (Track 1a). In this section, DB Proposers will find the following:

- **The DB Scope of Work (Part D-1.1)**, which describes all the scope of work elements attributable to the DB Proposers. DB Proposers must take note that the DB Scope of Work is part of the DB Contract (Appendix Part A – Final Request for Proposals, Design-Build Project). The DB Scope of Work includes:
 - Structures Scope of Work
 - Transportation Management Scope of Work
 - Intelligent Transportation Management Scope of Work
 - Utilities Coordination Scope of Work
 - Erosion and Sedimentation Scope of Work
 - Environmental Permits Scope of Work
 - Railroad Coordination Scope of Work
- **DB Contractor Coordination with OMC Contractor (Part D-1.2)**, which provides an overview of the coordination that will be required between the DB Contractor and OMC Contractor, should the Department decide to progress with Track 1.
- **DB Information Submittal Requirements (Part D-1.3)**, which provides an overview of the Technical Proposal required from DB Proposers and describes the evaluation criteria.

D-1.1. DB Scope of Work

D-1.1a. Structures Scope of Work

General

The Design-Build Team shall be responsible for the design and installation of all fiber optic conduit attachment systems (conduit) necessary to complete the project.

Unless allowed otherwise in this RFP, designs shall be in accordance with the latest edition of AASHTO LRFD Bridge Design Specifications (with exceptions noted in the NCDOT *Structures Management Unit Manual*), NCDOT *Structures Management Unit Manual* (including Policy Memos) and NCDOT *Bridge Policy Manual*.

Unless allowed otherwise in this RFP, all construction and materials shall be in accordance with the 2018 NCDOT *Standard Specifications for Roads and Structures*, NCDOT Structures Management Unit Project Special Provisions, and NCDOT Structures Management Unit Standard Drawings.

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

Additional conduit attachments to structures may be permitted with the approval of the Engineer and review by Structures Management Unit.

Referring to Part B 1-4: Figure 1: Project Scope Overview: Proposers must take note that the Project scope of work includes installing fiber and conduit along the complete I-95/U.S. 70 network and only Network Segment 1 and 3 of the U.S. 74 network. NCDOT is currently exploring various options to complete the connection (represented by Network Segment 2) between U.S. 74 Network Segment 1 and 3, and the cost vs. benefit of such.

Project Scope I-5986C

Fiber Optic Conduit Attachment Systems (Conduit) may be attached to the following structures on I-95:

Robeson County: - none

Cumberland County:

Bridge No. 250111 on I-95 (Southbound) over Cape Fear River

Bridge No. 250134 on I-95 (Southbound) over SR 1006 and CSX Railroad

Harnett County - none

Johnston County

Bridge No. 500101 on I-95 (Southbound) over Neuse River

Bridge No. 500107 on I-95 (Northbound) over SR 1927, SR 2305, and CSX Railroad Bridge No.

500118 on I-95 (Northbound) over CSX Railroad

Wilson County

Bridge No. 970099 on I-95 (Northbound) over Coastal Carolina Railroad (“CLNA”) Railroad

Nash County

Bridge No. 630133 on I-95 (Southbound) over Sapony Creek Bridge No. 630192 on I-95

(Southbound) over CSX Railroad Bridge No. 630201 on I-95 (Northbound) over Stony Creek

Halifax County

Bridge No. 410131 on I-95 (Northbound) over SR 1742 and CSX Railroad Bridge No. 410139 on

I-95 (Northbound) over Roanoke River

Northampton County

Bridge No. 650009 on I-95 (Northbound) over Roanoke River

R-5777D

Fiber Optic Conduit Attachment Systems (Conduit) may be attached to the following structures on US 70:

Carteret County: none

Craven County:

Bridge No. 240085 on US 70 (Eastbound) over SR 1004 and NSRR & NCRR Railroad Bridge No.

240084 on US 70 (Westbound) US 17N / NC 55N over Trent River

Jones County: - none

Lenoir County:

Bridge No. 530062 on US 70 (Westbound) over Neuse River
Bridge No. 530057 on US 70 (Westbound) over Neuse River Overflow

Wayne County:

Bridge No. 950383 on US 70 Bypass (Westbound) over New Hope Rd & NCRR/NSRR Bridge
No. 950381 on US 70 Bypass (Westbound) over Bear Creek

Bridge No. 950379 on US 70 Bypass (Westbound) over Reedy Branch Bridge No. 950366 on US
70 Bypass (Westbound) over Stoney Creek Bridge No. 950358 on US 70 Bypass (Westbound)
over CSX Railroad Bridge No. 950353 on US 70 Bypass (Westbound) over I-795

Bridge No. 950375 on US 70 Bypass (Westbound) over SR 1326 and Little River

Johnston County:

Bridge No. 500103 on US 70 (Westbound) over NCRR/NS Railroad Bridge No. 500521 on US 70
Bypass (Westbound) over CSX Railroad Bridge No. 500601 on US 70 Bypass (Eastbound) over
Little Creek Bridge No. 500579 on US 70 Bypass (Westbound) over Austin Pond

Bridge No. 500597 on US 70 Bypass (Westbound) over Tributary Swift Creek

Bridge No. 500603 on US 70 Bypass (Eastbound) over SR 1563 (Little Creek Church Rd)

HO-0002A, B & C

Fiber Optic Conduit Attachment Systems (Conduit) may be attached to the following structures
on US 74:

Buncombe County:

Bridge No. 100238 on I-26/ US 74 over Hominy Creek

Bridge No. 100214 (EBL) or 100211 (WBL) on I-26/ US 74 over French Broad River

Henderson County:

Bridge No. 440234 (EBL) or 440233 (WBL) on I-26/ US 74 over Cane Creek

Bridge No. 440230 (EBL) or 440228 (WBL) on I-26/ US 74 over Norfolk Southern Railroad

Bridge No. 440212 (EBL) or 440211 (WBL) on I-26/ US 74 over Clear Creek

Bridge No. 440112 (EBL) or 440108 (WBL) on I-26/ US 74 over Green River

Polk County:

Bridge No. 740224 (EBL) or 740225 (WBL) on US 74 over Green River and River Crest Pkwy.

Rutherford County:

Bridge No. 800647 (EBL) or 800646 (WBL) on US 74 over Broad River and Coxe Rd.

Bridge No. 800044 (EBL) or 800047 (WBL) on US 74 over CSX Railroad

Bridge No. 800083 (EBL) or 800084 (WBL) on US 74 over Second Broad River

Bridge No. 800092 (EBL) or 800093 (WBL) on US 74 over Webbs Creek

Cleveland County:

Bridge No. 220006 (EBL) or 220008 (WBL) on US 74 over abandoned railroad

Bridge No. 220048 (EBL) or 220049 (WBL) on US 74 over Sandy Run

Bridge No. 220059 (EBL) or 220050 (WBL) on US 74 over Beaverdam Creek

Bridge No. 220073 (EBL) or 220074 (WBL) on US 74 over Brushy Creek

Bridge No. 220079 (EBL) or 220080 (WBL) on US 74 over First Broad River

Bridge No. 220101 (EBL) or 220102 (WBL) on US 74 over Buffalo Creek

Gaston County:

Bridge No. 350071 on US 74 over Norfolk Southern Railroad

Bridge No. 350082 on US 74 over South Fork Catawba River

Bridge No. 350091 on US 74 over Catawba River

Mecklenburg County:

Bridge No. 590830 (NBL) or 590829 (SBL) on US 74/ I-485 over Norfolk Southern Railroad

Bridge No. 590638 (WBL) or 590639 (EBL) on US 74/ I-485 over Sugar Creek

Bridge No. 590604 (WBL) or 590603 (EBL) on US 74/ I-485 over Little Sugar Creek

Bridge No. 590671 (WBL) or 590670 (EBL) on US 74/ I-485 over McMullen Creek

Bridge No. 590673 (WBL) or 590672 (EBL) on US 74/ I-485 over McAlpine Creek

Bridge No. 590802 (WBL) or 590803 (EBL) on US 74/ I-485 over CSX Railroad

Union County:

Bridge No. 890550 (WBL) or 890551 (EBL) on US 74 Bypass (Monroe Expressway) over South Fork Crooked Creek

Bridge No. 890491 (WBL) or 890492 (EBL) on US 74 Bypass (Monroe Expressway) over Stewarts Creek

Bridge No. 890499 (WBL) or 890500 (EBL) on US 74 Bypass (Monroe Expressway) over Richardson Creek

Bridge No. 890501 (WBL) or 890502 (EBL) on US 74 Bypass (Monroe Expressway) over East Fork Stewart Creek

Bridge No. 890507 (WBL) or 890508 (EBL) on US 74 Bypass (Monroe Expressway) over McIntyre Rd & Meadow Branch

Bridge No. 890511 (WBL) or 890512 (EBL) on US 74 Bypass (Monroe Expressway) over CSX Railroad and US 74

Anson County:

Bridge No. 030004 (WBL) or 030003 (EBL) on US 74 over Lanes Creek

Bridge No. 030033 (WBL) or 030032 (EBL) on US 74 over Brown Creek

Bridge No. 030050 (WBL) or 030049 (EBL) on US 74 over Goulds Fork

Bridge No. 030074 (WBL) or 030073 (EBL) on US 74 over CSX/ Seaboard Coastline Railroad

Bridge No. 030081 (WBL) or 030078 (EBL) on US 74 over Pee Dee River

Richmond County:

Bridge No. 760215 (WBL) or 760216 (EBL) on US 74 Bypass over CSX Railroad & Hitchcock Creek

Bridge No. 760203 (WBL) or 760204 (EBL) on US 74 Bypass over CSX Railroad

Bridge No. 760207 (WBL) or 760208 (EBL) on US 74 Bypass over Marks Creek

Bridge No. 760210 (WBL) or 760209 (EBL) on US 74 Bypass over NC 381 & CSX Railroad

Bridge No. 760211 (WBL) or 760212 (EBL) on US 74 Bypass over CSX Railroad

Scotland County:

Bridge No. 820016 (WBL) or 820009 (EBL) on US 74 over CSX Railroad

Bridge No. 820023 (WBL) or 820022 (EBL) on US 74 over Gum Swamp
Bridge No. 820060 (WBL) or 820057 (EBL) on US 74 over Norfolk Southern Railroad
Bridge No. 820072 (WBL) or 820071 (EBL) on US 74 over Little Creek
Bridge No. 820073 (WBL) or 820094 (EBL) on US 74 over US 74 Bus & CSX Railroad
Bridge No. 820096 (WBL) or 820095 (EBL) on US 74 over Big Shoe Creek
Bridge No. 820098 (WBL) or 820097 (EBL) on US 74 over SR 1436 & CSX Railroad

Robeson County:

Bridge No. 770455 (WBL) or 770454 (EBL) on US 74 over CSX Railroad
Bridge No. 770457 (WBL) or 770456 (EBL) on US 74 over CSX Railroad
Bridge No. 770480 (WBL) or 770481 (EBL) on US 74 over CSX Railroad
Bridge No. 770110 (WBL) or 770465 (EBL) on US 74 over Lumber River Overflow
Bridge No. 770118 (WBL) or 770466 (EBL) on US 74 over Lumber River

Columbus County:

Bridge No. 230004 (WBL) or 230097 (EBL) on US 74 over Lumber River Overflow
Bridge No. 230018 (WBL) or 230398 (EBL) on US 74 over Lumber River Overflow
Bridge No. 230054 (WBL) or 230053 (EBL) on US 74 over White Marsh Swamp
Bridge No. 230384 (WBL) or 230383 (EBL) on US 74 over Friar Swamp
Bridge No. 230385 (WBL) or 230386 (EBL) on US 74 over Friar Swamp
Bridge No. 230387 (WBL) or 230388 (EBL) on US 74 over Friar Swamp
Bridge No. 230086 (WBL) or 230083 (EBL) on US 74 over Livingston Creek

Brunswick County:

Bridge No. 090005 (WBL) or 090004 (EBL) on US 74 over Hood Creek

Project Details

All Conduit shall be on the exterior face of bridge structures.

Conduit shall not be carried through existing backwall or wingwall elements of bridge structures.
Conduit shall not be carried through interior girder bays.

Conduit attachment will not be permitted on girder elements of any bridge structures. When attached, Conduit shall not affect the existing vertical clearance of the bridge.

Epoxy anchor systems will only be permitted for horizontal attachment connections. No over-head or vertically loaded epoxy anchoring connections will be allowed.

Conduit alignment shall be designed without disturbance of the existing approach slabs and guardrail posts. Conduit may be attached to outside face of wingwall.

Conduit shall include Limited Access Junction Boxes (see Project Special Provision- Junction Boxes (Limited Access Facilities) for details) at both ends of each bridge structure. Limited Access Junction boxes shall be located as close to approach shoulder as practical without disturbance to existing approach slabs and guardrail posts.

Conduit shall include all expansion joints as required by manufacturer. Conduit assembly shall also be designed to accommodate bridge thermal movements calculated per Section 6.2.3 of the Structures Management Unit Manual.

Structures Management Unit detail for Fiber Optic Conduit attachment to barrier rail may be used. The standard detail is found in Structures English Cell Library for “Fiber Optic Conduit” and can be found in the Special Provision “Fiber Optic Conduit System (RGC-Hanger)”. Consideration for an alternate conduit material other than Rigid Galvanized Conduit will be made at the discretion of, and upon review of such alternative by, the Department.

D-1.1b. Railroad Coordination Scope of Work

General

The Design-Build Team shall be responsible for coordinating with Norfolk Southern Railway, North Carolina Railroad, Coastal Carolina Railroad (CLNA), and CSX Transportation (Collectively referred to as Railroad Owners) to secure the necessary agreements or amendments to the existing railroad agreements for the addition of conduit attached to the highway bridges over, or bored under, the tracks operated and maintained by each Railroad Owner. Any new agreement or existing agreement modification that is necessary, as determined by NCDOT and/or each Railroad Owner, shall be the responsibility of the Design-Build Team.

Costs

The Design-Build Team shall be responsible for all costs associated with this project to include, but not be limited to, plan reviews, materials furnished by Railroad Owners, signals and communications work, track and related construction by Railroad Companies and/or their representative(s), any delays to train operations or maintenance crews, required insurances, railroad flagging, right of way acquisition, and construction engineering.

The Design-Build Team shall be responsible for all construction required. The Railroad Owners will not incur cost, and the Design Build Team shall not enter into or onto any rail corridor until an Agreement has been amended or executed, insurance requirements are met, and each Railroad Owner receives written authorization to incur cost.

Preparation for Construction within the Existing Railroad Owners Right of Way

- I. The Design-Build Team shall comply with the following applicable documents, unless noted otherwise elsewhere in this RFP and / or a design exception is received from the Railroad Owner and NCDOT via the NCDOT Design-Build Unit:
 - A. *AREMA Manual for Railway Engineering, latest edition*
 - B. *Norfolk Southern Railway – Standard Specifications for Materials and Construction, latest edition*
 - C. *Norfolk Southern Railway - Public Projects Manual, latest edition*
 - D. *CSX Transportation Public Project Information, latest edition*
 - E. *Federal Aid Policy Guide 23 CFR 140I*
 - F. *Federal Aid Policy Guide 23 CFR 646*
 - G. *NCDOT Construction Manual Section 105-8*
 - H. *NCDOT Standard Specifications for Roads and Structures, Section 107-9 (Excluding Paragraph 2)*
 - I. *North Carolina Administrative Code Section T19A: 02B, 0150 through 015*
- II. The Design-Build Team shall verify the number of trains per day and the maximum speed allowed with the Railroad Owners. Railroad inspection and maintenance requirements, in addition to normal train operations, will occur that may impact construction activities.

- III. Railroad traffic shall be maintained at current levels at all times.
- IV. The Design-Build Team shall design and construct conduit attachments over existing track that will not decrease any existing vertical or horizontal clearance from the existing track to the bridge.

Arrangements for Protection and Adjustments to Existing and Proposed Railroad Crossings Surface and Roadbeds:

- I. The Design-Build Team shall make the necessary arrangements with the Railroad Owners for the installation of temporary grade crossing surfaces, if necessary. Temporary grade crossing surfaces shall conform to the Railroad Owners standard. All crossing surfaces, including but not limited to all grade crossing signals, gates, and any related train control signals/communications systems, shall be procured, installed and removed by the Railroad Company, or their representative, at the Design-Build Team's expense.

The Design-Build Team shall not commence any work on the Railroad Owners right of way / easement until all agreements have been executed, insurance acquired and approved in accordance with the Railroad Owners policies and procedures, and all construction plans have been approved by NCDOT and Railroad Owners. The Design-Build Team shall make the necessary arrangements with the Railroad Owners that are required to protect against property damage that may result in loss of service, expense, or loss of life. The Design- Build Team shall be responsible for all damage to the Railroad Owners resulting from their operations and the Railroad Owners may issue a stop order until all dangerous situations are remedied.

The Design-Build Team shall be responsible for providing Railroad Protective Liability Insurance for Bodily Injury Liability, Property Damage Liability, and Physical Damage to Property to the Railroad Owners and the Railroad Operators, identifying the Railroad Owners as the insured party, during the duration of the time work is being performed on or over the railroad right of way / easement. Separate policies shall be required for each Railroad Owner or Operator. The Design-Build Team shall be responsible for verifying and obtaining the appropriate insurance and coverage with the Railroad Owners. Other insurance requirements, including those for all subcontractors, are detailed in the documents referenced herein. Although not anticipated, the Design-Build Team shall be responsible for any required Roadway Worker Protection training / certifications.

- II. Prior to any utility installation, removal or relocation across the Railroad Owners right of way / easement, including but not limited to pipelines and / or electrical and communication cable routings over or under railroad-owned facilities, the Design-Build Team shall coordinate with the Railroad Owners and private utility owners to obtain the necessary permits and secure the appropriate Encroachment Agreements. At a minimum, the Design- Build Team shall assist the private utility owners in obtaining their respective Encroachment Agreements in the private utility owner's name. In accordance with the requirements noted herein and the Railroad Owners' specifications, the private utility owner will be responsible for all associated fees and provide the necessary insurance coverage.

All work associated with any utility installation across the Railroad Owners' right of way / easement shall adhere to the requirements noted herein and the Railroad Owners' specifications.

- III. After negotiations among the Department, the Design-Build Team and the Railroad Owners have been finalized, and approval obtained from the Board of Transportation, the Design-Build Team shall submit executed agreements and plans to NCDOT's State Structures Engineer, via the NCDOT Design-Build Unit, for plan approval and final agreement execution by NCDOT, prior to authorizing railroad work. After approval by NCDOT, one copy of the executed agreement will be returned to the Design-Build Team and one copy forwarded to the NCDOT's Resident Engineer, prior to any construction work by the Design-Build Team or NSR / CSXT. This section particularly applies if a modification to an agreement is necessary.

Coordination with Norfolk Southern Railway and North Carolina Railroad

The Design-Build Team shall coordinate with NSR through the NSR General Engineering Consultant ("GEC"), TGS Engineers. The Design-Build Team shall coordinate with Mr. Jeffrey Brittain at TGS Engineers, 107-A Mica Avenue, Morganton, NC 28655, (828) 437-4681 Ext. 16), to obtain plan approval and a partially executed legal agreement with NSR and the Department of Transportation (which includes NCDOT Rail Division plan review) as the parties in the agreement for the NS overpass grade separation conduit installation. For crossings of the rail line owned by NCR and operated by NS, The Design-Build Team shall coordinate with NCR through the NCR Vice President, Mr. Donald Arant, 2809 Highwoods Blvd, Raleigh, NC 27604 at 919 954 7601.

Plan approval shall be based on multiple submittals including at minimum a preliminary plan submittal and 90% plan submittal. The preliminary plan submittal to the NCR/NS shall include the NSR's "Overpass Grade Separation Data Sheet," as applicable, appropriate roadway plan sheets showing impacts to the right of way / easement, erosion control plans, and drainage calculations for any drainage on or across the NCR/NS's right of way / easement, and bridge plans showing a vertical and horizontal alignment and preliminary general drawings. The 90% plan submittal shall include all necessary details, insets, and notes for construction with no substantial changes to the alignments or layout shown in the preliminary plan submittal and all supporting design calculations. An electronic copy (pdf format) of all review plans and associated data shall be submitted to NCR/NS through the NCDOT Design-Build Unit. If any re-submittals of plans or any additional information is required, an electronic copy (pdf format) shall be submitted to the NCDOT Design-Build Unit for forwarding to the NCR/NS. Release for Construction ("RFC") Plans shall be submitted to NCR/NS before construction begins. For RFC Plans, a minimum of three (3) half- size sets and an electronic copy of the plans (pdf format) shall be submitted to the NCDOT Design-Build Unit for forwarding to the NCR/NS. Working Drawings affecting the NCR/NS's operations and / or right of way / easement shall follow the submittal process as outlined in the 2018 NCDOT *Standard Specifications for Roads and Structures* or Special Provisions. The Department will review all agreement modifications prior to submittal to NCR/NS. The Department will execute and distribute the agreement modifications within 14 calendar days of Board of Transportation approval. The agreements, and any modifications thereto, shall include necessary Force Account items, including but not limited to, preliminary engineering, construction engineering, crossing surfaces, track materials, track construction, signals and flagging. The railroad agreements state that the Department will be responsible for payment of the NSR's Force Account work and NSR expenses; however, the Design-Build Team shall reimburse the Department for these costs including all Force Account estimate overruns. This reimbursement shall be incidental to the lump sum price bid for the project. Upon request, the Department will provide copies of the NSR invoices to the Design-Build Team

for review. The Design-Build Team shall have ten (10) days to provide written comments to the NCDOT Design-Build Unit, after which the Department will pay the invoice. The Design-Build Team shall be responsible for maintaining records to verify the invoice items.

Coordination with CSX Transportation

The Design-Build Team shall coordinate with the primary owner of CSXT through the CSXT GEC, to be named at project kickoff. The Design-Build Team shall coordinate with Mr. Troy Creasy of CSX, 4900 Old Osborne Tnpke., Suite 200, Richmond, VA 23231, (804) 226-7718 to obtain coordination procedures for plan approval and, if needed, a partially executed legal agreement with CSXT and the NCDOT as the parties in the agreement for proposed roadway work. The Department will review the agreement prior to submittal to the CSXT. The Department will execute and distribute the Agreement within 14 calendar days of Board of Transportation approval. The agreement, and any modifications thereto, shall include necessary Force Account items, including but not limited to, preliminary engineering, construction engineering, flagging, signal and communication lines, and other work performed by the CSXT, as necessary. CSXT has sole authority to determine the need for flagging required to protect its operations and property. The railroad agreements state that the Department will be responsible for payment of the CSXT's Force Account work and CSTX expenses; however, the Design-Build Team shall reimburse the Department for these costs including all Force Account estimate overruns. This reimbursement shall be incidental to the lump sum price bid for the project. Upon request, the Department will provide copies of the CSXT invoices to the Design-Build Team for review. The Design-Build Team shall have ten (10) days to provide comments to the Department, after which the Department will pay the invoice. The Design-Build Team shall be responsible for maintaining records to verify the invoice items.

The preliminary plan and final plan submittals to CSXT shall include roadway plans, the Railroad's "Overhead Bridge Crossing Data," appropriate roadway plan sheets showing impacts to the CSXT right of way / easement, erosion control plans, and drainage calculations for any drainage on or across the CSXT's right of way / easement and bridge plans showing a vertical and horizontal alignment and preliminary general drawings. Electronic versions of the preliminary plans, final plans and data shall be submitted to Arcadis through the NCDOT Design-Build Unit. If plan re-submittals, RFC Plans and / or any additional information are required, the Design-Build Team shall submit electronic versions to Arcadis through the NCDOT Design-Build Unit. Working Drawings affecting CSXT's operations and / or right of way / easement shall follow submittal process as outlined in the 2018 NCDOT *Standard Specifications for Roads and Structures* or Special Provisions.

Coordination with Coastal Carolina Railroad (CLNA)

The Design-Build Team shall coordinate with Alan Bridgers, General Manager Carolina Coastal Railway at 252-237-8259 to obtain coordination procedures for plan approval and, if needed, a partially executed legal agreement with CLNA and the NCDOT as the parties in the agreement for proposed roadway work. The Department will review the agreement prior to submittal to the CLNA. The Department will execute and distribute the Agreement within 14 calendar days of Board of Transportation approval. The agreement, and any modifications thereto, shall include necessary Force Account items, including but not limited to, preliminary engineering, construction engineering, flagging, signal and communication lines, and other work performed by the CLNA,

as necessary. CLNA has sole authority to determine the need for flagging required to protect its operations and property. The railroad agreements state that the Department will be responsible for payment of the CLNA's Force Account work and CLNA expenses; however, the Design-Build Team shall reimburse the Department for these costs including all Force Account estimate overruns. This reimbursement shall be incidental to the lump sum price bid for the project. Upon request, the Department will provide copies of the CLNA invoices to the Design-Build Team for review. The Design-Build Team shall have ten (10) days to provide comments to the Department, after which the Department will pay the invoice. The Design-Build Team shall be responsible for maintaining records to verify the invoice items.

The preliminary plan and final plan submittals to CLNA shall include roadway plans, appropriate roadway plan sheets showing impacts to the CLNA right of way / easement, erosion control plans, and drainage calculations for any drainage on or across the CLNA's right of way / easement and bridge plans showing a vertical and horizontal alignment and preliminary general drawings. Electronic versions of the preliminary plans, final plans and data shall be submitted through the NCDOT Design-Build Unit. If plan re-submittals, RFC Plans and / or any additional information are required, the Design-Build Team shall submit electronic versions through the NCDOT Design-Build Unit. Working Drawings affecting CLNA's operations and / or right of way / easement shall follow submittal process as outlined in the 2018 NCDOT *Standard Specifications for Roads and Structures* or Special Provisions.

Coordination with NCDOT Rail Division

All plans submitted to NCRR, NSR, CLNA and / or CSXT, as required above, shall be submitted to the NCDOT Rail Division through the NCDOT Design-Build Unit.

D-1.1c. Transportation Management Scope of Work

Laws, Standards, and Specifications

The Design-Build Team shall design the Transportation Management Plan (“TMP”) in accordance with the requirements of this RFP and the version of the standards listed below that are effective on the Technical Proposal submittal date.

- *NCDOT Standard Specifications for Roads and Structures*
- *NCDOT Roadway Standard Drawings*
- *FHWA Manual on Uniform Traffic Control Devices (“MUTCD”)*
- *NCDOT Supplement to the Manual on Uniform Traffic Control Devices (“NCSMUTCD”)*
- *AASHTO A Policy on Geometric Design of Highways and Streets*
- *NCDOT Roadway Design Manual*
- *AASHTO Roadside Design Guide*
- *Americans with Disabilities Act of 1990 (“ADA”)*
- *FHWA Standard Highway Signs*
- *NCDOT Design-Build Submittal Guidelines*
- *FHWA Rule on Work Zone Safety and Mobility (23 CFR 630 Subpart J and K)*
- *Transportation Research Board Highway Capacity Manual*
- *NCDOT Transportation Management Plans Design Manual*

References

The Design-Build Team shall use the references provided on the site below as supplementary guidelines and requirements for the design and implementation of the TMP.

<https://connect.ncdot.gov/projects/WZTC/Pages/default.aspx>

Prequalification

The Design-Build Team shall select a Private Engineering Firm (“PEF”) that has experience developing TMPs on comparable projects for the NCDOT and maintains prequalification code 00541 (Traffic Management Plan - Level 1 and 2).

Transportation Management Plans

The Design-Build Team shall prepare TMP that include Temporary Traffic Control Plans (“TTCP”), an Incident Management Plan (“IMP”) and a Traffic Operations Plan (“TOP”).

The Design-Build Team shall produce TMPs for each phase of work that impacts road users. The TMPs shall include details of all traffic control devices, and signage applicable to each phase of work. The information on the TMP shall be of sufficient detail to allow verification of design criteria and safety requirements. The Design-Build Team shall develop TMPs that include

procedures to communicate TMP information to the public about road and travel conditions within the work zone and affected roadway network.

A Transportation Management Phasing Concept (“TMPC”) shall be prepared by the Design-Build Team to present the Design-Build Team’s approach to all areas covered under the TMP, including hauling of materials to, from, and within the project right of way. The Design-Build Team shall include the TMPC in the Technical Proposal. The Design-Build Team shall submit the TMPC for Department review and acceptance and shall address NCDOT comments on the TMPC prior to commencing production of the TMP for each phase of work or any construction. Any changes to the TMPC after acceptance by NCDOT shall require a submittal for review prior to any future phasing submittals.

Lane and Road Closure Notification

Lane Closure Notice (“LCN”)

The Design-Build Team shall issue a LCN to NCDOT and affected government entities a minimum of thirty (30) calendar days prior to the publication of any notices or placement of any traffic control devices associated with lane closures, or other change in traffic control requiring lane closures. The Design-Build Team will be allowed to issue a single LCN for multiple / consecutive lane closures that occur in the same location.

For an LCN utilizing a non-NCDOT controlled facility, the Design-Build Team shall secure concurrence in writing from the controlling government entity. An LCN shall contain the estimated date, time, duration, and location of the proposed work. The Design-Build Team shall keep NCDOT informed of any and all changes or cancellations of proposed lane closures prior to the date of their implementation.

If an emergency condition should occur, an LCN shall be provided to NCDOT within two (2) days after the event. For non-NCDOT controlled facilities, the Design-Build Team shall immediately notify the controlling government entity.

General Design and Construction Requirements

Maintenance of Access

Maintain access to all businesses, schools, residences, bus stops, mass transit facilities, park and ride lots, and emergency services at all times. Prior to incorporation, obtain written approval from the Engineer on the method to maintain access.

In accordance with the Department’s Policy on Evaluating Temporary Accommodations for Pedestrians during Construction, found on the website noted below, the Design-Build Team shall maintain pedestrian accommodations in all areas as follows:

Roadway	Minimum Level of Pedestrian Accommodation
US 70 from Hestron Drive to the NC Ports, Morehead City	Basic
US-74 from SR-1472 (Salisbury St) to SR-1714 (Stanback Ferry Ice Plant Rd), Wadesboro	Basic
Any -Y- Line containing sidewalks, shared use paths or worn foot paths	Basic
All Other Roads	Absence of Need

<https://connect.ncdot.gov/projects/WZTC/Documents/AccomPedinWZProc.pdf>

Traffic Control Devices

The Design-Build Team shall use traffic control devices that conform to all NCDOT requirements and are listed on the NCDOT Approved Products List. The Approved Products List may be referenced on the website noted below:

<https://apps.ncdot.gov/vendor/approvedproducts/>

The use of any devices that are not shown on the NCDOT Approved Products List shall require written approval from the Design-Build Unit prior to incorporation.

When within 1000’ of a signalized intersection, channelizing device spacing shall not exceed a distance in feet equal to the posted speed limit. When beyond 1000’ to a signalized intersection, channelizing device spacing shall not exceed a distance in feet equal to twice the posted speed limit. Channelizing devices shall be spaced ten feet on-center in radii. Channelizing devices shall be two feet off the edge of an open travelway when lane closures are not in effect. Skinny drums shall only be allowed as defined in Section 1180 of the *NCDOT Standard Specifications for Roads and Structures*.

Portable Changeable Message Signs (“PCMS”) should be placed off the shoulder of the roadway and outside of the clear zone. If a PCMS must be placed on the roadway shoulder or within the clear zone, it shall be delineated with retroreflective temporary traffic control (“TTC”) devices. When PCMSs are not being used to display TTC messages, they should be relocated such that they are outside of the clear zone and turned away from traffic. If relocation is not practical, the PCMS shall be delineated with retroreflective TTC devices.

Lane and Shoulder Requirements

On I-95, US 70, and US74, the Design-Build Team shall not install more than two (2) miles of lane closure in any one direction, measured from the beginning of the merge taper to the end of the lane closure.

On two-lane, two-way facilities, that cross I-95 or US 70, the Design-Build Team shall not install more than five hundred (500) feet of lane closure in any one direction on any roadway within the project limits or in conjunction with this project, measured from the beginning of the merge taper to the end of the lane closure.

The Design-Build Team shall remove lane closure devices from the lane when work is not being performed behind the lane closure or when a lane closure is no longer needed.

The Design Build Team shall place the necessary traffic control procedures for either a Lane closure, Shoulder closure or the display of portable Advance Warning signs using NCDOT Roadway Standard Drawings when personnel and /or equipment are working within the following distances from an open travel lane and not protected by existing traffic barrier:

All Interstates and all roads with a posted speed limit of 50 MPH or greater

- From 10 feet or less, close the nearest open travel lane.
- From 11 to 20 feet, close the nearest open shoulder.
- From 21 to 30 feet, display Utility Advance Warning signs (W21-7).
- Greater than 30 feet, no traffic control signs, or devices are required.

All other roads:

- From 5 feet or less, close the nearest open travel lane.
- From 6 to 15 feet, close the nearest open shoulder.
- From 16 to 20 feet display Utility Advance Warning signs (W21-7).
- Greater than 20 feet, no traffic control signs, or devices are required.

Impacts to Other Network Roadways

The Design-Build Team shall coordinate with the Division Maintenance Engineer, Resident Engineer, Division Traffic Engineer, Rail Division, and Statewide Transportation Operations Center (“STOC”) to manage traffic operations within the work zone and other roadways within the network that may be affected by the work zone activities. Coordination shall include providing notification of planned lane or shoulder closures, traffic management, access management, and incidents.

The Design-Build Team shall take steps to minimize disruptions to existing roadway facilities during construction and shall demonstrate how the traffic control phasing minimizes inconvenience to motorists on all roads.

Signing

When portable work zone signs are not in use for periods longer than 30 minutes, the Design-Build Team shall lay the portable work zone sign flat on the ground and collapse the sign stand and lay it flat on the ground.

The Design-Build Team shall ensure proper signing is in place at all times during construction as required by the MUTCD. Guide signs shall be maintained or modified as required by the TMP throughout the project duration. All temporary signing shall be shown on the Traffic Control Plans or Temporary Signing Plans to be reviewed and approved by the Work Zone Traffic Control Section and the Signing and Delineation Unit prior to incorporation.

Project Requirements and Time Restrictions

All time restrictions and notes shall be included in the TMP General Notes, unless noted otherwise elsewhere in this RFP.

Intermediate Contract Times 2 and 6 for Lane Narrowing, Lane Closure, Holiday and Special Event Restrictions

Except as allowed otherwise elsewhere in this RFP, the Design-Build Team shall maintain the existing traffic pattern and shall not close or narrow a single lane of traffic during the times listed in ICT 2 and 6.

Intermediate Contract Time	Facility	Days	Time Restrictions
2	I-95, including all ramps and loops	Monday through Thursday	7:00 a.m. to 7:00 p.m.
		Friday through Sunday	7:00 a.m. to 9:00 p.m.
	I-40 and US-70 from I-40 to NC-581, including all ramps and loops	Monday through Sunday	5:00 am to 9:00 pm
	I-85, I-485, and I-26, including all ramps and loops	Monday through Sunday	6:00 am to 9:00 pm
3	US-70, east of NC-581 and more than 1 mile from a signalized intersection	Monday through Friday (Year-round)	5:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m.
		Friday through Sunday (May 15 thru Sept. 15)	Friday at 5:00 a.m. Until Sunday at 8:00 p.m.
	US-70, east of NC-581 and within 1 mile of a signalized intersection	Monday through Thursday	5:00 a.m. to 7:00 p.m.
		Friday through Sunday	Friday at 5:00 a.m. Until Sunday at 8:00 p.m.
4	US-74, US-74 Bypass, & US-74 Alternate (Mecklenburg, Union, Gaston, Cleveland, and Brunswick Counties), including all ramps and	Monday through Sunday	6:00 am to 9:00 pm

	loops		
5	US-74 (other counties and more than 1 mile from a signalized intersection), including all ramps and loops.	Monday through Friday	6:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m.
	US-74 (other counties and within 1 mile of a signalized intersection), including all ramps and loops	Monday through Friday	6:00 a.m. to 7:00 p.m.
		Saturday and Sunday	9:00 a.m. to 6:00 p.m.
6	-Y- Lines with AADT less than 8,000	Monday through Sunday	No Restrictions
	-Y- Lines with AADT 8,000-20,000	Monday through Friday	6:00 a.m. to 9:00 a.m. And 4:00 p.m. to 7:00 p.m.
7	-Y- Lines with AADT greater than 20,000	Monday through Sunday	6:00 a.m. to 7:00 p.m.
	NC-146 and NC-280 (Buncombe County)	Monday through Friday	6:00 a.m. to 9:00 p.m.
		Saturday and Sunday	6:00 a.m. to 9:00 p.m.

Official AADT volumes for determining time restrictions are available at the following link:

<https://connect.ncdot.gov/resources/State-Mapping/Pages/Traffic-Volume-Maps.aspx>

In addition, the Design-Build Team shall not close or narrow a lane of traffic on the aforementioned facilities, detain, and / or alter the traffic flow on or during holidays, holiday weekends, special events, or any other time when traffic is unusually heavy. At a minimum, these requirements / restrictions shall apply to the following schedules:

- For New Year's between the hours of 5:00 a.m. December 31st and 9:00 p.m. January 2nd. If New Year's Day is on a Friday, Saturday, Sunday or Monday then between the hours of 5:00

a.m. December 31st and 9:00 p.m. the following Tuesday.

- For Easter, between the hours of 5:00 a.m. Thursday and 9:00 p.m. Monday.
- For Memorial Day, between the hours of 5:00 a.m. Friday and 9:00 p.m. Tuesday.
- For Independence Day, between the hours of 5:00 a.m. July 3rd and 9:00 p.m. July 5th. If Independence Day is on a Friday, Saturday, Sunday or Monday, then between the hours of 5:00 a.m. the Thursday before Independence Day and 9:00 p.m. the Tuesday after Independence Day.
- For Labor Day, between the hours of 5:00 a.m. Friday and 9:00 p.m. Tuesday.
- For Thanksgiving Day, between the hours of 5:00 a.m. Tuesday and 9:00 p.m. Monday.
- For Christmas, between the hours of 5:00 a.m. the Friday before the week of Christmas Day and 9:00 p.m. the following Tuesday after the week of Christmas Day.

Liquidated Damages for Intermediate Contract Time #2 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on I-95, I-40, I-85, I-485, I-26 and US-70 from I-40 to NC-581, including all ramps and loops, are \$2,500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #3 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on US-70 east of NC-581, including all ramps and loops, are \$500.00 per hour or any portion thereof.

Liquidated Damages for Intermediate Contract Time #4 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on US-74, US-74 Bypass, & US-74 Alternate (Mecklenburg, Union, Gaston, Cleveland, and Brunswick Counties), including all ramps and loops, are \$500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #5 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on US-74 (other Counties), including all ramps and loops, are \$500.00 per hour or any portion thereof.

Liquidated Damages for Intermediate Contract Time #6 for the above lane narrowing, lane closure, holiday and special event time restrictions on all -Y- Line Roads with AADTs between 8,000 and 20,000 are \$500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #7 for the above lane narrowing, lane closure, holiday and special event time restrictions on all -Y- Line Roads with AADTs greater than 20,000, NC-146, and NC-280 are \$1250.00 per 15-minute period or any portion thereof.

D-1.1d. ITS Scope of Work

General

Design, furnish, and install new ITS Communications Fiber as described in this RFP within existing R/W limits. Integrate the new fiber with the existing ITS devices as well as any existing ITS fiber within the project limits. ITS devices include but are not limited to CCTV Cameras, Dynamic Message Signs and Traffic Signal Systems. Major items of work include, but are not limited to, the following:

- Approximately 600 Miles of ITS Trunk Line Fiber
- Approximately 600 Miles of ITS Device Line Fiber
- Drop Cables to Existing CCTV Cameras
- Drop Cables to Existing Dynamic Message Signs (“DMS”)
- Drop Cables to Existing Signal Systems
- Drop Cables to Weigh Stations
- Drop Cables to Rest Areas
- Drop Cable to Remote Weather Information System (“RWIS”)
- 35 ITS Fiber Hub Cabinets
- Cellular Connected Vehicle Site
- Junction boxes (Electrical and Oversized)
- Wood Poles
- Electrical service equipment

Furnish and install guardrail to protect ITS devices and ITS Fiber Hub Cabinets as required.

A pre-design meeting shall take place between the NCDOT ITS Section, the Design-Build Team, the Division 2, 3, 4, 5, 6, 8, 10, 12, 13, 14 Traffic Engineers, the Regional ITS Engineers, STOC Engineer and any other pertinent NCDOT personnel before ITS designs begins. The pre-design meeting shall, at a minimum, address equipment types, intended placement locations and scheduled installation and removal of devices. ITS Plan submittals shall only be reviewed and accepted by the NCDOT ITS Section after this pre-design meeting.

Acceptance of plans does not relieve the Design-Build Team of any obligation to design and build a complete system that meets the functional requirements of the RFP. The Design-Build Team is solely responsible for the correctness and constructability of the designs meeting all applicable standards.

The Design-Build Team shall coordinate with the Division Traffic Engineer, the Regional Traffic Engineer, the ITS Design Unit and the STOC throughout the project duration.

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.

Furnish and install all equipment and perform all work in accordance with ITUT, IEEE and TIA standards as well as in accordance with the relevant ITS Project Special Provisions found elsewhere in this RFP, the 2018 NCDOT *Standard Specifications for Roads and Structures*, the 2018 NCDOT *Roadway Standard Drawings* and the *ITS & Signals Generic Project Special Provisions Version 18.3* or the latest version at the time of letting found at the following website:

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

Design Requirements

Communications

Design, furnish and install the field-to-center communication network using Fiber-optic cable. For all equipment not specified herein, provide product specifications for the Department’s review and approval prior to incorporation. Furnish and install all new field equipment within the project limits.

The Department will furnish all cellular modems used on the project. The Design Build Team shall request the modems through the Engineer at least eight (8) weeks prior to scheduled installation.

The MCAS property that lies between Holly Drive and Jackson Drive in Havelock must be avoided. The fiberoptic cable must be installed within NCDOT right-of-way in the grassy median between Mimosa Drive and US Highway 70 west, where there is an existing line of trees and power poles.

The conduit shall be placed at a location which will avoid conflicts with future roadway widening (8-lane typical), within Control-of-Access areas. All other conduit shall be placed within the existing right-of-way to the farthest, most outer edge of right-of-way, while being in compliance with all environmental permits and minimizing utility impacts to the greatest extent possible.

The Design Build Team shall place the conduit and trunk lines at all interchanges, up and down interchange ramps to avoid future relocations. Boring underneath overpass structures at interchanges will not be allowed.

NCDOT 144-Fiber Trunk Line

Design, furnish and install a minimum 144-fiber trunk line that runs between ITS hub cabinets. This trunk line is to run expressed between hub cabinets and should not be cut or spliced unless necessary for fiber installation purposes. All 144 fibers are to be terminated in a fiber-optic interconnect center in each hub cabinet and jumpered through. Label this 144-fiber cable and its interconnect centers “NCDOT ITS TRUNK LINE” in all junction boxes and hub cabinets. Store 50 feet of spare Trunk cable in each junction box and hub cabinet. **ITS devices should NOT be spliced into this 144-fiber trunk line.** See the ITS Device Line concept drawing included in this RFP for additional information.

NCDOT 144-Fiber ITS Device Line

Design, furnish and install a minimum separate 144-fiber ITS device line that runs between hub cabinets and connects all ITS devices between the hub cabinets back to the nearest hub cabinet. These devices are listed later in this RFP. All 144 fibers are to be terminated in a fiber-optic interconnect center in each hub cabinet and jumpered through. Label this 144-fiber cable and its interconnect centers “NCDOT ITS DEVICE LINE” in all junction boxes and hub cabinets. Store 50 feet of spare Trunk cable in each junction box and hub cabinet. See the ITS Device Line concept drawing included in this RFP for additional information. Device line buffer tubes should be assigned as follows:

- CCTV, DMS, Signal Systems and other NCDOT facilities starting in Blue Buffer Tube
- Rest Areas in the Aqua buffer tube

- Weigh Stations in the Rose buffer tube

NCDOT 12-Fiber Drop Cable

Design, furnish and install 12-fiber drop cables from the ITS Device Line fiber to each ITS device in the project limits. Drop cables should be spliced into the ITS Device Line with a splice enclosure and terminated in the ITS device cabinet with a fiber-optic interconnect center. Drop Cables for devices that are co-located with or within 100 feet of a hub cabinet may be terminated in a fiber optic interconnect center in the hub cabinet. Label these 12 fiber drop cables and their interconnect centers “<DEVICE ID> DROP CABLE” in all junction boxes and hub cabinets. Store 50 feet of spare Drop cable in each junction box and ITS device cabinet.

NCDOT ITS Fiber Hub Cabinet

Design, furnish and install ITS Fiber Hub Cabinets as specified in the project special provisions and detail drawings included with this RFP. Hub cabinets should be climate controlled NEMA 4, 340 ITS cabinets adequately sized to accommodate all electrical equipment and communications equipment including but not limited to four (4) minimum 144-fiber interconnect centers, one (1) Ethernet hub switch, one (1) Uninterruptable Power Supplies (“UPS”) and the cabinet air conditioning system. Approximate hub cabinet locations are as follows:

- NC/VA state line – HUB 13
- I-95 exit 173 – HUB 12
- I-95 exit 160 – HUB 11
- I-95 exit 138 (US 64) – HUB 10
- I-95 exit 119 (US 265/I-795) – HUB 9
- I-95 south of exit 97 (US 70 BYP) – HUB 8
- I-95 exit 81 (I-40) – HUB 7
- I-95 exit 73 (US 421) – HUB 6
- I-95 exit 56 (Bus 95) – HUB 5
- I-95 exit 38 (Future I-295) – HUB 4
- I-95 exit 22 – HUB 3
- I-95 exit 13 (I-74) – HUB 2
- NC/SC state line – HUB 1
- US 70 Bypass at I-40 and NC 540 – HUB 14
- US 70 at I-795 (Goldsboro) – HUB 15
- US 70 at Harvey Parkway (Kinston) – HUB 16
- US 70 at Trenton Rd. (MM 400) – HUB 17
- US 70 at S. Glenburnie Rd. (New Bern) – HUB 18
- US 70 at Slocum Rd. (Havelock) – HUB 19
- US 70 at NC Port (Morehead City, North side of road just before the Newport River Bridge) – HUB 20
- US 74 at I-140 (Wilmington) – HUB 21
- US 74 at NC 211 (Bolton) – HUB 22
- US 74 at US 76 – HUB 23
- I-74 at US 501 (Laurinburg) – HUB 24
- US 74 at US 1 (Rockingham) – HUB 25
- US 74 at US 52 (Wadesboro) – HUB 26
- US 74 at US 74 BYP (Monroe Expy East) – HUB 27

- I-485 at I-77 (Existing Node 20*) – HUB 29
- I-485 3300' North of I-85 South Interchange (Existing NCDOT Hub 6) – HUB 30
- I-85 at US 74 Interchange – HUB 31
- US 74 at US 74 BYPASS (Shelby) – HUB 32
- US 74 at US 221 (Forest City) – HUB 33
- US 74 at I-26 Interchange – HUB 34
- I-26 at US 64 (Hendersonville) – HUB 35
- I-26 at I-40 Interchange (Existing NCDOT Splice Cabinet*) – HUB 36

* - Existing hub to be replaced per this Scope of Work.

HUB numbers are for the purposes of this project only. Do not mark the HUB cabinets with these numbers. HUB 28 was intentionally skipped in the numbering.

HUB 8 at I-95 exit 97 (US 70) will have 2 backup ISP circuits installed by DIT. The design build team shall coordinate with the engineer and DIT to facilitate the installation of these circuits during the installation of this hub cabinet.

HUBs 1, 13, 20, 21, 27, 29 & 36 will be the end points of the fiber at these ends of the project. The fiber trunk lines will terminate in these hub cabinets in fiber-optic interconnect centers. The design-build team shall loop all fibers of each trunk cable back with jumpers in these interconnect centers in a manner that creates a continuous loop. (Example: Blue buffer tube, loop fiber 1 back to fiber 3, fiber 2 back to fiber 4, etc.)

Existing ITS Integration Locations

US 70 Bypass at I-40

The ITS hub cabinet at US 70 Bypass and I-40 will connect to the 144-fiber ITS cables along I-40 (running north and south installed under I-5111) and to existing 144-fiber ITS cable along NC-540 (running west, installed under R-2828). The design build team shall extend these 3 cables into the new hub cabinet along with the two new 144-fiber Trunk lines installed under this project and terminate all 144 fibers of each cable in a fiber-optic interconnect center. Jumper the two 144-fiber I-40 cables through and loop the two new 144-fiber cables back with jumpers.

U-5713/R-5777A&B

U-5713/R-5777A&B will install 4x two-inch conduits and 1x 144-fiber cable along US 70 in James City from Thurman Rd. to north of Elder St. The design-build team may use this existing conduit and fiber as the ITS Device Line. The design build team shall be responsible for ensuring conduit and fiber are usable and shall be responsible for any repairs needed to use this fiber. The design-build team shall resplice the existing cable as needed to follow the same configuration as the rest of the fiber installed under this project.

US 74 at I-140

The Design-Build team shall install new HUB 21 at the US 74 & I-140 interchange. Route the Existing 72-fiber cable running both directions along I-140 and the existing drop cables into the new hub cabinet and terminate all fibers of each cable in separate interconnect centers.

I-95

US 74 fiber will tie into the I-95 fiber at HUB 2.

HUB 29 (Existing Node 20)

The Design-Build team shall replace existing Node 20 at I-485 and I-77 with new INFRA HUB 29. Route the 144-fiber NCDOT cable from the east and the 12-fiber NCTA drop cable (both installed under I-5507) as well as the two new 144-fiber cables from the west into this hub cabinet. Terminate all fibers of each cable in separate interconnect centers and jumper them through.

HUB 30 (Existing HUB 6)

The Design-Build team shall route all four 144-fiber cables, two from I-85 to the west and two from I-485 to the south, into existing NCDOT HUB 6 roughly 3300 feet north of the I-85/I-485 interchange. Terminate all fibers of all four cables in separate interconnect centers in the existing racks and jumper them through.

Forest City HUB Cabinet

The Design-Build team shall run a 48-fiber cable in a separate conduit from new HUB 33 to the DIT Data Center at 1371 Old Caroleen Rd Forest City, NC 28043. Terminate all 48 fibers in an interconnect center in HUB 33 and in the existing racks in the Data Center. Coordinate with DIT to identify building entrance and existing rack location for the fiber.

HUB 36

The design-Build Team shall replace the existing splice cabinet located at the I-26 & I-40 interchange (installed under I-4700) with a new INFRA hub cabinet. The design build team shall maintain all existing communications equipment located in this cabinet.

Hub Ethernet Switch

Hub switches shall be installed in each hub cabinet according to the Project Special Provisions and detail drawings included with this RFP. Hub switches shall be procured, programmed and installed by the DIT. Contact the Engineer to request the hub switches from DIT 4 weeks in advance of installation. Allow one week for DIT to install each hub switch and limit requests to no more than 3 hub switches at a time unless otherwise instructed by the engineer or DIT.

Field Ethernet Edge Switch

Ethernet edge switches will be furnished, installed and programmed by the design build team. DIT will provide the edge switch programming information to the Design build team. Design build team

will provide Ruggedcom model RS900G or Comnet model CNGE11FX3TX8MS edge switches with minimum 2 100/1000 Base X fiber-optic ports and 4 copper RJ45 ports..

Ensure that all fiber-optic ports operate at 1310 or 1550 nanometers in single mode. Design all SFP ranges according to the actual distance between devices in the field. Provide Type LC connectors for the optical ports. Do not use mechanical transfer registered jack (MTRJ) type connectors. Ensure that each optical port consists of a pair of fibers; one fiber will transmit (TX) data and one fiber will receive (RX) data. Ensure that the optical ports have an optical power budget of at least 15 dB. NCDOT utilizes a “2-fibers in 2-fibers out” network design from device to device.

Ensure all copper ports are RJ-45 and auto-negotiate speed (i.e., 10/100/1000 Base) and duplex (i.e., full or half). Ensure that all are compliant with the IEEE 802.3 standard pinouts.

CCTV Cameras

Design, furnish and install fiber-optic drop cables, fiber-optic interconnect centers and field ethernet switches to the existing CCTV locations listed below.

- I-95 Exit or Mile Marker near:

180 (Analog)	73 (I-5986B)
173 (Analog)	Exit 72 (I-5986B) *
171 (Analog)	71 (Analog)
168 (Analog)	70 (I-5986B)
160 (Analog)	MM 68 on DMS (I-5986A)
154 (Analog)	65 (I-5986A)
150 (Analog) on DMS	MM 64 on DMS (I-5986A)
145 (Analog)	61 (I-5986A)
141 (Analog) Solar	MM 61 on DMS (I-5986A)
138 (Analog) Solar	MM 60 (I-5986A)
132 (Analog) Solar	MM 59 on DMS (I-5986A)
127 (Analog)	58 (I-5896A)
121 (Analog)	MM 58 on DMS (I-5986A)
119 (Analog) *	56 (I-5986A)
116 (Analog)	55 (I-5986B)
107 (Analog)	52 (Analog) -Critical-
102 (Analog)	49 (Analog)
97 (Analog)	46 (2 CCTV locations) (Analog) *
95 (Analog)	41 (I-5987)
90 (Analog)	40 (I-5987)
87 (Analog)	MM 37 (I-5987)
81 (2 CCTV locations)(I-5986B) * -	MM 34 (I-5987)
Critical-	33 (I-5987)
79 (I-5986B) *	31 (I-5987) (2 CCTV locations)
MM 78 (I-5986B)	30 (I-5987)
77 (I-5986B)	28 (I-5987)
MM 76 (I-5986B)	25 (I-5987)
75 (I-5986B)	MM 24 (I-5987)MM 23 (I-5987)

MM 74 (I-5986B)	22 (I-5987) 21 on DMS (I-5987) 20 (I-5987) 19 (I-6064) 17 (I-6064) 13 (I-6064) (2 CCTV locations)
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- US 70 Exit or Mile Marker:

MM 319 (Analog) MM 320 (Analog) MM 323 (Analog) MM 325 (Analog) 70 Bypass exit 350 (Digital) (Solar) 70 Bypass exit 351 (Digital) 70 Bypass exit 355 (Digital) (Solar) 70 Bypass exit 356 (Digital) (Solar) 70 Bypass exit 358 (Digital)	70 Bypass exit 361 (Digital) 70 Bypass exit 364 (Digital) 70 Bypass exit 370 (Digital) (Solar) MM 416 (Analog) US 70 at US 17 (Analog) (Solar) US 70 at Williams Rd. (Digital)(R-5777A&B) US 70 at Grantham Rd. (Digital) (R-5777A&B) US 70 at Taberna Way. (Digital) (R-5777A&B) US 70 at Thurman Rd. (Digital) (R-5777A&B) US 70 at NC 24 (Analog) US 70 at Atlantic Beach Bridge (Analog)
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- US 74 Exit or Mile Marker:

US 74 at I-140 US 74 at US 701 US 74 West of MM 225 (R-5797) I-74 at Exit 213 I-74 at Exit 210 I-74 at Exit 203 I-74 at Exit 200 I-74 at Exit 194 I-74 at MM 192 I-485 at NC-49/Tryon St. I-485 at Exit 3 I-485 at Exit 4 I-485 at Exit 6 I-485 at MM 6 I-485 at MM 7 I-485 at Exit 9 I-485 at Exit 10 I-85 Exit 29 I-85 at MM 28	US 74 at Exit 170 I-26 at MM 64.5 I-26 at Exit 59 (Green River Bridge Project) I-26 West of Green River Bridge (Green River Bridge Project) I-26 at US 25 (Green River Bridge Project) I-26 at Exit 53 (I-4400) I-26 at Tracy Grove Rd. (I-4400) I-26 at Exit 49 (I-4400) I-26 North of Clear Creek Rd. (I-4400) I-26 North of Brookside Camp Rd. (I-4400) I-26 near Naples Rd. (I-4400) I-26 at Exit 44 (I-4400) I-26 at MM 41 (Weigh Station)(I-4400)
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I-85 at exit 27	I-26 at Exit 40 (I-4700)
I-85 at exit 26	I-26 at Glen Bridge Rd. (I-4700)
I-85 at MM 24	I-26 at Exit 37 (I-4700)
I-85 at Exit 23	I-26 at Blue Ridge Parkway (I-4700)
I-85 at Exit 22	
I-85 at Exit 21	I-26 at MM 35 (I-4700)
I-85 at Exit 20	I-26 at Ferry Rd. (I-4700)
I-85 at Exit 19	I-26 at Exit 33 (I-4700)
I-85 at Exit 17	I-26 at MM 32
I-85 at Exit 14	
I-85 at Exit 13	

Assume all US 74 corridor CCTVs not being installed by a current project are Analog .

Replace all existing analog cameras listed above with new digital cameras in accordance with the Project Special Provisions included with this RFP. Return all removed equipment to the engineer.

Camera locations with a project number denoted (I-5986A & B, I-5987A & B, I-6064) are to be installed or replaced as part of those projects. The design build team will be responsible for coordinating with those projects on installing fiber drops and ethernet edge switches once the devices are installed.

Install a field ethernet edge switch in all existing CCTV cabinets listed above. CCTVs that are mounted on a DMS structure may share a switch and cabinet with the DMS.

The list above is as accurate as possible as of the date of this RFP. Any CCTV upgrades, Drop Cables or Ethernet Edge Switches needed shall be provided at no additional cost for up to 10 additional CCTV cameras.

For the existing solar sites listed above replace the existing solar assembly with all new hardware in accordance with the Project special provisions included with this RFP. Return the existing solar assembly equipment to the engineer. Existing equipment cabinets, solar mounting brackets and battery cabinets may be reused with the approval of the engineer. Comply with the National Electrical Code (“NEC”), the National Electrical Safety Code (“NESC”), the 2018 NCDOT *Standard Specification for Roads and Structures*, the Project Special Provisions, and all local ordinances.

Design, furnish and install new CCTV camera assemblies, equipment cabinets, electrical services, solar power assemblies, wood poles, fiber-optic interconnect centers, Ethernet edge switches and fiber optic drop cables at the following locations:

- I-95 Exit:

176	38 (2 CCTV locations) Solar
106	22
105	10
101	7 Solar
98 Solar	2
97	1
44	

- US 70:

US 70 Bypass at I-795 Solar Exit 372 US 70 at Washington St. US 70 at NC-148 Solar US 70 at NC 58	Exit 409 Exit 411 Solar US 70 at S Glenburnie Rd. US 70 at Old Airport Rd.
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- US 74:

US 74 at NC 87 US 74 at Exit 258 (NC 211) US 74 at Exit 244 (BUS 74) US 74 at Exit 233 (NC 410) US 74 at Exit 228 (NC 242) I-74/US 74 at Exit 311 (US 1) US 74 at Exit 306 (US 74 BUS) US 74 at Pee Dee River (East side) US 74 at Pee Dee River (West Side) I-85 at MM 11.5 (Weigh Station) I-85 at Exit 10A I-85 at Exit 10B	US 74 at Williams/Harmon Rd. US 74 Bypass at Exit 199 (NC 226) US 74 Bypass at Exit 197 (Washburn Switch Rd.) US 74 at US 74 Bypass (West) US 74 at Exit 193 US 74 at US074 BUS (Mooresboro) US 74 West of Exit 163 (In Curve) US 74 at Exit 161 I-26 at MM 63.5 I-26 at MM 62 I-26 at MM 60
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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. Furnish site surveys, including but not limited to bucket truck surveys or drone surveys, to ensure camera coverage areas are acceptable.

Furnish and install new electrical service equipment at all new CCTV locations. Install solar power assembly equipment at the sites identified above as “solar”. New solar CCTV locations do not require a UPS in the cabinet. Comply with the NEC, the NESC, the 2018 NCDOT *Standard Specification for Roads and Structures*, the Project Special Provisions, and all local ordinances. All work involving electrical service shall be coordinated with the appropriate utility company and the Engineer.

For new CCTV camera sites listed as “2 CCTV locations” or existing CCTV camera sites where a second camera is being installed the design-build team shall install these new cameras on separate poles with separate cabinets in locations that give the greatest combined view of the interchange or location between all cameras at the site.

The Design-Build team shall maintain CCTV communications with existing cell modems (or replacement cell modems supplied by the department) until they are ready to be switched over to the fiber network and communicate with the STOC via fiber. If a replacement cell modem is needed allow 8 weeks lead time for the department to supply the modem.

DMS

Design, furnish and install fiber-optic drop cables, fiber-optic interconnect centers and field ethernet switches to the existing DMS locations listed below.

I-95 DMS Locations:	US 70 DMS Locations:	US 74 DMS Locations:
<ul style="list-style-type: none"> • MM 177 • MM 175 • MM 174 • MM 172 • MM 157.5 • MM 150 • MM 142 • MM 134 • MM 124.5 • MM 114.5 • MM 102 • MM 101 • MM 92 -Critical- • MM 85 -Critical- • MM 78 (Dual DMS) (I-5986B) -Critical- • MM 71 • MM 68 (I-5986A) • MM 64 (I-5986A) • MM 61 (I-5986A) - Critical- • MM 59 (I-5986A) 	<ul style="list-style-type: none"> • MM 319 • MM 322 -Critical- • MM 323 • MM 328 -Critical- • MM 349.5 • MM 352.5 • MM 358 • MM 372 • MM 416 • Front Street SB at US 17/US 70 • MM 418 -Critical- 	<ul style="list-style-type: none"> • US 74 West of Malmo Loop Rd. (dual DMS) • US 74 WB MM 365.5 • US 74 West of MM 225 (2 DMS locations) (R-5797) • I-74 WB MM 208 • I-74 WB MM 203 • I-74 EB MM 198 • I-74 EB MM 191 • US 74 East of Exit 273

<ul style="list-style-type: none"> • MM 58 (I-5986A) • MM 53 • MM 49 • MM 44 • MM 38 • MM 34 • MM 31 • MM 27 • MM 21 (I-6064) (Dual DMS) • MM 16 (I-6064) • MM 9 -Critical- 		
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Install a field ethernet edge switch in all existing DMS cabinets listed above that do not already have one in accordance with the Project Special Provisions included with this RFP. Return all removed equipment to the engineer.

DMS locations with a project number denoted (I-5986A & B) are to be installed or replaced as part of those projects. The design build team will be responsible for coordinating with those projects on installing fiber drops and ethernet edge switches once the devices are installed.

The list above is as accurate as possible as of the date of this RFP. Any Drop Cables or Ethernet Edge Switches needed shall be provided at no additional cost for up to 4 additional DMS sites.

Signal Systems

Design, furnish and install fiber-optic drop cables to the existing closed loop signal systems listed below. Terminate the drop cable in a fiber-optic interconnect center and install a field ethernet switch in the closest signal cabinet to the I-95 ,US 70, or U.S. 74 trunk lines. Signal inventory numbers listed are potential closest cabinets.. DO NOT connect the ethernet switch to the signal controller. Upon termination of the fiber-optic drop cable in the signal cabinet and installation of the edge switch, no further work will be required.

<p>I-95 Signal Systems:</p> <ul style="list-style-type: none"> • D06-18_Lumberton 06-0344, 06-0345 • D04-13_Roanoke Rapids 04-1176, 04-1177 • D04-19_Selma 04-0962, 04-0562 	<p>US 70 Signal Systems:</p> <ul style="list-style-type: none"> • D02-01_Havelock 02-0563 • D02-04_Newport 02-0305 • D02-08_James City 02-0197*, 02-0914* 	<p>US 74 Signal Systems:</p> <ul style="list-style-type: none"> • D03-34 Malmo 03-1070, 03-1076 • 03-0170 Isolated Signal • D06-06 Lumberton 06-1262, 06-1263 • D08-01 Laurinburg
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<ul style="list-style-type: none"> • D04-20_Benson 04-0209, 04-0218 • D04-07_Smithfield 04-0804 • D04-21_Kenly 04-0224 • D04-22_Roanoke Rapids 04-0364, 04-0365 • D06-02_Dunn 06-0762, 06-0766 • D06-17_Lumberton 06- 0375, 06-0531 	<ul style="list-style-type: none"> • D02-11_Morehead City 02-0252 • D02-12_Morehead City 02-0149 • D02-13_Morehead City 02-0491 • D02-14_New Bern 02-0428, 02-0625 • D02-15_New Bern 02-0356, 02-0775 • D02-22-TBS_New Bern 02-0767, 02-0766 	<ul style="list-style-type: none"> 08-0392 • 08-0867 Isolated Signal • 08-0216 Isolated Signal • D10-37 Wadesboro 10-0371 • D10-35 Marshville 10-1683 • D12-09 Belmont 12-0158, 12-0985 • D14-08_Flat Rock 14-0932 • D14-01_Hendersonville 14-0736 • D14-05_Fletcher 14-0901 • D13-06_Ashville 13-0814 • D13-02_Ashville 13-0646
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* Installed under R-5777A&B projects, tie both signals into the device trunk line.

The list above is as accurate as possible as of the date of this RFP. Any Drop Cables or Ethernet Edge Switches needed shall be provided at no additional cost for up to 10 additional Signal locations.

Cellular Connected Vehicle Site

Design, furnish and install a Cellular Connected Vehicle site at the locations listed below in accordance with the functional requirements listed below. Design, furnish and install a fiber-optic drop cable and field ethernet switch at this site for communications. DO NOT connect the CV system to the edge switch unless instructed to by the Engineer and DIT. The Design-build team shall provide four (4) training sessions for up to 15 people each on the setup, programming and operation of the connected vehicle system.

- I-95 at I-795
- I-95 at US 70
- I-95 at I-40
- US 70 Bypass at I-40
- US 70 at I-795

The Connected Vehicle (“CV”) System shall have the following minimum requirements:

- a. The system shall provide CV applications to mobile phones via cellular communications.
- b. The system shall provide TIMs messages to mobile phones with the proper application open and running via a cloud-based system.

- c. The system shall support MAP files that determine the approaches and individual lanes and in turn provide TIMs Messages. An approaching vehicle should only receive the messages that relate to their approach or lane.
- d. The system shall use the GPS position of the vehicle/smart phone to determine when to provide the TIMs information.
- e. A web-based configuration utility for easy editing of the MAP information and programing of TIMs messages that is workable on any modern web browser.
- f. The CV system must be able to be accessed and programmed remotely.
- g. The CV TIMs messages shall be programmable, customizable and provide audible alerts for the end users.
- h. The CV system setup shall require username and password to log on.
- i. The CV system should have the latest authentication and protection measurements to secure public safety, privacy and the integrity of data/information.
- j. The CV system shall have policies for accessing and sharing data, measurements to protect Data Privacy, security and Intellectual Property.
- k. The CV System shall meet all current FCC requirements and licenses.
- l. The CV system shall meet all applicable requirements of USDOT RSU Standard 4.1 and NCTIP 1218 v01. The RSU shall be certified by OmniAir Consortium. <https://omniair.org/>
- m. The hardware must be field hardened and contained in a NEMA 4X cabinet properly sized for all CV, power and communications equipment (may be located in existing equipment cabinet as long as it does not affect the operation of the existing equipment).
- n. Hardware and cabinet should be mounted on a fifty-foot (50') wood pole. Pole and cabinet installation, power and grounding requirements shall follow the same NCDOT requirements as CCTV cameras.
- o. The hardware must be capable of being upgraded to support the future 5G cellular communications.
- p. Issue real time alerts via SMS and email to the appropriate response personnel immediately when a fault occurs.
- q. The field device must be capable of receiving software and security updates remotely without having to physically go to the field devices.
- r. Cellular connectivity for the system should be included with the hardware for a minimum of 5 years.
- s. The hardware shall be under warranty for the same period of time as the cellular connectivity mentioned above
- t. The CV System should be easy to maintain, replace and have continued technical support.
- u. The “over the air” updates shall have the ability to add new connected vehicle functionality and keep the units up to date within SAE J2735 standards to support future connected vehicle communication protocols.

- v. The CV System shall support the following minimum applications:

Minimum Requirements:

1. Roadside Unit (“RSU”) to Phone Applications
2. RSU to Vehicle Applications
3. Visual display and audible alerts to users through the mobile application
4. Virtual Wrong Way detection
5. DMS Annunciation
6. Congestion Alerts
7. Accident/Incident Alerts
8. Work Zone Alert

The Design-Build team shall demonstrate each of these applications as part of the testing and acceptance of the CV system.

The CV system must be submitted to the Department for review and approval before it can be installed.

Remote Weather Information System

Design, furnish and install a fiber-optic drop cable to the existing RWIS listed below. Terminate the drop cable in a fiber-optic interconnect center and install a field ethernet switch in the device equipment cabinet. DO NOT connect the field ethernet switch to any existing communications equipment in the cabinet.

- I-95 near MM 174.5 – Roanoke River bridge.

Traffic Count Station

Design, furnish and install a fiber-optic drop cable to the existing Traffic Count Station listed below. Terminate the drop cable in a fiber-optic interconnect center and install a field ethernet switch in the device equipment cabinet. DO NOT connect the field ethernet switch to any existing communications equipment in the cabinet.

- I-95 North near MM 86

Weigh Stations & Rest Areas

Design, furnish and install fiber-optic drop cables to the Weigh Stations and Rest Areas listed below. Terminate the drop cable in a new fiber-optic patch panel in the existing network racks at each weigh station and install a new network rack at each Rest Area. DO NOT connect the patch panel to any existing communications equipment in the Weigh Station or Rest Area. For Rest Areas that do not have an existing network rack work with the Authority having jurisdiction over those premises to identify a pathway into the facilities to terminate the fiber-optic drop cable. Termination of the fiber-cable drop cable shall be in fiber-optic interconnect center in an

equipment rack or enclosure approved by the engineer. Upon terminating the drop cable in the appropriate location, no further work will be required.

All work associated with adding conduit and piping into the Weigh Stations and/or Rest Stop facilities shall adhere to NEC and NESC codes and all local jurisdictional work requirements and be subject to inspections by the Authority have jurisdictional control.

<ul style="list-style-type: none"> • I-95 South Bound MM 181 • I-95 North and South Bound MM 142 • I-95 North and South Bound MM 99 • I-95 North and South Bound MM 48 • I-95 North Bound MM 5 • I-26 East and West Bound MM 41.5 	<p>Weigh Stations</p> <ul style="list-style-type: none"> • I-95 North and South Bound MM 151 • I-95 North and South Bound MM 24 • I-85 North and South Bound MM 28 • I-85 North Bound MM 12 • I-26 North and South Bound MM 41
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Materials & Construction

Furnish and install new materials and hardware unless stated otherwise elsewhere in this RFP. Adhere to the requirements of the ITUT, IEEE and TIA standards as well as the 2018 NCDOT *Standard Specifications for Roads and Structures*, the 2018 NCDOT *Roadway Standard Drawings*, the *ITS & Signals Generic Project Special Provisions Version 18.3* or latest version at time of letting and the project special provisions included with the RFP.

CCTV Cameras

Install each stand-alone CCTV camera on a 60-foot Class 3 wood pole. Install CCTV equipment in a 336 equipment cabinet mounted on the pole. Install the following minimum equipment in each CCTV equipment cabinet:

- Power equipment including power supplies, circuit breakers, surge protectors, and other related materials.
- New solar assembly at existing and new CCTV locations identified above.
- Ethernet Edge Switch
- Fiber-optic Interconnect center with a 20’ slack loop of spare drop cable.

Perform all work in accordance with the applicable Project Special Provision found elsewhere in this RFP, and other standards listed elsewhere in this RFP.

Interconnect center

Conduit

• **Power Conduit**

Furnish and install conduit (for power) and all necessary hardware by trenching, plowing or directional drilling in accordance with Section 1715 of the 2018 NCDOT *Standard Specifications for Roads and Structures* for installing the power service to the ITS devices. Conduit shall not be placed in the median or under the roadway, except for lateral traverse crossings. (Reference the Electrical Service Section below)

• **Communications Conduit**

Main Trunk Line Conduit – Furnish and install:

- Two (2) – 1.25-inch conduits for NCDOT communications trunk lines.
 - One Blue conduit for the minimum 144-fiber ITS Trunk Line
 - One Orange conduit for the minimum 144-fiber ITS Device Line
- Minimum One (1) – 1.25-inch conduit for possible future commercialization.
 - One Green conduit with pull tape.

*Note pull tape requirement does not apply if a commercialization track is selected. *

Drop Cable Conduit – Furnish and Install

- Two (2) 1.25-inch conduits for NCDOT drop cables passing under the roadway
- One (1) 1.25-inch conduit for NCDOT drop cables not passing under the roadway
- Drop cable conduits shall be White.

Furnish and install conduit and all necessary hardware by trenching, plowing or directional drilling in accordance with the Project Special Provisions included with this RFP for installing fiber-optic conduit to the ITS devices. Conduit shall not be placed in the median or under the roadway, except for perpendicular crossings. Seal all conduits with mechanical sealing devices as described in the Project Special Provisions included with the RFP.

Bundled 1.25-inch conduits are allowed for NCDOT use as long as they meet all specifications and requirements stated in this RFP.

Split NCDOT 1.25” conduit and any spare/commercialization conduit into separate junction boxes at the top of interchange ramps on one side of the crossing street. All conduits may share junction boxes between interchanges.

The Design-Build Team shall be responsible for providing 811 services for newly constructed segments of infrastructure until NCDOT has accepted the infrastructure. The Track 1a Contractor shall notify the Track 1b Contractor one (1) month in advance of acceptance testing to enable the Track 1b Contractor one (1) month to prepare for NC811 work to be performed. The Track 1b Contractor will be responsible for providing NC 811 services for new construction infrastructure immediately following acceptance by NCDOT of Track 1a construction segments as identified in the Track 1a scope of work.

Junction Boxes

• **Electrical**

Furnish and install “Tier 22” junction boxes (pull boxes) for electrical services with all necessary hardware in accordance with Limited Access Junction Box specifications included with this RFP. Provide standard size junction boxes in accordance with Limited Access Junction Box specifications for electrical service. Electrical junction boxes within 6 feet of the meter base or the ITS device with should be protected with a concrete collar/skirt of 8 inch depth, 12 inches wide all around, and flush with the top surface. Electrical junction boxes between the meter base and the ITS device should be buried 6”- 8” below grade in accordance with the project special provisions included with this RFP. Install electrical junction boxes at maximum intervals of three hundred (300) feet or at locations where underground splicing is necessary. For concrete collar/skirt requirements reference the “Junction Box (Limited Access

facilities)” Project Special Provisions and Junction Box detail drawings included with this RFP. Install locate balls and delineator markers at all electrical junction boxes in accordance with the special provisions included with this RFP.

DO NOT bury junction boxes until all appropriate inspections have been conducted.

Provide junction box covers with standard “Electric” logo, pull slots and stainless-steel pins.

- **Communications**

Furnish and install junction boxes (pull boxes) with all necessary hardware in accordance with the Project Special Provisions included with this RFP. Provide Tier 22 load rated junction boxes in accordance with Limited Access Junction Box specifications, with “mouse holes” to accommodate horizontal conduit entrances into the junction box for fiber installations. For communications junction boxes installed at the top of exit ramps or within 6 feet of an ITS device, install a concrete collar/skirt of 8-inch depth, 12 inches wide all around, and flush with the top surface grade. For concrete collar/skirt requirements reference the Project Special Provisions and Junction Box detail drawings included with this RFP. For communications junction boxes installed between interchanges and further than 6 feet from an ITS device bury the junction box 6”-8” below grade in accordance with the project special provisions included with the RFP. Install locate balls and delineator markers at all communications junction boxes in accordance with the special provisions included with this RFP.

DO NOT bury junction boxes until all appropriate inspections have been conducted.

Provide Tier 22 junction box covers with standard “NCDOT Fiber Optic” logo, pull slots and stainless-steel pins.

Space trunk line junction boxes roughly 1500 feet apart between interchanges.

Install communications junction boxes at the base of each ITS device pole/cabinet and at each hub cabinet within six feet.

Every junction box shall house 50 feet of spare cable for each NCDOT cable entering the junction box.

Every junction box with a splice enclosure shall house 50 feet of spare cable for each direction of the cables being spliced. (i.e. 50 feet of spare trunk line in each direction and 50 feet of spare of each drop cable)

Ground all tracer wires in junction boxes designated for communications fiber in accordance with the “Junction Boxes (Limited Access facilities)” PSP and details drawings included with this RFP.

Communications cables and power cables shall NOT share junction boxes.

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 60-foot CCTV Class 3 wood poles as defined in the ITS Project Special Provision.

- Use 40-foot Class 4 wood poles for approved applications.
- Use 6” x 6” x 8’ treated wood posts for underground electrical service structures.

Furnish and install related items of work including but not limited to risers with weatherhead or heat shrink tubing, Air terminals and all necessary hardware in accordance with Section 1720 of the 2018 NCDOT *Standard Specifications for Roads and Structures* and the Air Terminal and Lightning Protection System Project Special Provision included with this RFP.

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 service entrance equipment, service entrance conductors, feeder conductors, disconnects, 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*.

Electrical Services and Service Disconnects with regards to voltage drop calculations shall be rated to accommodate the following breaker sizes:

- CCTV = 15 AMPS
- DMS = 50 AMPS or 30 AMPS (dependent on the sign manufacturer) Calculations using actual equipment load amperage will not be allowed.

Generator Hookups

For devices listed above as “Critical” devices install an external generator connection port on the device cabinet exterior. Port should be designed and sized for the appropriate electrical requirements of the cabinet it is for. ALL hub cabinet locations are considered “Critical” other critical devices are noted in the lists earlier in this RFP. Supplying generators is not required as part of this project.

Other Codes and Standards

All ITS materials shall conform to the latest version of the applicable standards of the 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 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*.

Submittals

Submit a set of 60% preliminary plans by HUB to HUB segment, 90% unsealed set of project plans by HUB to HUB segment, including specifications for materials, catalog cuts, and installation and testing requirements for review. 60% and 90% submittals will have separate 10-day review periods by HUB to HUB segment submitted with no more than four (4) HUB to HUB segments submitted for review at once. The design build team shall submit one HUB to HUB segment for the initial 60% submittal so that common errors can be addressed to avoid repeating

corrections across future submittals. Upon acceptance of the Department, provide a 100% set of sealed plans and specifications to the Department. No construction of the ITS devices and infrastructure shall begin until the Department has accepted the 100% sealed plans and specifications. Provide the Department 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/default.aspx>

Additional Requirements

For all ITS devices and components within the entire project limits, the Design-Build Team shall comply with the following requirements:

Maintenance and Repair

The Design-Build Team shall maintain and repair all ITS components within the Track 1a 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. The Design-Build Team shall be responsible for conducting 811 locates for newly constructed fiber until acceptance. 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 (“POR”) Documentation

Prepare and submit to the Department POR/As-built 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 11 x 17-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. GPS equipment able to obtain the coordinate data within these tolerances may be used. **This plan of record documentation shall be provided to both the Engineer and the NCDOT ITS Section.**

Systems Engineering Documentation

The Design-Build Team shall perform systems engineering to ensure consistency with the Statewide ITS Architecture and to ensure conformance with the requirements of 23 CFR 940.11. The Design-Build Team shall develop and submit to NCDOT the following systems engineering deliverables for review:

- a. A Systems Engineering Management Plan

- b. A Concept of Operations
- c. A requirement document that specifies system requirements, high level design, and detailed design requirements
- d. Development of test plans for unit/device testing, subsystem verification, system verification and validation.

Systems Engineering Documentation shall follow the same submittal review structure as detailed in the Submittals section above.

Integration

Upon completion of the ITS device installations, coordinate with DIT to integrate all ITS devices with the NCDOT ITS network and verify accessibility of all devices at the STOC unless instructed otherwise by this RFP or by the Engineer.

Coordinate with DIT and the Engineer to modify, as necessary, the existing central hardware and software modules including but not limited to databases, to provide operators access to new devices through the operators' Graphical User Interface.

Testing

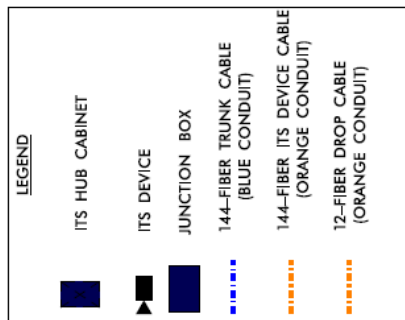
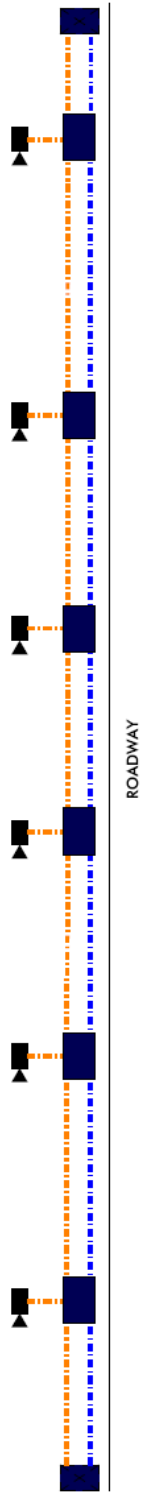
Develop unit and system test plans and procedures for each ITS device and all associated components, in accordance with the appropriate testing requirements found in the Project Special Provisions included with this RFP and submit to the Engineer for review and approval.

Upon completion of the ITS device installations, conduct unit and system 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 and system tests, submit the test reports along with the record of repairs and part replacements to the Engineer.

ITS DEVICE LINE CONCEPT DRAWINGS



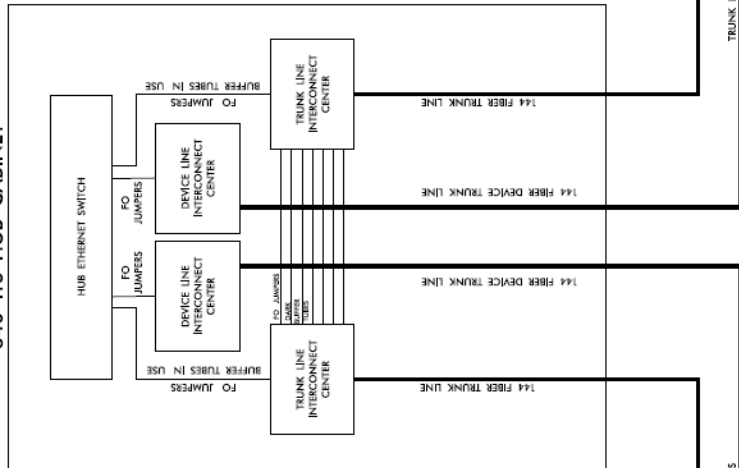
DEVICE LINE RUNS FULL DISTANCE BETWEEN 2 HUB CABINETS WITH DEVICES SPLICED IN AND CONNECTS TO BOTH HUB CABINETS FOR DEVICE COMMUNICATION REDUNDANCY.

TRUNK LINE RUNS FULL DISTANCE BETWEEN 2 HUB CABINETS WITH NO SPLICES AND CONNECTS TO BOTH HUB CABINETS FOR HUB TO HUB COMMUNICATIONS.

ITS HUB SPLICE / REGENERATION CABINET CONCEPT BLOCK DIAGRAM

"DRAWING IS CONCEPTUAL"
 SEE ITS SCORE CHARTWORK FOR BUFFER TUBE SPLICE ASSIGNMENTS
 AND HUB CABINET PHYSICAL LAYOUT DETAIL

340 ITS HUB CABINET



TRUNK LINE TO NEXT HUB CABINET

TRUNK LINE TO ITS DEVICES BETWEEN HUB CABINETS

TRUNK LINE TO NEXT HUB CABINET

TRUNK LINE TO ITS DEVICES BETWEEN HUB CABINETS

D-1.1e. Utilities Coordination Scope of Work

The Design-Build Team shall obtain the services of a Professional Services Firm (“PSF”) knowledgeable in the NCDOT Utility Coordination Process involved with utility relocation / installation and highway construction. The Design-Build Team shall be responsible for coordinating all utility relocations, removals, and / or adjustments where the Design-Build Team and utility owner, with concurrence from the Department, determine that such work is essential for highway safety and performance of the required highway construction. Coordination shall be for all utilities whether or not they are specifically identified in this Scope of Work and shall include any necessary utility agreements when applicable. NCDOT will be the approving authority for all utility agreements and utility plans.

The Design-Build will only be allowed direct contact with the utility owners when the aforementioned PSF is present. (Reference the *Individual Meeting with Proposers* Project Special Provision found elsewhere in this RFP)

In accordance with the requirements herein, the Design-Build Team shall relocate / coordinate the relocation of all existing facilities if they are in physical conflict with construction.

Project Details

The Design-Build Team shall be responsible for verifying the utility locations, type of facilities, and identifying the utility owners in order to coordinate the relocation of any utilities, known and unknown, in conflict with the project. The following utilities are known to be located within the project construction limits:

<u>Utility Owner</u>	<u>Utility Type</u>	<u>Cost Responsibility</u>
Varies	CATV	Design-Build Team
Varies	Gas (Distribution)	Design-Build Team
Varies	Gas (Transmission)	Design-Build Team
Varies	Power (Distribution)	Design-Build Team
Varies	Power (Transmission)	Design-Build Team
Varies	Telecommunications	Design-Build Team
Varies	Water and Sewer	Design-Build Team (NCDOT will obtain an agreement with Utility Owners allowing the Design-Build Team to work on their facilities)
Varies	Petroleum	Design-Build Team

Water and Sewer

If the Design-Build Team’s design and / or construction requires the relocation and / or encasement of existing water and / or sewer facilities, designs shall be coordinated with the NCDOT Utilities Unit. All costs associated with the design and construction for relocation and / or encasement of

these existing water and / or sewer facilities shall be the responsibility of the Design-Build Team and shall be included in the lump sum bid for the project. The Design-Build Team shall develop designs; prepare all plans for needed agreements and permits; submit permits directly to the agencies and obtain approval from the agencies. The Design-Build Team shall be responsible for all permit fees.

Designs shall be coordinated with the NCDOT Utilities Unit and the utility owners or their representatives. In .pdf format, the Design-Build Team shall electronically submit one half-size set and one full size set of utility construction drawings to the State Utilities Manager, via the Design-Build Unit, for further handling. Each set shall include a title sheet, plan sheets, profiles and special provisions, if required. Once accepted by the State Utilities Manager, the plans, with the appropriate agreement, will be sent to the utility owner for review and concurrence.

The relocation of all water and sewer facilities shall be done in accordance with the NCDOT Policies, as well as the latest water and sewer design requirements / specifications or each effected owner. In the event of conflicting design parameters in the requirements noted above, the proposed design shall adhere to the most conservative values. The materials and appurtenances proposed by the Design-Build Team shall require approval by both NCDOT and the aforementioned appropriate utility owner prior to installation.

Utility Relocation Plans

Excluding water and sewer conflicts, if the Design-Build Team's design and or construction create a utility conflict, the Design-Build Team shall request that the utility owner submit relocation plans (Highway Construction Plans to be provided by the Design-Build Team to utility owners) that show existing utilities and proposed utility relocations for approval by the NCDOT.

In .pdf format, the Design-Build Team shall electronically submit one half-size set and one full size set of the Utility Relocation Plans to the NCDOT State Utility Manager, via the Design-Build Unit, for review and approval. The Department shall approve the Utility Relocation Plans prior to any utility relocation work beginning. The Design-Build Team shall also be responsible for submitting the appropriate agreements to be used with the Utility Relocation Plans (See Agreements found elsewhere in this Scope of Work). After the review process is complete, the NCDOT Utilities Unit will submit an electronic copy of the authorization letter to the Design-Build Team. The NCDOT Utilities Unit will also submit an electronic copy of the approved Utility Relocation Plans, estimate and agreement to the Department's Resident Engineer. If the Utility Relocation Plans are approved subject to changes, it shall be the Design-Build Team's responsibility to coordinate these changes with the appropriate utility owner.

Cost Responsibility

The Design-Build Team shall be responsible for all costs associated with utility relocations resulting from the Design Build Team's methods of operation or sequence of work.

Compensable Interest

Typically, affidavits, recorded easements or NCDOT agreements can serve as evidence of prior rights. A compensable interest is identified as follows:

- (A) Existing or prior easement rights within the limits of the project, either by recorded right of

way or adverse possession (Utility occupying the same location for twenty (20) plus years outside the existing highway rights of way).

- (B) Entities covered under *General Statute 136-27.1* and *136-27.2*. Statute requires the NCDOT to pay the non-betterment cost for certain water, sewer and gas relocations.
- (C) Utilities that have a joint-use agreement that constitutes a compensable interest with entities that have existing or prior easements rights within the project limits.

Work Performed by Design-Build Team for Utility Owners

If the Design-Build Team elects to make arrangements with a utility owner for proposed utility construction not required herein, in which the utility owner shall be responsible for the costs of work to be performed by the Design-Build Team, the Design-Build Team shall be responsible for negotiating all costs associated with the proposed construction. Once the Design-Build Team and the utility owner agree on a plan and a lump sum estimated cost for the utility construction, the Design-Build Team shall electronically submit one half-size set and one full size set of the utility construction drawings, in .pdf format, to the State Utilities Manager, via the Design-Build Unit, for further handling. Each set shall include a title sheet, plan sheets, profiles and special provisions if required. Also, a letter from the utility owner agreeing to the plans and lump sum cost must accompany this package. The NCDOT will reimburse the Design-Build Team the estimated lump sum cost under a Supplemental Agreement. The necessary Utility Agreement to the utility owner for reimbursement shall be a two-party agreement between the NCDOT and the utility owner; and will be developed and executed by the Department.

If the Design-Build Team is requested, in writing, by a utility owner to relocate facilities not impacted by the project's construction, and / or upgrade or incorporate new facilities as part of the highway construction, designs shall be coordinated with the utility owner and the NCDOT Utilities Unit. The associated design and construction costs shall be negotiated and agreed upon between the Design-Build Team and the utility owner. The Design-Build Team shall develop designs; prepare all plans for needed agreements and permits; submit permits directly to the agencies and obtain approval from the agencies. The Design-Build Team shall be responsible for all permit fees.

Cable TV

The NCDOT will not permit CATV to place poles within the highway right of way but will allow down guys for their facilities within the highway right of way. Under most circumstances, the CATV Company will continue a joint-use attachment with the local Power and Telephone Company. If the CATV proposed relocation places buried facilities within the highway right of way then plans and encroachment agreements shall be required by the NCDOT.

Communication Cables / Electrical Services for Lighting, Traffic Signals and ITS Devices

Prior to establishing the location for new meter poles, the Design-Build Team shall coordinate with the local Power Distribution Company concerning accessibility of E/C service and safety in maintenance of the meter.

Prior to installation, the Design-Build Team shall provide plans for review and approval for all service taps that require a parallel installation within the control of access (“C/A”).

Parallel service installation within a C/A shall be buried.

The Design-Build Team shall be responsible for all coordination activities, including deposit fees, required for the utility company to provide service taps. Prior to the Design-Build Team developing the associated design and / or instructing the utility company to proceed with providing the service taps, the Design-Build Team shall obtain written approval of the service tap locations from the Resident Engineer.

Adjusting Existing Utilities due to Proposed Traffic Management Systems Fiber Optic Communications Cables

The Design-Build Team shall be responsible for all costs for coordinating and adjusting any utilities that conflict with any proposed communication cables.

Requirements for Attachments to Existing and / or Proposed Structures

The Design-Build Team shall avoid attachments to structures where feasible excluding the allowable attachments as identified elsewhere in the RFP, Reference Structures Scope of Work. Attachments shall only be considered when other alternatives are cost prohibitive and / or are not feasible due to environmental or geographical features. All utility related attachments must be evaluated and approved by the State Utilities Manager, including any existing attachments to any structure(s) that require modification or replacement. Attachments shall be prohibited under the following criteria:

- (A) No attachments shall be allowed to cored-slab superstructures.
- (B) No attachments shall be allowed to curved bridges without the Engineer’s approval.

Attachments to structures, if approved by the State Utilities Manager, shall meet the following criteria:

- (A) No attachments shall be allowed below the bottom of the beams and / or girders.
- (B) Drilling of, or attachments to, beams and / or girders shall not be allowed. Attachments shall only be allowed to the backside of barrier unless otherwise approved.

Documentation of adverse conditions or cost estimates of all feasible alternatives shall be submitted to the NCDOT State Utilities Manager, via the Design-Build Unit, when seeking approval of a structure attachment. Cost estimates shall consider all costs involved with each alternative and impacts to the utility and the highway project as a whole.

General

The Design-Build Team shall not commence work at points where the highway construction operations are adjacent to utility facilities, until making arrangements with the utility owner to protect against damage that might result in expense, loss, disruption of service or other undue inconvenience to the public or utility owner. The Design-Build Team shall be responsible for damage to the existing or relocated utilities resulting from the Design-Build Team's operations. In the event of interruption of any utilities by the project construction, the Design-Build Team shall promptly notify the utility owner and cooperate with the utility owner in the prompt restoration of service.

The Design-Build Team shall accommodate utility adjustments, reconstruction, new installation and routine maintenance work that may be underway or take place during the progress of the contract.

If total property acquisition is unavoidable due to encroachment into wells and / or septic systems, the Design-Build Team shall investigate and determine if extending water and / or sewer lines to the affected property is cost effective. If the Department concurs with the determination that a utility extension is cost effective, the costs associated with the utility design and construction shall be addressed in accordance with Article 104-7 of the 2018 NCDOT *Standard Specifications for Roads and Structures*.

The Design-Build Team shall be required to use the guidelines as set forth in the following:

- (A) *NCDOT Utility Accommodation Manual (Expected January 2021)* will supersede the existing *NCDOT Utility Manual – Policies & Procedures for Accommodating Utilities on Highway Rights of Way* and the *NCDOT Utilities Policy Manual*. Reference the website noted below for the current version of the NCDOT utility manuals, and additional information on the transition to the new utility manuals shall be adhered to:

<https://connect.ncdot.gov/municipalities/Utilities/Pages/UtilitiesManuals.aspx>

- (B) *Federal Aid Policy Guide* – Subchapter G, Part 645, Subparts A & B
- (C) *Federal Highway Administration's Program Guide, Utility Adjustments & Accommodations on Federal Aid Highway Projects*
- (D) *NCDOT Construction Manual* Section 105-8
- (E) *NCDOT Right of Way Manual* – Chapter 16 Utility Relocations
- (F) *NCDEQ, Public Water Supply* – Rules governing public water supply
- (G) *NCDEQ, Division of Water Resources* – Title 15A – Environment and Natural Resources

Agreements

If a utility company can provide evidence of prior rights of way or a compensable interest in their facilities, the Design-Build Team shall coordinate the non-betterment utility relocation costs with the utility company and develop the Utility Relocation Agreement.

The NCDOT State Utilities Manager must execute approved agreements on Design-Build projects. The Utility Relocation Agreements (Cost Agreement) and Encroachment Agreements are available from the NCDOT Utilities Unit. Reference Pages 59 and 60 of the *NCDOT Utility Manual – Policies & Procedures for Accommodating Utilities on Highway Rights of Way* for the different types of Encroachment Agreements available for use.

The Design-Build Team shall submit all Utility Relocation Agreements, (“URAs”), all Utility Encroachment Agreements, and all supporting documents to the NCDOT State Utilities Manager, via the Design-Build Unit, in electronic format. Prior to submittal, all agreements shall be signed electronically by an authorized representative of the utility owner. These electronic agreement packets will be reviewed, approved and signed electronically by the NCDOT Utilities Manager, or designated representative, before being distributed to the field.

The Design-Build Team shall utilize the NCDOT Standard Utility Encroachment Agreements, as necessary, in relocating utilities. The encroachment agreements shall be used under the following conditions:

- (A) If a utility company is not occupying a valid right of way / compensable interest and the proposed relocation will place the relocated utilities within the existing or proposed highway right of way.
- (B) For **all** new utility installations not covered under a Utility Agreement and within the existing or proposed highway right of way. This includes all water, sewer and gas lines owned by entities covered under *General Statute 136-27.1* and *136-27.2*

D-1.1f. Erosion and Sediment Control Scope of Work

General

The NCDOT Roadside Environmental Unit (REU) shall review and accept all Erosion and Sedimentation Control Plans in accordance with NCDOT's delegation agreement with the North Carolina Sedimentation Control Commission including authority to (1) identify special needs for this project, including the acquisition of additional right-of-way; (2) mandate special details to be included in the design plans or special provisions; (3) conduct on site plan reviews for compliance and require design changes to accommodate field changes; (4) inspect all construction sites including waste and borrow pits and haul roads; and (5) issue violation notifications or cease and desist orders. The NCDOT REU will also retain authority in plan, detail, and special provision review and acceptance. Clearing & Grubbing, and any necessary Final Grade or Intermediate Release for Construction (RFC) Erosion Control Plans shall be submitted, accepted and distributed to all NCDOT personnel listed in the Design-Build Submittal Guidelines before **any** land disturbing activities, including C&G, can commence. If the Design-Build Team chooses to perform the work in discrete sections, then a complete set of Clearing & Grubbing and any necessary Final Grade RFC Erosion Control Plans shall be submitted, accepted, and distributed, as noted above, prior to land disturbing activities, including C&G, commencing in that section. No land disturbing activities, including C&G, shall occur in any location that does not have accepted Clearing & Grubbing and Final Grade RFC Erosion Control Plans. Refer to the most recent versions of the NCDOT *Erosion and Sediment Control Design and Construction Manual* and of the NCDEQ – *Erosion and Sediment Control Planning and Design Manual* for erosion control design guidelines not addressed in this Scope of Work.

Erosion and Sedimentation Control Design

Design Process and Requirements

Pre-Submittal Meeting

- A pre-submittal meeting shall take place between the NCDOT Roadside Environmental Unit Soil & Water Engineering Section, the Design-Build Team, and any other pertinent NCDOT personnel before any Erosion and Sedimentation Control Designs are submitted to NCDOT Roadside Environmental Unit. Erosion and Sedimentation Control Plan submittals shall only be reviewed and accepted by NCDOT Roadside Environmental Unit after the Erosion and Sedimentation Control Pre-Submittal Meeting. The Design-Build Team shall be required to submit a tentative Erosion and Sedimentation Control Plan submittal schedule at the pre-submittal meeting.
- At a minimum, the Design-Build Team shall bring one erosion control plan sheet with a Clearing & Grubbing erosion control design to the Erosion and Sedimentation Control Pre-Submittal Meeting.

Design and Plan Submittals

- All erosion and sediment control design shall be in accordance with North Carolina Design Standards in Sensitive Watersheds (DSSW) for areas within regions of regulated riparian buffers (Neuse River), High Quality Water Zones (within 1 (one) mile and draining to an EMC identified High Quality Water (575 feet for inland high quality water bodies in Carteret and Craven Counties)), Outstanding Resource Water, 303d listed stream for

turbidity impairment or identified primary nursery area (PNA) water body, within 0.5 (one-half) mile of a CA identified water body, and as required by permits.

- All jurisdictional streams within the project limits requiring DSSW shall be identified as ‘Environmentally Sensitive Areas’ on the Sediment and Erosion Control Plan.
- Plan submittals shall include all pertinent design information required for review, such as design calculations, drainage areas, etc. Within the entire project limits, provide disturbed and undisturbed drainage areas in MicroStation format for all phases.
- Plans shall address any environmental issues raised during the permitting process.
- The NCDOT Roadside Environmental Unit will provide a sample set of Erosion and Sedimentation Control Plans (including any special details or special provisions used by the NCDOT Roadside Environmental Unit) and MicroStation Erosion Control Workspace to the Design-Build Team for reference upon request.
- Temporary access and haul roads, other than public roads, constructed or used in connection with the project shall be considered a part of the project and addressed in the Erosion and Sedimentation Control Plans. Temporary access and haul roads located within the footprint and / or the right of way / easement corridor of the project shall be part of the highway Erosion and Sedimentation Control Plans. As needed, temporary access and haul roads associated with borrow pits and staging areas shall be included in the Reclamation Plan.
- The Design-Build Team shall allow sufficient time in the proposed schedule to address any comments to the Erosion and Sedimentation Control Plans, as deemed necessary by the NCDOT Roadside Environmental Unit.
- At any time requested by the Engineer or the NCDOT Roadside Environmental Unit, the Design-Build Team shall provide an updated version of the Erosion and Sedimentation Control Plans for distribution to all parties involved in the construction process.
- Once RFC Erosion and Sedimentation Control Plans are issued, any major design change or addition, any change that involves calculations, and any addition, deletion, or relocation of a sediment basin shall be submitted to the NCDOT Roadside Environmental Unit for review and acceptance. Minor changes such as moving silt fence, adding or moving temporary ditches (unless adding new runoff flow to a sediment basin), and adding or moving slope drains shall be reviewed by the Engineer in the field.
- The Design-Build Team’s erosion and sedimentation control designer shall submit design calculations, for the Department’s review and acceptance, for all modifications to the Erosion and Sedimentation Control Plans that result in dimension modifications and / or relocations, other than minor shifts to accurately place, to the devices noted below:
 - Riser Basin
 - Skimmer Basin and all devices with Skimmers
 - Temporary Rock Sediment Dam Type A
 - Temporary Rock Sediment Dam Type B
 - Temporary Rock Silt Check Type A
- All RFC Erosion and Sedimentation Control Plans, including any red line revisions, shall

be kept on site at all times throughout the duration of the project.

Clearing and Grubbing Phase Plans

The Design-Build Team shall submit an Erosion and Sediment Control (E&SC) plan for all work associated with the project, hereby referenced in this document as the Clearing and Grubbing (C&G) E&SC plan. The C&G plan shall be required for all construction activities and shall address both construction stormwater from disturbed area and stormwater drainage onto the disturbed portion of the project be designed to manage and provide treatment for stormwater using existing topography and drainage systems. Any planned changes to the existing topography or drainage systems for construction of this project shall be addressed in additional Final Phase or Intermediate phase E&SC plans sheets. The C&G plans may utilize typical ES&C plan designs and details for repetitive construction operations to minimize the number of individual E&SC plan sheets. Unique individual E&SC plan sheets shall be required for construction and installation operations that do not conform to the aforementioned typical E&SC designs and details, encroachments into jurisdictional or environmentally sensitive areas or larger land disturbing activities (examples may include but not limited to lay down or construction yards, temporary construction office sites, or fiber huts). Methods of installation that minimize ground disturbance and can be completed and stabilized within the same workday may utilize the aforementioned typical ES&C plan design and may not require further planned E&SC devices.

Use correct NCDOT symbology.

E&SC to-scale plan sheets shall be 50:1.

Protect existing drainage structure inlets with Rock Inlet Sediment Trap Type ‘A’ (RIST- A), Rock Inlet Sediment Trap Type ‘C’ (RIST-C), Rock Pipe Inlet Sediment Trap Type ‘A’ (PIST-A), etc.

Utilize adequate perimeter controls (temporary silt ditches (TSD), temporary silt fence (TSF), etc.).

CWD shall be used to the maximum extent practical to direct offsite drainage around the disturbed project limits. CWD should not be used to divert offsite runoff through the project construction limits without temporary piping or additional E&SC measure to separate construction stormwater from the CWD.

Utilize skimmer basins and rock measures with sediment control stone (Temporary Rock Sediment Dam Type ‘B’ (TRSD-B), Temporary Rock Silt Check Type ‘A’ (TRSC-A), etc.) at drainage outlets.

Account for topography and show existing contour lines on Clearing & Grubbing Plans only.

Utilize Temporary Rock Silt Checks Type ‘B’ (TRSC-B) or wattles to reduce velocity in existing ditches with spacing of 250 feet divided by percentage of ditch grade. Also utilize TRSC-B’s or wattles in proposed TSD’s and temporary diversions (TD).

Protect existing streams; do not place erosion control devices in live streams unless permitted by the Division of Water Resources 401 Certification and the Army Corps of Engineers 404 Permit.

In areas of DSSW, sediment basins shall be sized to provide adequate silt storage for 3600 cubic feet per disturbed acre with surface area equal to 435 square feet per cubic foot per second (cfs) of the peak inflow rate, Q25, using 25-year peak rainfall data (NCDEQ – *Erosion and Sediment Control Planning and Design Manual* or NOAA’s National Weather Service website

<https://hdsc.nws.noaa.gov/hdsc/pfds/> for partial duration (ARI) time series type). In all other areas, utilize the 10-yr peak rainfall event, Q10, for peak inflow rate. A Sediment Basin Designer Spreadsheet will be provided by the NCDOT Roadside Environmental Unit upon request.

In areas of DSSW, Skimmer Basins shall be sized to provide adequate silt storage for 1800 cubic feet per disturbed acre with surface area equal to 325 square feet per cubic foot per second (cfs) of the peak inflow rate, Q25, using the 25-year peak rainfall data (NCDEQ – *Erosion and Sediment Control Planning and Design Manual* or NOAA’s National Weather Service website <https://hdsc.nws.noaa.gov/hdsc/pfds/> for partial duration (ARI) time series type). In all other areas, utilize the 10-yr peak rainfall event, Q10, for peak inflow rate. Skimmer Basins shall be designed to dewater in two to three days. A Skimmer Basin Designer Spreadsheet will be provided by the NCDOT Roadside Environmental Unit upon request.

Design Riser Basins to the following standards:

- Surface Area shall be determined by Equation A (sq. feet) = Q25 (cfs) * 435.
- Volume requirement shall be 1800 cubic feet per disturbed acre draining to the riser basin.
- Riser Pipe shall have a cross-sectional area 1.5 times that of the barrel pipe.
- The riser pipe shall be non-perforated with a skimmer attached to the bottom of the pipe, one foot from the bottom of the basin.
- See NCDEQ – *Erosion and Sediment Control Planning and Design Manual* for additional design criteria.

The minimum and maximum length to width ratio of all Sediment Basins shall be 2:1 and 6:1, respectively.

Coir Fiber Baffles shall be installed in all silt basins and sediment dams at drainage outlets. For silt basins with a 20-foot or longer length, three Coir Fiber Baffles shall be installed with a spacing of ¼ the basin length. For silt basins with a length less than 20 feet, a minimum of two Coir Fiber Baffles shall be installed, with a spacing of 1/3 the basin length. The Design-Build Team will not be required to show the individual baffles on the Erosion Control Plans but shall be required to incorporate the Coir Fiber Baffle Detail on the Erosion Control Plans.

Construction activities in jurisdictional streams shall be done in accordance with the NCDOT *Best Management Practices for Construction and Maintenance Activities*.

Utilize Coir Fiber Wattles with Polyacrylamide (PAM) and / or TRSC-As with Matting and PAM in temporary and permanent, existing and proposed ditches at an appropriate design spacing in areas where sediment basins are not feasible at drainage outlets and in areas where sediment basins at drainage outlets with sediment traps (i.e. PIST-A, RIST-A, etc.), cannot be properly sized to surface area and/or sediment storage requirements due to safety concerns, right of way restrictions, utility conflicts, or other construction limitations approved by the NCDOT Roadside Environmental Unit.

Utilize temporary diversions or diversion berms as water bars to divide long sections of the grade directing the stormwater flow to E&SC outlet measures. Design spacing shall be in accordance with Table 6.23a of the NCDEQ – *Erosion and Sediment Control Planning and Design Manual*.

Place a device utilizing PAM at all sediment basin inlets.

At a maximum spacing of 200 feet or at sag points along the silt fence and as directed, utilize Special Sediment Control Fence or Coir Fiber Wattles as drainage breaks in silt fence.

Do not place erosion control devices that require excavation (i.e. sediment basins, silt ditches, etc.) in wetlands.

Provide matting for erosion control for disturbed areas in excess of 5% on grade or slopes steeper than 4:1. Provide natural fiber matting (non-polyethylene or non-polypropylene) mattings for exposed soils within all ESA areas, riparian buffer zones, and wetlands regardless of grade or slope. Areas to be stabilized with matting for erosion control shall be shown on the C&G E&SC plans if Final Phase E&SC plans are not required.

For all drainage outlets where the runoff cannot be treated with a sediment basin and / or the sediment basin cannot be constructed to the required sediment storage or surface area requirements, provide a written explanation.

Excluding perimeter Sediment Basins that will function only during C&G operations, all perimeter Sediment Basins shall be placed outside of construction limits.

Final Grade Phase Plans

FG phase E&SC plans shall be required for areas where construction operations cause alteration of the drainage patterns such that the C&G E&SC phase plans cannot adequately manage or treat stormwater or E&SC measures cannot function properly. The FG E&SC plans shall be designed to manage and provide treatment for stormwater using proposed topography and drainage systems. In addition to the requirements of C&G Phase Plans, the Final Grade Phase Plans shall:

Devices at all drainage turnouts shall utilize skimmer or sediment control stone (TRSD-B, TRSC-A, etc.) and a spillway with an adequately designed base length to distribute outflow.

Provide matting for erosion control (straw) in all disturbed or modified ditch lines, including but not limited to temporary ditch lines (TDs) utilized to divert offsite runoff around construction areas, where the velocity is greater than 2.0 feet / sec, and the shear stress is 1.25 psf or less. For ditch lines with a shear stress above 1.25 psf but not greater than 2.55 psf install matting for erosion control (excelsior). Permanent Soil Reinforcement Mat or Rip Rap shall be utilized for ditches with a shear stress greater than 2.55 psf with approval from the Engineer.

Intermediate Phase

Intermediate Erosion Control Plans shall only be required if design modifications and / or site conditions require additional erosion control design or design revisions to the RFC C&G and / or RFC Final Grade Erosion Control Plans. Intermediate Plans shall be submitted for review and shall be accepted prior to construction of any aspect impacted by the revised erosion control design. For any intermediate phase, comply with Section B “Final Grade Phase” above.

Detail Sheets, Title Sheets and Special Provisions

Detail Sheets and Notes

Provide project specific special notes and details, including but not limited to, skimmer basin, coir fiber wattle with Polyacrylamide (PAM), etc.

Provide matting summary sheet(s): matting for erosion control, permanent soil reinforcement mat, and coir fiber mat.

Provide reforestation sheet(s): regular, wetland, streambank and / or buffer showing appropriate

species.

Title Sheet

Show correct notes: NCG-01, HQW, ESA, C&G, etc.

Show correct standards for project

List of standard NCDOT symbology

Show name and certification number of Level III certified individual(s) responsible for designing and / or reviewing Erosion and Sedimentation Control Plans

Show name of primary NCDOT Roadside Environmental Unit Erosion and Sedimentation Control Plan reviewer

Special Provisions

Erosion Control Special Provisions are available at the following website:

<https://connect.ncdot.gov/resources/roadside/Pages/Soil-Water.aspx>

References in Erosion Control Special Provisions from the aforementioned website to Method of Measurement, Basis of Payment, or any other statement regarding direct payment for Erosion & Sediment Control measures shall be disregarded.

Erosion & Sediment Control / Stormwater Certification Project Special Provision found elsewhere in this RFP.

Construction Requirements

General

The Design-Build Team shall comply with the North Carolina Administrative Code *Title 15A Environmental Quality* Chapter 4, Sedimentation Control.

An accepted Erosion and Sedimentation Control Plan shall not exempt the Design-Build Team from making every effort to contain sediment onsite.

Whenever the Engineer determines that significant erosion and sedimentation continues despite the installation of approved protective practices, the Design-Build Team shall be required to, and shall, take additional protective action.

Preliminary Construction Meeting

Prior to any land disturbing activity, the Engineer will schedule a meeting with Division construction personnel, Design-Build Team senior management, Design-Build Team project staff, NCDOT project staff, consultant engineering / inspection staff, NCDOT Construction Unit, NCDOT Roadside Environmental Unit, Land Quality, Department of Water Resources and any other party associated with activities that impact the overall effectiveness of the project's erosion control.

During this meeting, the attendees shall review the Design-Build Team's Erosion Control Plans and identify potential erosion control issues. All attendees will provide comments, recommendations and supportive information to help facilitate resolution to the aforementioned

potential erosion control issues.

Construction Meetings

Once construction begins, the Engineer may schedule monthly meetings to review the erosion control status. All parties listed above for the Preliminary Construction Meeting shall participate in these monthly construction meetings.

During the construction meetings, the erosion control efforts / issues to date will be reviewed and discussed. Additionally, the upcoming construction phases will be reviewed to identify potential erosion control issues. After the construction meeting, a project review may occur to identify site specific issues and identify solutions. The Design-Build Team shall be responsible for all actions, corrections and / or resolutions resulting from the construction meetings and / or subsequent site visits.

The NCDOT senior management will discuss issues that are repeatedly identified on inspection reports and / or discussed during the construction meetings with the Design- Build Team's senior management.

If project activities do not change the erosion control status / conditions, the Engineer may elect to change the construction meeting frequency or cancel a meeting.

Inspection and Certification

Erosion & Sediment Control / Stormwater Certification shall be required according to the Project Special Provision found elsewhere in this RFP.

Prior to installation of any erosion control devices, the Design-Build Team shall verify boundaries of jurisdictional areas in the field and delineate with Safety Fence or flagging. For guidance on Safety Fence and flagging in jurisdictional areas, see:

<https://connect.ncdot.gov/resources/roadside/Pages/Field-Operations-Documents.aspx>

Reclamation Plan

As required, borrow or waste areas that are part of the project shall require a separate Reclamation Plan, unless the borrow or waste activity is regulated under the *Mining Act of 1971*, or is a landfill regulated by the DWM. For newly created borrow pit(s) that require dewatering, Borrow Pit(s) Dewatering Basins shall be required and shall be in accordance with the applicable special provisions available at the website noted in the Construction Requirements above. The Design-Build Team shall submit the location and permit number for waste / borrow sites covered by the Mining Act or regulated by the DWM concurrently to the Design-Build Unit and the Resident Engineer. For Reclamation Procedures, see:

<https://connect.ncdot.gov/resources/roadside/FieldOperationsDocuments/ContractedReclamationProcedures.pdf>

Temporary access and haul roads associated with borrow pits and staging areas shall be included in the Reclamation Plan.

A Central Coastal Plain Capacity Use Area (CCPCUA) permit is required for dewatering of groundwater in Wayne, Lenoir, Jones, Craven and Carteret Counties excess of 100,000 gallons per day of ground water prior to any dewatering operation. The CCPCUA rules also require

registration and reporting of water use for operations using more than 10,000 gallons of ground water and/or surface water per day. The requirements for monitoring and record keeping may be found at to following link:

<https://connect.ncdot.gov/resources/roadside/SoilWaterDocuments/CCPCUA.pdf>

Miscellaneous Construction Requirements

At a minimum, the Design-Build Team shall install Floating Turbidity Curtain at ponds, lakes, and other jurisdictional standing water bodies 1) where construction activities create surface fill impacts 2) or where sufficient erosion and sediment control devices cannot be installed to contain sediment and / or turbidity impacts.

Utilize special stilling basins to dewater the construction site in accordance with NCDOT

To contain concrete wash water and associated concrete mix from washing out ready-mix trucks, drums, pumps, or other equipment, provide Concrete Washout Structures at egress points. Concrete Washout Structures must collect and retain all concrete wash water and solids so that this material does not migrate to surface waters or into the ground water. The Concrete Washout Structures are not intended for concrete waste not associated with washout operations. The Concrete Washout Structures may include devices above or below ground and / or commercially available devices designed specifically to capture concrete wash water. Concrete Washout Structure options may be found in the special provision, available at the website noted in Section IV above. For construction details of an above grade and below grade Concrete Washout Structure, reference the website noted below:

<https://connect.ncdot.gov/resources/roadside/SoilWaterDocuments/ConcreteWashoutStructureDetail.pdf>

All erosion control measures with stone extending beyond the construction limits shall be considered temporary fill. If impacted wetland areas are permitted as Hand Clearing, then the aforementioned temporary fill shall be permitted as Temporary Fill in Hand Cleared Areas for Erosion Control. (Reference the Environmental Permits Scope of Work found elsewhere in this RFP).

Sediment basins that drain directly into jurisdictional water or have a total drainage area of one acre or more shall be designed and constructed with outlet structures that only withdraw water from the surface. For sediment basins that do not drain directly into jurisdictional water or have less than one acre of total drainage area, surface dewatering outlets or stone outlets may be provided.

The Design-Build team shall adhere to the materials management requirements set forth in section F of the NCG010000 permit. Structural controls installed to manage construction materials stored or used on site shall be shown on the E&SC Plan.

The Design-Build Team shall coordinate with the Division Roadside Engineer to delineate the limits of their active operations to allow for routine maintenance mowing and litter removal operations to occur within the project limits.

Vegetation Management and Ground Cover Requirements

Vegetation Management

To ensure adherence with the April 1, 2019 NCG-010000 General Construction Permit, issued by

the North Carolina Department of Environmental Quality, Division of Water Resources, the Design-Build Team shall formally submit a project-wide Vegetation Management Procedure for the NCDOT's review and acceptance prior to any land disturbing activities. After this initial review, the Design-Build Team shall concurrently provide the NCDOT Resident Engineer and Roadside Environmental Field Operations Engineer updated versions of the Vegetation Management Procedure on a monthly basis. These updated versions will not require formal submittal to the Design-Build Unit but will be subject to review comments by the aforementioned field personnel. All versions of the Vegetation Management Procedure shall include, but not be limited to, 1) provisions for the early establishment of grasses / vegetation, 2) provisions for obtaining the required 80% permanent vegetation stand, as defined in the April 1, 2019 NCG-01000 General Construction Permit and in accordance with the *Permanent Vegetation Establishment* Project Special Provision found elsewhere in this RFP, by the project final completion date, and 3) procedure and schedule details for fertilizer topdressing, supplemental seeding, mowing and repair seeding. The Vegetation Management Procedure shall be closely coordinated with the grading and hauling operations. The Design-Build Team shall provide a narrative overview of the Vegetation Management Procedure in the Technical Proposal.

From the beginning through the end of construction, the Design-Build Team shall maintain a comprehensive list that details when and where permanent / temporary / repair seeding and fertilizer topdressing have been performed.

Ground Cover Stabilization Requirements – NCG010000 (7 – 14 Days)

Ground cover stabilization shall comply with the timeframe guidelines specified by the North Carolina Department of Environmental Quality, Division of Water Resources NCG- 010000 General Construction Permit that became effective on April 1, 2019. Excluding the slopes noted below, temporary and permanent ground cover stabilization shall be provided within seven calendar days from the last land-disturbing activity. The Design-Build Team shall label all slopes subject to the seven-day ground cover stabilization requirements on all Erosion and Sedimentation Control Plans submitted to the Department for review and acceptance.

For the slopes noted below, temporary and / or permanent ground cover stabilization shall be provided within 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of ten feet or less
- Slopes 3:1 or flatter, with a slope length of 50 feet or less
- Slopes 4:1 or flatter

Temporary and / or permanent ground cover stabilization shall be provided in accordance with the provisions in this RFP, the Vegetation Management Procedure developed by the Design-Build Team and the April 1, 2019 NCG-010000 General Construction Permit.

Additional Ground Cover Stabilization Requirements

Once the Design-Build Team identifies the area for stabilization due to inactivity, the Design-Build Team shall obtain concurrence from the Engineer and adhere to the following options based on the estimated amount of time the area will remain inactive. If the area stabilized exceeds the estimated timeframe, the Design-Build Team shall implement the next level of stabilization as directed by the Engineer. All application rates noted below are in pounds per acre.

Short Term Stabilization – For areas that will remain inactive for up to 21 days

Erodible areas shall be stabilized utilizing non-vegetative cover. Non-vegetative cover options include straw mulch, hydraulic applied erosion control products or rolled erosion control products. If straw mulch is used, it shall provide 100% groundcover and be tacked sufficiently to hold the mulch in place for the duration of the inactive period. All other methods shall be installed according to the manufacturer’s directions.

Mid-Term Stabilization – For areas that will remain inactive for up to 90 days

- Erodible areas shall be stabilized utilizing the following stabilization protocol:

March 1 – August 31

50# German or Browntop Millet
500# Fertilizer
4000# Limestone

September 1 – February 28

50# Rye Grain or Wheat
500# Fertilizer
4000# Limestone

- At the Engineer’s sole discretion, the use of limestone on sandy soils that require topsoil for stabilization may be eliminated. The Design-Build Team shall consult with, and obtain written approval from, the NCDOT Roadside Environmental Unit prior to eliminating limestone.
- Upon obtaining written approval from the Engineer, the Design-Build Team may use wood mulch and / or ground C&G debris as an option for Mid-Term Stabilization. If approved, the aforementioned mulch and / or debris shall be installed at a thickness that prevents erosion.

Long Term Stabilization – For areas that will remain inactive for more than 91 days

- Erodible areas shall be stabilized utilizing the following stabilization protocol:

March 1 – August 31

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

September 1 – February 28

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

* On cut and fill slopes 2:1 or steeper, the Design-Build Team shall apply centipede at a rate of five pounds per acre.

Riparian and Wetland Locations

March 1 – August 31

18# Creeping Red Fescue Cultivars ***
6# Indiangrass
8# Little Bluestem
4# Switchgrass
25# Browntop Millet
500# Fertilizer

September 1 – February 28

18# Creeping Red Fescue Cultivars ***
6# Indiangrass
8# Little Bluestem
4# Switchgrass
35# Rye Grain

4000# Limestone

500# Fertilizer
4000# Limestone

Waste and Borrow Areas

March 1 – August 31

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

September 1 – February 28

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

**** Approved Tall Fescue Cultivars**

06 Dust	Escalade	Justice Kalahari	Serengeti Shelby
2 nd Millennium 3 rd	Essential	Kitty Hawk 2000	Sheridan Signia
Millennium	Evergreen 2	Legitimate	Silver Hawk
Apache III	Falcon IV	Lexington	Sliverstar
Avenger	Falcon NG	LSD	Shenandoah Elite
Barlexas	Falcon V	Magellan	Sidewinder Skyline
Barlexas II	Faith	Matador	Solara
Bar Fa	Fat Cat	Millennium SRP	Southern Choice II
Barrera	Festnova	Monet	Speedway
Barrington	Fidelity	Mustang 4	Spyder LS
Barrobusto	Finelawn Elite	Ninja 2	SRP Tulsa Time
Barvado	Finelawn Xpress	Ol' Glory	Sunset Gold
Biltmore	Finesse II	Olympic Gold	Taccoa Tanzania
Bingo	Firebird	Padre	Trio
Bizem	Firecracker LS	Patagonia	Tahoe II
Blackwatch	Firenza	Pedigree	Talladega
Blade Runner II	Five Point	Picasso	Tarheel
Bonsai	Focus	Piedmont	Terrano
Braveheart	Forte	Plantation	Titan ltd
Bravo	Garrison	Proseeds 5301	Titanium LS
Bullseye	Gazelle II	Prospect	Tracer Traverse
Cannavaro	Gold Medallion	Pure Gold	Turbo
Catalyst	Grande 3	Quest	Turbo RZ Tuxedo
Cayenne	Greenbrooks	Raptor II	Venture Umbrella Van
Cessane Rz	Greenkeeper	Rebel	Gogh Watchdog
Chipper	Gremlin	Rebel IV	Wolfpack II Xtremegreen
Cochise IV	Greystone	Rebel Sentry	
Constitution	Guardian 21	Regiment II	
Corgi	Guardian 41	Regenerate	
Corona	Hemi	Rendition	
Coyote Exeda	Honky Tonk	Rhambler 2 SRP	
Darlington	Hot Rod	Rembrandt	
Dynasty	Hunter	Reunion	
Davinci	Inferno	Riverside	
Desire	Innovator	RNP	
Dominion	Integrity	Rocket	
Dynamic	Jaguar 3	RZ Ultimate	
Endeavor	Jamboree	Scorpion	

***** Approved Creeping Red Fescue Cultivars**

Aberdeen

Boreal Epic

Cindy Lou

- From January 1 – December 31, the Design-Build Team shall apply an additional 20# of Sericea Lespedeza on cut and fill slopes 2:1 or steeper.

Soil Analysis

If vegetation establishment indicates a deficiency in soil nutrients or an incurred pH level is present, the Design-Build Team shall take soil samples and apply additional soil amendments to the affected area and as directed.

Fertilizer

Fertilizer used within the project limits shall be 10-20-20 analysis or a different analysis that provides a 1-2-2 ratio applied at a rate that provides the same amount of plant food as a 10-20-20 analysis and as directed.

Fertilizer used for waste and borrow areas shall be 16-8-8 grade applied at a rate of 500 pounds per acre; or a different analysis that provides a 2-1-1 ratio applied at a rate that provides the same amount of plant food as a 16-8-8 analysis and as directed.

Supplemental Seeding

For all supplemental seeding, the kinds of seed and proportions shall be the same as specified above for *Long Term Stabilization*. The rate of application for supplemental seeding shall be between 25# to 75# per acre. Prior to topdressing, the Design-Build Team shall determine the actual rate per acre for supplemental seeding and submit the supplemental seeding rate and areas to the Department for review and acceptance.

To prevent disturbance of existing vegetation, minimum tillage equipment, consisting of a sod seeder, shall be used to incorporate seed into the soil where degree of slope allows. Where degree of slope prevents the use of a sod seeder, a clodbuster (ball and chain) may be used.

Erosion Control Damages

Damages

The Design-Build Team shall observe and comply with Federal and State Laws, Local Laws, Ordinances, and Regulations; as well as Orders and Decrees of Bodies having any jurisdiction or authority in accordance with Section 107 of the 2018 NCDOT *Standard Specifications for Roads and Structures*.

The Design-Build Team shall take all reasonable precautions to comply with all regulations of all authorities having jurisdiction over public and private land governing the protection of erosion and sedimentation. Any fines, remediation required or charges levied against the Department for failing to comply with all rules and regulations concerning erosion and sediment control, due to the Design-Build Team's negligence, carelessness, or failure to implement the Erosion and Sedimentation Control Plans and Specifications; or failure to maintain an approved Storm Water Pollution Prevention Plan (SWPPP), regardless of absence of neglect, shall be deducted from monies due the Design-Build Team. In addition to said fines, remediation required, or charges levied, any associated engineering costs or actions taken by the Department in order for the Department to comply with rules and regulations, as a result of the Design-Build Team's negligence, carelessness, or failure to implement the Erosion and Sedimentation Control Plans and Specifications; and / or the SWPPP, regardless of absence of neglect, shall be deducted from the

monies due to the Design-Build Team.

D-1.1g. Environmental Permits Scope of Work

General

The Department has obtained a: US Army Corps of Engineers (USACE) Section 404 Permit, NC Department of Environmental Quality, NCDWR Section 401 Water Quality Certification and Division of Coastal Management General Permit for I-5986C and R-5777D. If modifications to the abovementioned permits are required, the Design- Build Team shall prepare all designs and documents necessary for the Department to obtain permit modifications.

The Department will obtain a: US Army Corps of Engineers (USACE) Section 404 Permit, NC Department of Environmental Quality, NCDWR Section 401 Water Quality Certification, a Division of Coastal Management General Permit for HO-0002A, B & C. It is anticipated that the Department will obtain these permits by August 31, 2021. As stated elsewhere in this RFP the Design-Build Team may begin construction activities prior to obtaining the aforementioned environmental 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. If modifications to the abovementioned permits are required, the Design-Build Team shall prepare all designs and documents necessary for the Department to obtain permit modifications.

The Design-Build Team shall not begin ground-disturbing activities in jurisdictional areas until the permit modifications have been obtained if needed.

The Design-Build Team may begin construction activities prior to obtaining the aforementioned environmental 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 Design-Build Team is encouraged to advance as many construction activities as possible outside jurisdictional resources prior to issuance of the environmental permit modifications. The Design-Build Team shall indicate the specific construction activities that will occur outside jurisdictional resources prior to obtaining the environmental permit modifications and their anticipated start date in the Technical Proposal.

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 EAU - ECAP or the DEO present. A representative from the Design-Build Unit shall be included on all correspondence.

Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall be bound by the terms of all signed planning documents. 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 modification, including but not limited to public involvement, additional design effort, additional construction effort, and / or additional environmental agency coordination and approvals.

It shall be the Design-Build Team's responsibility to acquire information and prepare any needed revised permit drawings that reflect the impacts and minimization efforts. 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 modification. The aforementioned permit impact sheets shall be reviewed and accepted by the Department prior to the permit modification submittal. The Design-Build Team shall be responsible for developing the permit modification for all jurisdictional impacts. At a minimum, the permit application shall consist of the following to the level provided for the original permit:

- Permit drawings
- 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.

If permit modifications are needed, direct coordination between the Design-Build Team, the Design-Build Unit, Resident Engineer, DEO and EAU shall be necessary to ensure proper permit modification application development. Upon completion of the draft permit modification application, the Design-Build Team shall concurrently forward the permit modification application to the Design-Build Unit, Resident Engineer, Division Environmental Officer, Hydraulics Unit and EAU for review and approval. After all revisions are complete, the Department will subsequently forward the permit modification application to the appropriate environmental agencies.

Any temporary construction measures, including de-watering, construction access, etc. shall be addressed in the permit modification 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 EAU.

The Design-Build Team shall describe the construction methods for all structures that impact jurisdictional resources. The temporary impact descriptions (haul roads, utility relocations, work bridges, etc.) shall include restoration plans, schedules and disposal plans.

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 permit modifications 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 modification, the design shall be complete and accepted by the Department.

The Design-Build Team should expect it to take up to 4 months to accurately and adequately complete all designs necessary for the permit modification, submit the permit application to the Department, and obtain permit approvals from the environmental agencies. Environmental agency review time will be approximately 60 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 4-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 4-month period has been exceeded. If time were granted it would be only for that time exceeding the 4-month period. This 4-month period is considered to begin on the Date of Availability, as noted elsewhere in this RFP.

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

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 permanent wetland and surface water impacts, the Department will review the roadway project corridor for potential on-site mitigation opportunities. If no on-site mitigation opportunities are identified, the Department will debit compensatory mitigation for unavoidable permanent impacts to wetlands and surface waters due to the project construction from the NCDOT Debit Ledger assets and / or acquire the compensatory mitigation from the NC Division of Mitigation Services. This amount of mitigation will be based on impacts, as identified in the I-5986C/R-5777D, and HO-0002A, B & C permits provided by the Department.

Any changes proposed by the Design-Build Team to any design or construction detail 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 / or 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 a NCDOT prequalified environmental consultant to conduct a full environmental investigation to include, but not be limited to, Federally Listed Threatened and Endangered Species, wetlands, surface waters, avoidance and minimization in jurisdictional areas, compensatory mitigation, FEMA compliance, and historical, archaeological, and cultural resource surveys in these areas. The environmental consultant shall obtain concurrence through EAU, from the U. S. Fish and Wildlife 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 4-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.

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.

For other commitments, see Project Special Provisions for “Special Requirements for Work in National Forest”.

The MCAS property that lies between Holly Drive and Jackson Drive in Havelock must be avoided. The fiberoptic cable must be installed within NCDOT right-of-way in the grassy median between Mimosa Drive and US Highway 70 west, where there is an existing line of trees and power poles.

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 I-5986C/R-5777D, and HO-0002A, B & C Categorical Exclusions, all permits, and all site visits.

Staging of construction equipment or materials shall not occur within any of the National Register of Historic Places (NRHP) boundaries or potential NRHP eligible tax parcels depicted in the R-5777D, I-5986C and U-XXXX historic architecture and archaeology screening memos. Consultation with SHPO shall be required if changes to the location and method of installation

occur that would impact an NRHP boundary or potential NRHP eligible tax parcel noted in the screening memos.

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 Historic Architecture Group Leader, the NCDOT Archaeology Group Leader and the 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 Design-Build Unit. 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 Mary Pope Furr, NCDOT Historic Architecture Group Leader at (919) 707-6068, Matthew Wilkerson, NCDOT Archaeology Group Leader at (919) 707-6089, or David Stark, PE, NCDOT Priority Project Development Engineer at (919) 707-6605.

D-1.2. DB Contractor Coordination with OMC Contractor

Should the Department decide to progress with Procurement Track 1, the following will apply:

- DB Contractor will be required to work collaboratively with the OMC Contractor.
- The Department will enter into separate contracts with the DB and OMC Contractors, respectively
- The OMC Contractor will be required to install fiber and equipment as part of its OMC scope of work (please refer to Part E).
- It is anticipated that the OMC and the DB Contractors will have a view on a preferred phasing approach, respectively
- As a result, the DB and OMC Contractors will be required to negotiate, in good faith, a mutually agreed phasing approach
- NCDOT will approve the phasing approach prior to the execution of the DB and OMC Contracts

D-1.3. DB Technical Proposal and Evaluation Criteria

Qualified DB Proposals will be evaluated according to the Proposer's DB Technical Proposal and DB Price Proposal and assigned a score out of 100 points. The highest score will determine the Best DB Proposal.

The Proposer's DB Technical Proposal will be evaluated out of 10 points according to the Technical Evaluation Factors described further below, in order to derive the Proposer's DB Technical Proposal Score.

The Proposer's DB Price Proposal will be evaluated out of 90 points relative to other qualified DB Price Proposals, according to the formula below, in order to derive the Proposer's DB Price Proposal Score:

- If the DB Price Proposal is the lowest price out of all qualified DB Proposals:
Score = 90 points
- If the DB Price Proposal is not the lowest price out of all qualified DB Proposals:
Score = (Lowest Price) / (DB Price Proposal) x 90 points

Proposals will not be deemed non-responsive if the Proposer's Price Proposal results in a "funding gap." See Part C-1.2 for further explanation.

The Proposer's DB Technical Proposal Score (out of ten points) and the Proposer's DB Price Proposal Score (out of 90 points) will then be combined to calculate the Proposer's DB Proposal Score. The Proposer with the highest DB Proposal Score will be the Best DB Proposal.

The State Contract Officer will provide each Proposer with the Proposer's DB Technical Proposal Score, DB Price Proposal Score, and DB Proposal Score when the Department makes a Preferred Proposer and Preferred Procurement Track announcement.

Decisions based on cost alone will not establish the design standards for the project. Technical Proposals shall address the technical elements of the design and construction of the project. The

Technical Review Committee will consider the understanding of the project, the anticipated problems and the solutions to those problems, in addition to other evaluation criteria identified herein.

The Design-Build Team's Technical Proposal shall be developed using narratives, tables, charts, plots, drawings and sketches as appropriate. The purpose of the Technical Proposal is to document the Design-Build Team's understanding of the project, demonstrate the Design-Build Team's capabilities to complete the project, document their selection of appropriate design criteria and state their approach and schedule for completing all design and construction activities.

The review of design plans by the Department is not intended to reflect a reviewer's personal preferences, but rather to ensure that all contract requirements are met, sound engineering judgment is exercised by the Design-Build Team, and that the Design-Build Team adheres to all referenced documents, including but not limited to, design standards, codes, memos and manuals. As such, the Award of the Design-Build contract does not in any way imply that the NCDOT accepts the details of the Technical Proposal submitted by the Design-Build Team.

The Technical Proposal will be evaluated in each of the following major categories:

EVALUATION FACTORS	POINTS
1. Management	2
2. Responsiveness to Request for Proposal	3
3. Schedule and Milestones	3
4. Maintenance of Traffic and Safety Plan	2

TECHNICAL PROPOSAL EVALUATION CRITERIA

1. Management - 2 points

Provide a comprehensive Organizational Chart that identifies the design, quality and construction management, and the relationships with subconsultants / subcontractors. The Organizational Chart shall identify all firms and personnel changes (additions, substitutions, deletions) to the Design-Build Team since submittal of the Statement of Qualifications.

Design-Build Team Management

- Describe the Design-Build Team's concept of design management and identify key positions and subordinate organizational units.
- Describe how the various design disciplines will be coordinated, including how designs developed by different firms and offices will be integrated / consistent.
- Describe how design personnel will interface with the construction personnel.
- List projects, including description and similarity to the subject project that the Design-Build Team's designer(s) have developed Transportation Management Plans and ITS Plans.

- Describe the Design-Build Team’s concept of the project construction management organization and how it interrelates with the other elements of the Design-Build Team’s organization for the project.
- Describe the work categories that the Design-Build Team anticipates will be performed by the Design-Build Team’s own direct labor force and those categories that will be performed by subcontractors.

Quality Management

- Describe how the Design-Build Team will comply with the design and construction quality control requirements. Specifically, include a narrative that describes the Design-Build Team’s understanding of the Department’s quality control philosophy and how the Design-Build Team will implement it for this project.
- Describe any significant design and / or construction quality control issues experienced in the last ten years and how those issues will be addressed for this project.

2. Responsiveness to RFP - 3 points

Natural Environmental Responsibility

- Describe the Design-Build Team’s approach to addressing environmental concerns within the project boundaries.
- Describe the Design-Build Team’s understanding of the overall approach to permitting and the Team’s comfort level with obtaining permit modifications if the Team’s design requires. Identify efforts to minimize impacts on wetlands, streams, riparian buffers and other environmentally sensitive areas. Describe any temporary impacts and associated minimization approaches.
- Identify methods of construction in wetlands, streams and riparian buffers.
- Describe all project / construction related NOV’s received by any team member within the last five years on projects in the United States and the disposition of each listed NOV.
- Describe the Design-Build Team’s approach to Sedimentation and Erosion Control for the project.

Design Features

- Provide a detail of a typical installation along the roadway and on structures to include any special design features or construction techniques needed.
- Identify proposed deviations to the preliminary design provided by the Department, not required herein.
- Describe the Design-Build Team’s approach to avoid and minimize impacts to existing utilities within the existing right of way. In addition, describe the Teams approach to minimize or prevent future relocations.

3. Schedule and Milestones - 3 points

- Provide a brief narrative description of the Design-Build Team’s proposed plan for performing construction on the project. The description shall include at least the following:
 - Indicate if, and how, the Design-Build Team intends to divide the project into work segments to enable optimum construction performance.
 - Describe the Design-Build Team’s plans and procedures to ensure timely deliveries of materials to achieve the project schedule.
 - Describe the Design-Build Team’s approach to coordinating with active construction projects along both the I-95, US 70, and US 74 corridors.
- Provide a detailed schedule for the project including both design and construction activities. The schedule shall show the sequence and continuity of operations, as well as the month of delivery of usable segments of the project.
- The schedule shall also include the Design-Build Team’s final completion date and, if proposed, their substantial completion date. **These dates shall be clearly indicated on the Project Schedule and labeled “Final Completion Date” and “Substantial Completion Date”.**

4. Maintenance of Traffic and Safety Plan - 2 points

Maintenance of Traffic

- Provide a TMPC.
- Describe any traffic control requirements that will be used for each construction phase.
- Describe how traffic will be maintained as appropriate and describe the Design-Build Team’s understanding of any time restrictions noted in the RFP.
- Describe the Design-Build Team’s approach to site access and material staging, including material delivery to the project site.
- Specifically describe how business, school and residential access will be maintained along non-controlled access locations.
- If a temporary portable barrier system will be utilized, provide the type and why it is needed.
- Address if there will be a need to use law enforcement officers and describe how and where they will be used.
- Identify a Traffic Control Supervisor and briefly describe their qualifications for this role.

Safety Plan

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

- Describe any proposed improvements that will be made prior to or during construction that will enhance the safety of the work force and / or travelling public both during and after the project construction.

PART E: INFORMATION REQUIRED FROM PROPOSERS FOR OMC (TRACK 1b)

The purpose of Part E is to describe the information required for the OMC Procurement Track (Track 1b). In this section, OMC Proposers will find the following:

- **O&M Scope of Work (Part E-1.1)**, which describes all the scope of work elements attributable to the OMC Proposers. OMC Proposers must take note that there is an Operations, Maintenance and Commercialization Agreement Terms (Appendix Part B – OMC: Operations, Maintenance and Commercialization Agreement Terms) and price proposal sheet (Appendix Part D – OMC: Price Proposal for O&M and Commercialization) associated with Part E for OMC Proposers. The O&M Scope of Work includes the following:
 - Maintenance Description
 - Device Descriptions and Priority
 - Project Management Requirements
 - Construction and Maintenance Phasing
 - ITS Maintenance Contract Duration
 - Preventive Maintenance (“PM”)
 - Responsive Maintenance (“RM”)
 - Emergency Maintenance
 - NC811 Underground Location Services
 - Software Requirements
 - ITS Asset Management System (“IAMS”) Requirements
 - Work Order Management System
 - ITS Network Monitoring System (“INMS”) Requirements
 - Compensation and Pay-For-Performance
 - PM
 - RM
 - Emergency Maintenance
 - NC 811 Locate Services
 - Formulas for Performance Payments
- **Commercialization Scope of Work (Part E-1.2)**, which describes the assets to be installed by the DB Contractor available for commercialization and provides an overview of the additional scope of work the OMC Proposer may undertake.
- **OMC Contractor Coordination with DB Contractor (Part E-1.3)**, which provides an overview of the coordination that will be required between the OMC Contractor and DB Contractor, should the Department decide to progress with Track 1.

- **OMC Information Submittal Requirements (Part E-1.4)**, which provides an overview of the information required as part of the OMC Proposal.
- **O&M Services Submittal (Part E-1.5)**, which describes the information required as part of the OMC Proposal including the OMC Proposer’s approach to the O&M Scope of Work and relevant experience.
- **Commercialization Services Submittal (Part E-1.6)**, which describes the information required as part of the Commercialization Proposal including the OMC Proposer’s approach to the Commercialization Scope of Work and relevant experience.
- **OMC Price Proposal Submittal (Part E-1.7)**, which describes the information required as part of the OMC Proposer’s price proposal.
- **Base Case Financial Model Submission (Part E-1.8)**, which describes the financial model required as part of the OMC Proposer’s submission, in addition to the OMC Proposer’s price proposal.
- **OMC Evaluation Criteria (Part E-1.9)**, which describes the evaluation criteria of the OMC Proposal.

E-1.1. O&M Scope of Work

ITS Maintenance General Scope of Services

Maintenance Description

1. The NCDOT Transportation Systems Management and Operations (“TSMO”) Unit - Traffic Systems Operations (“TSO”) is responsible for:
 - a. The operations of the STOC and Regional Traffic Management Centers (TMC).
 - b. Using incident management, Intelligent Transportation Systems (“ITS”), traveler information strategies and signal system timing to support mobility and safety on the statewide roadway network.
2. The devices deployed along the I-95, U.S. 70, and U.S. 74 corridors will be operated by the STOC to support mobility and safety. TSO will provide contract and performance management oversight for this project. NCDOT Divisions 2, 4, 5, 6, 8, 10, 12, and 13 will provide maintenance validation and review.
3. The primary purpose and intent of maintaining the ITS devices along I-95, U.S. 70, and U.S. 74 is to enable effective transportation operations along these corridors. The uptime and availability of each ITS device is the primary focus so NCDOT can effectively operate these corridors.

Device Descriptions and Priority

1. The following ITS devices and supporting infrastructure shall be maintained by the Contractor:
 - a. Cameras and all related and supporting infrastructure including power injectors, cabling, and power supplies
 - b. DMS and all related and supporting infrastructure including the sign itself, sign controller, cabling and power supplies. DMS sign structure maintenance is NOT included in this contract.
 - c. Weigh station cameras and communication connectivity for the weigh station building including a fiber distribution panel and switch in the building. The demarcation point for network maintenance for the weigh station building is at the switch.
 - d. Communication connections for:
 - i. Closed loop traffic signal systems including the fiber distribution panel, fiber to the splice closure, network switch and/or network modem in the cabinet(s). The demarcation point for maintenance is at the switch and/or network modem.
 - ii. Rest areas buildings including a fiber distribution panel and switch in the building. The demarcation point for maintenance is at the switch.
 - iii. Traffic count stations including a fiber distribution panel and switch in the cabinet. The demarcation point for maintenance is at the switch.
 - e. Communication cable infrastructure including:
 - i. Underground conduit (spare and occupied) including bridge conduit systems

- ii. Aerial fiber in limited circumstances
 - iii. Conduit risers
 - iv. Handholes/junction boxes
 - v. Fiber optic cable
 - vi. Fiber optic splice enclosures
 - vii. Fiber distribution (patch) panels
 - viii. Fiber optic jumper cables
- f. ITS Device Cabinets and Hub Cabinets including power, generator transfer switch (if applicable), aesthetics, HVAC (if applicable), UPS, solar power unit (if applicable), batteries (if applicable), all cabling within the cabinet, fiber distribution panels within cabinets, conduits entering cabinet, cabinet base, pest control, mowing around the cabinets, graffiti removal, etc.
- g. Field switches including all switches within ITS device cabinets. Hub switches will not be maintained by the Contractor. The demarcation point for this contractor begins with the SFP which connects to the hub switch.
- h. Cellular modem communications equipment and supporting hardware used for any ITS devices along the corridor. NC DIT provides the modems, SIM cards, and service. The Contractor will only be responsible for requesting new modems from NC DIT for the appropriate locations, installing them, and monitoring them.
- i. CV Technology Site including poles, RSU, antennas, pole, power in the cabinet, cabinet fan, all cabling, conduit, fiber distribution panel and fiber to the splice enclosure.
- j. RWIS including the RWIS controller, sensors, pole, power in the cabinet, cabinet fan, all cabling, conduit, fiber distribution panel and fiber to the splice enclosure.
- k. The Contractor shall be responsible for handling and on-site storage of all waste generated during O&M activities in full compliance with all federal, state, and local laws.
- l. The Contractor shall maintain adequate reserve stocks of cabling, racks, assemblies, special parts, and other spares to meet or exceed the performance requirements included in Appendix A.
2. Individual devices will be assigned an asset class which defines the acceptable availability and contract disincentives for pay-for-performance.
- a. The following asset classes are assigned on a per-device basis:
 - i. General
 - ii. Essential
 - iii. Vital
 - b. NCDOT provides quantities for the number of devices in each asset class in Appendix A as informational purposes only. NCDOT may change these quantities at a later date at their discretion by assigning individual devices to different asset classes.

- c. This contract does allow for the addition of future devices unaccounted for in the contract at this time. Those devices would be assigned a priority at the time when they are added.
 - d. Compensation and Pay-For-Performance of this specification provides additional details as to how the priority of the device impacts Contractor compensation and the Contractor's cost proposal.
3. The O&M Contractor shall coordinate with the Design-Build Contractor and witness full fiber optic testing as necessary to ensure fiber optic cabling and ITS devices are completely operational and within NCDOT specifications prior to taking over O&M responsibilities.
 4. The O&M Contractor shall comply with all current and future environmental requirements set forth in Applicable Law, technical guidance and policy, and all environmental related approvals required by NCDOT. The O&M Contractor shall be responsible to maintain complete, reliable operation of the fiber optic network and all related Fiber Infrastructure.
 5. The O&M Contractor shall perform all duties, tasks, and all other responsibilities required by this RFP in accordance with ANSI and National Electrical Installation Standards ("NEIS") standard 301 (ANSI/NEIS 301 standards) and recognized industry best practices.

Project Management Requirements

1. The Contractor shall develop an ITS Maintenance Project Management Plan ("PMP"). The PMP shall be developed as a draft and delivered to NCDOT for review and comment. The PMP shall, at a minimum, address the following requirements:
 - a. Performance Monitoring Plan: The Contractor shall monitor its own performance to ensure that the performance criteria and outcomes are achieved. The PMP shall include procedures to ensure that all work meets or exceeds the performance criteria contained within this specification.
 - i. The Contractor must provide a backup dashboard for performance management and maintenance tracking outside of the ITS Work Order Management System ("IWOMS") software. The use and management of this dashboard shall be defined in the Contractor's Performance Management Plan. See ITS Maintenance General Scope of Services.
 - ii. The Contractor shall provide an independent Performance Management dashboard that displays % availability and repair time for each asset on a daily and monthly basis. The dashboard shall also provide cumulative reporting and data displays on a per asset type and per asset class basis on a daily and monthly trend basis.
 - iii. The O&M Contractor shall develop and maintain a library of OEM SOP for all Fiber Infrastructure and ITS assets and tasks included in the RFP
 - b. Quality Control Plan: The Contractor shall develop and implement a Quality Assurance and Quality Control ("QA/QC") Plan that will allow the Contractor to achieve quality deliverables and work products that meet NCDOT's needs. The Quality Control Plan shall include the QA/QC process that the Contractor will follow for all work products and deliverables. For example, there should be an individual QA/QC process outlined for PM in the QA/QC Plan.

- c. Staffing Plan: The Contractor shall provide designated and appropriate staff throughout the life of the contract. This staffing will include at least three (3) full time positions which will be dedicated full time positions for ITS maintenance under this contract. These three (3) positions shall be:
 - i. Project Manager
 - ii. ITS Maintenance Lead Technician
 - iii. ITS Maintenance Technician
 - d. The PMP shall include a staffing plan that includes staffing levels and an organizational chart depicting the structure, reporting hierarchy, roles, and responsibilities among Contractor staff and subcontractor staff. The contractor shall ensure that any staff replacement meets or exceeds the qualifications set forth in this staffing plan. For the three (3) full-time positions listed above, the Contractor shall submit a letter requesting approval of the proposed employee replacement and NCDOT must approve.
 - e. Communications Management: The Contractor shall develop a communications management plan to be included in the PMP that will define the communication requirements for this project and how information will be disseminated. The communication plan shall propose a procedure for communication for the following specific circumstances at a minimum:
 - i. RM diagnosis requests to the project manager.
 - ii. Performance management reporting including the required dashboard.
 - iii. Coordination with STOC and other NCDOT staff regarding maintenance notifications, requests, questions, and updates.
 - iv. Coordination with NC Department of Information Technology for troubleshooting.
 - v. Communication methodology used for IAMS, IWOMS, INMS and backup communication methodology for when those systems are down or unavailable.
 - f. Additional Project Management Duties: The Contractor shall include the following additional project management duties in the PMP:
 - i. Document management
 - ii. Human resource management
 - iii. Scope management
 - iv. Contract administration and management
 - v. Inventory control approach
2. The PMP as it relates to O&M shall be delivered in draft to NCDOT as part of the technical submittal for the RFP.

Construction and Maintenance Phasing

1. The Contractor shall accommodate construction and maintenance phasing within this project.
 - a. Upon award of this Contract, the Contractor shall begin preventive, responsive and emergency maintenance services for all existing DMS, their related cabinets, and related communications devices along the project corridors and supporting alternate routes.
 - i. The ITS Design specification provides a list of all existing DMS that the Contractor must begin maintenance on. NCDOT has assembled a list of sign make and models and believes it to be accurate. However, NCDOT does not guarantee the accuracy of this information and the contractor will be responsible for maintaining any signs not included in this list:

Make	Model	Controller Model
Daktronics	VF-2420-27x60-66-A	VFC-3000
Ledstar	118-27X90-118	CTL-24
Daktronics	OZ-11322-1000TC	VFC-3000
Daktronics	OZ-11336-1000TC	VFC-3000
Daktronics	VF20x027x90-66-a	VFC-3000
Daktronics	VF20x027x90-66-a	VFC-3000
Daktronics	VF20x027x90-66-a	VFC-3000
Daktronics	VF20x027x90-66-a	VFC-3000
Daktronics	VF2020-27X90	VFC-3000
Daktronics	VM-1020-7x35-66-RG	VFC-3000
Daktronics	VM-1020-24x160-20- RGB	VFC-3000
Daktronics	VF-2420-96x208-20- RGB	VFC-3000
Daktronics	VF-2420-96-368-20-RGB	VFC-3000
Daktronics	VF-2020-96x288-20- RGB	VFC-3000
Daktronics	VF-2020-27X90-66-A GIV	VFC-3000
Ledstar	VMS-118-27X90	CTL-24

- ii. The Contractor’s PM Plan shall include an approach and schedule for completing PMs and/or RM on all existing DMS within the first 3 months of the project. If RM is required, it shall be completed at the time of the PM.
- iii. Device availability performance and disincentives will not be monitored or assessed until each device has undergone an initial PM process.
- iv. As each device PM is completed, it will begin being tracked for Pay-For-Performance availability and RM disincentives.
- v. Within 3 months of contract award, all DMS will begin being tracked for Pay-For-Performance availability and RM disincentives.

- vi. The Contractor shall be compensated for DMS maintenance according to the bid price for daily maintenance until initial PMs are completed.
 - vii. For existing cameras being upgraded as part of this project, the Track 1a Contractor shall upgrade those cameras within the first 3 months of the project and shall be responsible for PM and RM on those devices until those devices are transitioned to the Track 1b Contractor through system acceptance testing.
- b. For all ITS infrastructure being constructed as new or existing devices being upgraded as a part of this project:
- i. The Track 1a Contractor will be responsible for construction and device upgrades in individual segments as stated in the Track 1a scope of work.
 - ii. The Track 1a Contractor will be responsible for working with NCDOT and the Track 1b Contractor to complete system acceptance testing for each segment. All three parties (Track 1a Contractor, Track 1b Contractor, and NCDOT) will perform acceptance testing. The Track 1b Contractor will be responsible for attending acceptance testing and providing detailed explanation for deviations to specifications and design guidelines within 10 business days if applicable. NCDOT will consider all comments provided by the Track 1b contractor, but maintains authority to approve or disapprove acceptance testing based on NCDOT's sole judgment of the Track 1a Contractor's performance with regard to the specifications and contract.
 - iii. Once acceptance testing is signed off on by NCDOT for an individual network segment (as described in the Track 1a Contractor scope of work), all infrastructure in that segment will begin being tracked for Pay-For-Performance availability and RM disincentives.
2. The Contractor shall accommodate construction and maintenance phasing with construction projects external to this contract.
- a. When a separate construction project is on-going along the I-95, U.S. 70, and U.S. 74 or supporting alternate route corridors, the Contractor shall be responsible for maintenance of existing devices within the construction project limits including network infrastructure.
 - b. When a separate construction project must interrupt ITS device connectivity and functionality:
 - i. The construction project will be required to place a temporary ITS device near the existing ITS device and the construction project will maintain the temporary device.
 - ii. Once the temporary device is operational and has passed NCDOT acceptance testing, the existing device will be removed from Pay-for-Performance tracking and will no longer be maintained by the Contractor.
 - iii. Once the final proposed assets and network infrastructure within a construction project are constructed and have passed NCDOT acceptance testing, the infrastructure will undergo a 30-day burn-in period and then be added to the Pay-for-Performance tracking and will be maintained by the Contractor for both preventive and RM. The temporary devices will be removed from Pay-for

Performance tracking and will no longer be the responsibility of the ITS Maintenance Contractor.

Preventive Maintenance

1. PM shall be performed on all infrastructure described in this section, on average, once every 6 months. The PM shall be performed within 5-7 months of the previous PM on the infrastructure component.
2. Hardware warranties shall be managed by the Contractor on NCDOT's behalf.
3. PM shall be performed on all infrastructure of the following types:
 - a. Cameras including Weigh Station Ramp Viewing Cameras
 - i. Contractor to propose camera PM checklist for the camera itself, power in the cabinet, GFCI testing, cabinet cooling components and replaceable filters, all cabling, conduit, fiber distribution panel, UPS, UPS batteries, gasket locks, base sealing, pest control, conduit sealings, solar panel assemblies and fiber to the splice enclosure.
 - ii. Camera PM shall include cleaning (or replacement, if required) of the camera dome and verification of adequate video transmission.
 - iii. Shall include PM of the network switch and/or network modem in the cabinet.
 - b. DMS
 - i. Contractor to propose DMS PM checklist for the DMS sign, cabinet cooling components and replaceable filters, the DMS controller, power to the sign and controller, GFCI testing, all overhead DMS components, all cabling, conduit, fiber distribution panel, UPS, UPS batteries, gasket locks, base sealing, pest control, conduit sealings, and fiber to the splice enclosure.
 - ii. PM checklist to include a visual structural inspection of the DMS structure. Any deficiencies should be reported to NCDOT immediately.
 - iii. Shall include PM of the network switch and/or network modem in the cabinet.
 - c. Weigh station cameras and communication connections.
 - i. Contractor to propose weigh station PM checklist which shall include PM of the fiber distribution panel, fiber to the splice closure, network switch and/or network modem in the cabinet(s) (if applicable) and the building network connection.
 - ii. PM for the Weigh Station components associated with WIM, Tire Anomaly System, Scales, etc., are handled by others.
 - d. Communication connections for:
 - i. Closed loop traffic signal systems
 1. Contractor to propose closed loop traffic signal system communication connection PM checklist which shall include PM of the fiber distribution panel, fiber to the splice closure, network switch and/or network modem in the cabinet(s).

- ii. Rest areas
 - 1. Contractor to propose rest area communication connection PM checklist which shall include PM of the fiber distribution panel, fiber to the splice closure, network switch and/or network modem in the cabinet(s) (if applicable) and the building network connection.
- iii. Traffic count stations
 - 1. Contractor to propose traffic count station communication connection PM checklist which shall include PM of the fiber distribution panel, fiber to the splice closure, network switch and/or network modem in the cabinet(s) (if applicable).
- e. Communication cable infrastructure including:
 - i. Handholes/junction boxes
 - 1. Contractor to propose PM checklist which shall include PM of junction box lids and boxes (including replacement if necessary), assessment of junction box damage, conduit sealing for both spare and occupied, tracer wire test switch, ground rod and grounding conductor connection, metal conduit bonding if applicable, verification and replacement of electronic marker balls, and delineator markers.
 - ii. Fiber optic cable
 - 1. Contractor to propose PM testing plan for dark fiber along the project to verify the validity of the fiber every 6 months. The design requires all fibers to be terminated in hubs and to be spliced through at each splice enclosure. The Contractor shall perform bi-directional OTDR tests on spare fibers between each hub during PM to verify fiber validity.
- f. Hub Cabinets
 - i. Contractor to propose Hub Cabinet PM checklist for the cabinet itself, power in the cabinet, cabinet cooling components and replaceable filters, security/door alarm, cabinet HVAC, Uninterruptable power supplies (including battery replacement), all cabling, conduit, fiber distribution panels and fiber to the splice enclosure.
 - ii. Shall not include PM of the hub network switch in the cabinet.
- g. Field switches
 - i. Contractor to propose field switch PM checklist, which will be completed at the same time as PM for the related device connected to each field switch.
 - ii. The field switch PM checklist shall include at a minimum: coordination with NC DIT for determination of latest configuration that should be loaded on each switch, update of switch firmware based on latest NC DIT standard.
- h. CV Technology Sites

- i. Contractor to propose CV PM checklist, for the RSU, antennas, pole, power in the cabinet, cabinet cooling components and replaceable filters, all cabling, conduit, fiber distribution panel and fiber to the splice enclosure. The Contractor shall verify message dissemination functionality from STOC to the RSU.
 - ii. Shall include PM of the network switch and/or network modem in the cabinet.
 - i. RWIS
 - i. Contractor to propose RWIS PM checklist, for the RWIS controller, sensors, pole, power in the cabinet, cabinet cooling components and replaceable filters, all cabling, conduit, fiber distribution panel and fiber to the splice enclosure.
 - ii. Shall include PM of the network switch and/or network modem in the cabinet.
4. Device Quantities and Future Growth
 - a. The list of existing and proposed devices is provided in the ITS Design Specification.
 - b. The quantity of infrastructure components is expected to grow at a rate of 8-15% per year after steady state quantities are reached. This growth is not guaranteed and is dependent upon future NCDOT infrastructure needs which are currently undefined.
 - c. The quantities listed in Appendix Part D – OMC: Price Proposal for O&M and Commercialization on the O&M tab, are steady state quantities. Upon initial commencement of the contract, smaller quantities of existing devices will be managed by the O&M contractor initially until other devices are constructed through the Design-Build SOW and by other projects along the I-95, U.S. 70, and U.S. 74 corridors. Over a period of 3-5 years, the devices will reach the steady state quantities listed in Appendix Part D – OMC: Price Proposal for O&M and Commercialization.
 - d. Contractor to provide pricing per individual device per day. This will enable the contract to be extended to add additional device days as needed to incrementally support device growth.
5. Responsibilities of the Contractor and NCDOT
 - a. The Contractor will be responsible for:
 - i. PM management and development of a PM Plan. The PM Plan will be subject to review and approval by NCDOT. The PM Plan shall include the following components:
 1. Draft Individual PM Checklists
 2. Standard Traffic Control Plans for PM
 3. PM Schedule
 4. Monthly PM Update Meetings with NCDOT Project Manager
 - ii. Providing traffic control that meets NCDOT standards for all maintenance activities including traffic control time restrictions as required by NCDOT.
 - iii. Submitting a pro-active device operations plan that provides a detailed schedule for routine inspections/repairs of all infrastructure elements. This plan is subject to approval by NCDOT staff.

- iv. Following NCDOT standards of safety, traffic control, and site access.
 - v. Submitting an accurate record of pro-active maintenance activities using Contractor-provided IWOMS.
- b. NCDOT will be responsible for:
- i. Specifying the location, type, version, firmware version of devices and infrastructure.
 - ii. Monitoring PM schedule, activity log, traffic safety, and routine quality control for contractor maintenance activities.
 - iii. NC Department of Information Technology will be responsible for Hub Switch PM and TMC PM.
 - iv. Monitoring performance of the contractor, payment, and general contract management.
6. Performance Requirements and Payment
- a. Performance requirements, payment, and cost provision are specified in Compensation and Pay-For-Performance of this specification.

Responsive Maintenance

1. RM shall be performed on all infrastructure described in Device Descriptions and Priority.
2. RM shall occur in four phases and shall be consistently managed using the IAMS, IWOMS, and INMS.
 - a. Phase I of RM includes initial notification of a device or network failure which is initially triggered in INMS and logged in INMS, IWOMS, and IAMS. An initial trouble ticket is logged in IWOMS. This phase lasts until the beginning of Phase II.
 - i. The IWOMS will also enable trouble tickets to be opened manually for non-network related maintenance issues. The Contractor will be responsible for opening a trouble ticket when notified of maintenance issues not already logged in the IWOMS.
 - b. Phase II of RM includes initial response of the Contractor to verify that initial diagnosis of the device or network failure has begun. This phase is logged as complete in IWOMS when a detailed report of the diagnosis and a proposed schedule to repair are submitted in IWOMS.
 - c. Phase III: The Contractor proceeds with repair of the asset. This phase is complete when the device or network failure has been resolved and has been logged in IWOMS. The device status is updated in INMS and IAMS.
 - d. Phase IV of the RM begins a 24 hour period of operational testing of the resolved issue, where the device or network failure is being closely monitored by the Contractor and/or NCDOT. Once the issue has been resolved for 24 hours, the RM phase is logged as complete in IWOMS. If the issue fails again within 24 hours, the RM phase starts at Phase I again, but is considered part of the initial trouble ticket in IWOMS for non-performance tracking. If the device stays operational for 24 hours, Phase IV will not be included in the

total time allocated for RM. If the device fails within 24 hours and goes back to Phase I, then Phase IV is included in the total time allocated for RM.

3. The Contractor shall receive non-performance disincentives to their monthly invoice when the total time for all four RM phases exceeds an established time frame for each asset type and class.
 - a. The timeframes vary based on asset class and asset type. See Compensation and Pay-For-Performance.
 - b. See Compensation and Pay-For-Performance for details for non-performance disincentives.
4. Device downtime and network outages that result in device downtime for many devices will impact the overall % availability for ITS devices which is being tracked as part of ITS Maintenance Performance Management Plan. The % availability may impact Contractor compensation. See Compensation and Pay-For-Performance for details.
 - a. Network outages that impact multiple devices will have a higher impact on % availability of devices.
5. The Contractor will not be responsible for network outages and downtime that are due to network outages caused by failures in Hub Switch, Core Switch, or Firewalls maintained by NC Department of Information Technology unless these outages are caused by the Contractor.
6. Device Quantities and Future Growth
 - a. Assets maintained by the Contractor include existing devices within the project limits, proposed devices to be constructed by the Contractor, and an unknown future quantity of devices. Compensation for existing, proposed and future assets is further defined in Compensation and Pay-For-Performance.
 - b. The quantity of infrastructure components is expected to grow at a rate of 8-15% per year after steady state quantities are reached. This growth is not guaranteed and is dependent upon future NCDOT infrastructure needs which are currently undefined.
 - c. The quantities listed in Appendix Part D – OMC: Price Proposal for O&M and Commercialization on the O&M tab, are steady state quantities. Upon initial commencement of the contract, smaller quantities of existing devices will be managed by the O&M contractor initially until other devices are constructed through the Design-Build SOW and by other projects along the I-95, U.S. 70, and U.S. 74 corridors. Over a period of 3-5 years, the devices will reach the steady state quantities listed in Appendix Part D – OMC: Price Proposal for O&M and Commercialization.
7. Contractor Compensation
 - a. See Compensation and Pay-For-Performance for details.
8. Responsibilities of the Contractor and NCDOT
 - a. The Contractor will be responsible for:
 - i. Submitting a RM plan that provides a detailed procedure and checklist for troubleshooting each ITS device type and network outage scenario.

- ii. Facilitation of Monthly PM Update Meetings with NCDOT Project Manager
 - iii. Following NCDOT standards of safety, traffic control, and site access.
 - iv. Providing traffic control that meets NCDOT standards for all maintenance activities including traffic control time restrictions as required by NCDOT.
 - v. Submitting an accurate record of RM activities using IWOMS.
 - vi. Updating IAMS with updated asset information within 5 business days of repair and/or replacement of infrastructure.
 - vii. Updating INMS with updated IP address or SNMP information within 24 hours of repair and/or replacement of infrastructure.
- b. NCDOT will be responsible for:
- i. Managing the list of assets to be maintained by the Contractor and designating the asset class for each asset.
 - ii. NCDOT Division - Monitoring activity log, traffic safety, and routine quality control for contractor maintenance activities.
 - iii. NC Department of Information Technology - hub switch RM and core switch RM.
 - iv. NCDOT Traffic Systems Operations - Monitoring performance of the contractor, payment, and general contract management.

Emergency Maintenance

1. The Contractor shall perform Emergency maintenance work as requested by NCDOT. Emergency maintenance work applies to assets that are not maintained under the Pay-For-Performance Clause. Emergency maintenance work is defined as:
 - a. Repairs to any ITS asset or ITS asset structure (camera poles, DMS sign structures, RWIS structures, CV poles) as deemed immediately necessary by NCDOT Structures
 - b. Vehicle collision repairs to ITS assets.
 - c. Tree and/or vegetation trimming for trees and/or vegetation that occludes camera vision to the roadway and/or assets.
 - d. Tree removal for trees that occlude a camera's vision to the roadway and/or assets.
 - e. At NCDOT's discretion, any damage considered to be outside the original scope of ITS Maintenance.
 - f. Lightning damage is excluded from Emergency Maintenance work.
 - g. Repairs to any asset necessitated by a Force Majeure event.
2. NCDOT may issue a separate Emergency Task Order for the repair and replacement of critical assets under this Contract. The Contractor shall provide unit prices for various emergency

maintenance work that may occur under this Contract. These unit prices shall be inclusive of traffic control. The Contractor shall provide unit prices for the following:

- a. Camera tree trimming
- b. Camera tree removal
- c. DMS Replacement
- d. Cabinet Replacement
- e. CMS Troubleshooting and Repair

NC811 Underground Location Services

1. The North Carolina Underground Damage Prevention Act, Article 8 of Chapter 87 of the North Carolina General Statutes (“UDPA”), requires all utility designees to provide the location and description of all underground facilities, which may be damaged as a result of an excavation. The NCDOT is notified of these requests through the NC 811 system.
2. The Contractor shall provide the personnel, materials, equipment, supplies, training, traffic control, and supervision necessary for 811 locating services for all fiber optic and electrical underground utilities (Contractor is responsible for electrical utilities 811 locating between the power service meter and the ITS assets, the power company will be responsible for 811 locates for meter service and power distribution) within the right-of-way for I-95, U.S. 70, and U.S. 74 within the project limits. The Track 1a Contractor will be responsible for providing 811 services for newly constructed segments of infrastructure until NCDOT has accepted the infrastructure. The Track 1a Contractor shall notify the Track 1b Contractor 1 month in advance of acceptance testing to enable the Track 1b Contractor 1 month to prepare for NC811 work to be performed. The Track 1b Contractor will be responsible for providing NC 811 services for new construction infrastructure immediately following acceptance by NCDOT of Track 1a construction segments as identified in the Track 1a scope of work.
 - a. Per North Carolina General Statute 87-121, the Contractor shall provide to the Excavator (a third party company) the horizontal location and description of all the operator’s facilities in the area where the proposed excavation or demolition is to occur. The location shall be marked by stakes, soluble paint, flags, or any combination thereof, as appropriate, depending upon the conditions in the area of the proposed excavation or demolition.
 - b. The Contractor shall adhere to North Carolina General Statute 87-121 and the American Public Works Association (“APWA”) Uniform Color Code for marking. The dimension of the facility shall be indicated at least every 25 feet in the area of the proposed excavation or demolition if the width of the facility is greater than four inches.
 - c. The Contractor shall locate each individual facility when multiple facilities are in the area of the proposed excavation or demolition.
 - d. The Contractor shall provide traffic control (if required) and follow all NCDOT safety guidelines for 811 locates.
 - e. The Contractor shall comply with all applicable safety regulations and wear appropriate personal protective equipment (“PPE”) while performing work. In the event the Contractor’s non-compliance with Occupational Safety and Health Administration

- (“OSHA”) regulations results in a fine against NCDOT, the Contractor shall reimburse NCDOT for such a fine and any other costs relating to the fine.
- f. All physical locates shall be in accordance with the Underground Utility Safety and Damage Prevention Act.
 - g. Non-emergency locate requests must be completed within seventy-two (72) hours, three (3) business days, of the initial request to the designated Notification Center.
 - h. Emergency locate requests must be completed within four (4) hours of the initial request.
 - i. The Contractor shall be available and able to respond to Emergency Locate Requests on weekends, holidays and at any time of the day or night.
 - ii. The Contractor shall provide a way for emergency locate requests to be communicated to the Contractor twenty-four (24) hours a day seven (7) days a week (24/7).
 - i. Positive responses to the NC811 Notification Center are required per North Carolina General Statute 87-121.
 - j. Contractor shall be responsible for configuring underground utilities in the IAMS and uploading appropriate data to NC811.
3. As part of the Contractor’s proposed performance management plan, the Contractor shall include methodology for performance monitoring and tracking of NC811 Locate Requests within the project limits.
- a. The Contractor must keep an electronic record of all Locate Requests for the term of the Contract and for one (1) year after Contract expiration. Electronic records shall be kept in IWOMS. The Contractor records shall include:
 - i. Work order #, Date of initial locate request, date of locate services performed, the locate area latitude and longitude, the length of the facilities locate – reported in feet, and when applicable, related comments.
 - ii. Digital photographs in medium resolution showing each marked site and distinguishing characteristics of the worksite. Each digital photograph shall be identified by the corresponding work order # and must have a time/date stamp on the photograph.
4. The Contractor shall provide an emergency plan for responding to 811 locate requests during inclement weather or natural disaster situations.
5. The Contractor shall exercise all reasonable care and diligence in providing NC811 Services to NCDOT. The Contractor must use techniques representative of industry standards when providing these services. If damage occurs to any portion of NCDOT electric or fiber optic infrastructure within the project right-of-way and it is determined that the Contractor received a valid Locate Request in a timely manner and failed to do the locate in accordance with the Contract service time responsiveness outlined in this section, the Contractor shall be one hundred percent (100%) financially responsible for the repairs to the electrical and fiber optic infrastructure.

Software Requirements

IAMS Requirements

1. NCDOT will provide the Contractor access to an NCDOT-provided and owned IAMS
 2. General Description: The contractor shall configure, operate, and maintain the IAMS for the corridors specified in this contract. The IAMS shall be an integrated productivity tool and database that helps manage all asset types being maintained under this contract. The IAMS has the following features, which will be configured and maintained by the Contractor for all assets within this project:
 - a. Geographic mapping with the exact location of all ITS Assets
 - b. Georeferenced databases that provide configurable fields for each device and enable device types to have related databases with complementary devices. For example, a camera may have a field Ethernet switch installed in its cabinet, and thus the two would be related.
 - c. Asset status tracking
 - d. Detailed fiber optic cable asset information (the IAMS may use separate software for fiber asset management and standard asset management)
 3. The Contractor shall utilize IAMS to provide monthly fiber GIS shapefile outputs for updating NCDOT 811 tracking.
 4. The IAMS will :
 - a. Provide simple adding, exchanging and deleting of assets.
 - b. Provide point, linear, and polygon features as assets.
 - c. Designate the physical location (latitude and longitude) of assets.
 - d. Maintain a spare asset database for each ITS component.
 - e. Provide database storage to connect MicroStation and PDF plans to specific features and shall provide links to connect MicroStation and PDF plans in linked file storage locations. The IAMS shall provide database storage to connect asset images to individual features within the geodatabase.
 - f. Provide fiber allocation tracking, where the system automatically identifies all cables/fibers being used for a particular network connection using a simple query. The GIS map interface shall display the path of any two-fiber communication channel throughout the system.
 - g. Hosted by NCDOT but with data being maintained by the Contractor.
 5. ITS Assets and Data Fields: The following ITS assets and data fields shall be configured, and maintained by the contractor in the IAMS software:
 - a. Cameras (including weigh station cameras) with the following data fields:
 - i. Camera ID, Date of Installation, Model Number, Firmware Version, Latitude, Longitude, Power Type, Communication Type, Date of Last PM, Status
 - ii. Related Switch ID
-

- iii. Related Modem ID
- iv. Power Injector ID, Date of Installation, Model Number, Status
- b. DMS with the following data fields:
 - i. DMS ID, Date of Installation, Model Number, Latitude, Longitude, Communication Type, Date of Last PM, Status
 - ii. DMS Controller ID, Date of Installation, Model Number, Firmware Version, Date of Last PM, Status
 - iii. Related Switch ID
 - iv. Related Modem ID
 - v. Communication Channel ID
- c. CMS with the following data fields (at this point there are no CMS in this contract):
 - i. CMS ID, Date Purchased, Date Placed in Current Location, Model Number, Latitude, Longitude, Date of Last PM, Status
 - ii. DMS Controller ID, Date of Installation, Model Number, Firmware Version, Date of Last PM, Status
 - iii. Modem ID
- d. Closed Loop Traffic Signal Communication Connections with the following data fields:
 - i. Connected Signal ID, Date of Connection, Latitude, Longitude, Communication Type, Date of Last PM, Status,
 - ii. Related Switch ID
 - iii. Related Modem ID
- e. Weigh Station, Rest Area, and Traffic Count Station Communication Connections with the following data fields:
 - i. Connected Facility ID, Facility Access Contact, Date of Connection, Latitude, Longitude, Communication Type, Date of Last PM, Status
 - ii. Related Switch ID
- f. Communication Conduit with the following data fields:
 - i. Each communication conduit shall have a unique ID for each continuous conduit section of a certain installation type.
 - ii. Conduit ID, Color, Owner or Lessee, Type, Size, Quantity, Installation Type, Material, Total Fiber Cables, Total Fibers, Total Ethernet Cables, Date of Installation, Related TIP Project, Plans, Repair Dates, Status
 - iii. Related Cable IDs (Many-to Many Relationship Table)
- g. Communication Cables with the following data fields:
 - i. Each communication cable shall have a unique ID for each continuous section of cable between terminations and splice closures.

- ii. Cable ID, Status, Type, Owner, Fiber Count, Fiber Material, Date of Installation, Related TIP Project, Repair Dates
 - iii. Each cable ID shall be internally linked to a database within the IAMS that documents the allocation of each individual fiber within each individual cable ID.
 - iv. Related Conduit IDs (Many to Many Relationship Table)
 - v. Related Splice Closure IDs
 - vi. Related Panel IDs.
- h. Handholes/Junction Boxes with the following data fields:
- i. Junction Box ID, Status, Communication or Electrical Designation, Type, Size, Owner, Date of Installation, Related TIP Project, Repair Dates, Latitude, Longitude
 - ii. Related Conduit IDs (Many to Many Relationship Table)
 - iii. Related Cable IDs
 - iv. Related Splice Closure IDs
- i. Fiber Optic Splice Closures with the following data fields:
- i. Splice ID, Status, Closure Make/Model, Tray Make/Model, Existing Cassettes, Spare Cassette Slots, Existing Cables, Spare Cable Slots, Date of Installation, Related TIP Project, Repair Dates, link to splice diagram, Latitude, Longitude
 - ii. Splice Diagram
 - iii. Related Cable IDs
 - iv. Related Junction Box ID
 - v. Related Cabinet ID, if applicable
- j. Field Network Switches with the following data fields:
- i. Switch ID, Communication Channel ID, Status, Make, Model, Ports in Use, Available Ports, Firmware Version, Make/Model of SFP in Port 1, Make/Model of SFP in Port 2, SFP 1 Install Date, SFP 2 Install Date, Date Switch of Installation, Related TIP Project, Repair Dates , Latitude, Longitude
 - ii. Related Cabinet ID
 - iii. Related Switch ID
 - iv. Related connected device IDs
 - v. Related Hub Switch IDs
- k. Cabinets with the following data fields:
- i. Cabinet ID, Status, Type, Date of Installation, Related TIP Project, Repair Dates, Latitude, Longitude
 - ii. Related Cable IDs
 - iii. Related device IDs internal to the cabinet

- iv. Related device ID's externally connected to the cabinet
- l. CV Technology Sites with the following data fields:
 - i. CV RSU ID, Status, Make, Model, Firmware Version, Date of Installation, Date of Repair, Latitude, Longitude
 - ii. CV Antenna ID, Status, Make, Model Firmware Version, Date of Installation, Date of Repair
 - iii. Related Switch ID
 - iv. Related Cabinet ID
 - v. Related Modem ID
- m. RWIS with the following data fields:
 - i. RWIS ID, Status, Make, Model, Date of Installation, Latitude, Longitude
 - ii. For up to 6 components:
 - 1. RWIS Component ID, Type, Status , Make, Model, Date of Installation, Date of Repair
 - iii. Related Switch ID
 - iv. Related Cabinet ID
 - v. Related Modem ID
- 6. ITS Asset Configuration: The Contractor shall perform the initial configuration of the IAMS by adding all existing and proposed devices within the design technical scope.
 - a. All devices included in the ITS maintenance scope of work shall be configured in the IAMS.
 - b. The Contractor shall propose fields to be populated based on their proposed maintenance plan.
- 7. ITS Asset Maintenance: The Contractor shall maintain and regularly update all data in the IAMS throughout the term of the maintenance contract.
 - a. IAMS status information will be used to evaluate the Contractor for performance criteria and therefore must be updated regularly.
 - b. The Contractor shall log the date and time of changes to the IAMS within the individual feature databases.
 - c. Contractor % availability performance metrics shall consider device availability in IAMS, the IWOMS, and the INMS.
- 8. Submittal Requirements: The Contractor shall propose an IAMS Plan for configuration and maintenance of the IAMS.

Work Order Management System

- 1. NCDOT will provide the Contractor access to a NCDOT-owned IWOMS

2. The Contractor must provide a backup dashboard for performance management and maintenance tracking outside of the IWOMS software. The use and management of this dashboard shall be defined in the Contractor's Performance Management Plan. See ITS Maintenance General Scope of Services.
3. General Description: The contractor shall configure, operate, and maintain an IWOMS. The IWOMS shall monitor and record all scheduled, requested, and performed maintenance services for this contract. The IWOMS has the following features, which will be configured and maintained by the Contractor for this project:
 - a. Receive both manual trouble tickets and electronically generated trouble tickets through integration with INMS. NCDOT staff, including STOC operators will have access to create trouble tickets.
 - b. Logging of all preventive, responsive, and emergency maintenance services with details of work performed and time and date logs.
 - c. If available, integration with IAMS for a database of all maintained ITS components and their current status. If integration is unavailable, the Contractor shall develop a plan for how data is manually managed and updated between the two systems.
 - d. Asset status tracking identical to IAMS
 - e. Designation of device asset type and criticality including either general, essential or vital criticality.
 - f. Provide detailed performance tracking in a dashboard that accurately evaluates the performance of the contractor in accordance with the performance metrics required in this contract for all maintenance activities.
 - g. Track all spare parts inventories for the maintenance contractor.
 - h. Log the date, time, cost, and technician of all asset replacements.
 - i. Track work order history and provide reporting on that data for the life of the system.
 - j. Track assets sent for repair.
4. PM IWOMS features:
 - a. Track and log all scheduled PM activities with date and time.
 - b. Log all inputs and modifications on a user basis.
 - c. Track the amount of time (in days) that has passed since the most recent PM on a device.
 - d. Multiple configurable alerts per device that enable Contractor and NCDOT staff to be notified if PM's have not been completed within certain timeframes.
5. The Contractor shall configure and maintain the following Responsive and Emergency Maintenance data features in IWOMS:
 - a. Track and log all responsive service calls with date and time.
 - b. The IWOMS may undergo development to receive service calls automatically through integration with the INMS. If this integration is unavailable at the time of the contract, the

- Contractor shall propose a manual plan for how to reconcile the logged date/time of a device going down in the INOMS with the IWOMS service call.
- c. Log the date and time when the Contractor technician initially responds to review a service call.
 - d. Log the date and time when a formal diagnosis has been made of the issue that caused the service call.
 - e. Document the details of the issue that caused the service call, the recommended repair proposed by the Contractor technician, and the cost of the repair recommended by the Contractor technician.
 - f. Log the date and time when device repair has been completed by the Contractor Technician.
 - g. Log the date and time when device repair has been validated by NCDOT.
 - h. Have multiple configurable alerts per device that enable Contractor and NCDOT staff to be notified as the RM changes status from response phase, diagnosis phase, and repair phase.
6. ITS Asset Configuration: The Contractor shall perform the initial configuration of data within the IWOMS by adding all existing and proposed devices as defined in the design technical scope.
- a. All assets included in the ITS maintenance scope of work shall be configured in the IWOMS.
 - b. The Contractor shall propose fields (in addition to the fields required in these specifications) to be populated based on their proposed maintenance plan.
7. ITS Asset Maintenance: The Contractor shall maintain and regularly update all data in the IWOMS throughout the term of the maintenance contract.
- a. IWOMS status information will be used to evaluate the Contractor for performance criteria and therefore must be updated regularly.
8. Submittal Requirements: The Contractor shall propose an IWOMS Plan for this project that meets the requirements of this section for configuration and maintenance of ITS assets.

INMS Requirements

1. NCDOT will provide the Contractor access to a NCDOT-owned INMS
2. General Description: The contractor shall configure, operate, and maintain the data within an INMS. The INMS has the following features, which will be configured and maintained by the Contractor for all assets within this project:
 - a. Logical mapping all ITS Assets with an IP address and all network links on a map interface.
 - b. Integrated with the IWOMS and the IAMS to provide integrated status data for each device to each system. The Contractor shall propose an alternate plan for updating the status data of each device between systems in the case that integration is unavailable.

- c. Real-time ping-sweeps of all devices throughout the network and display whether each device is up or down in real-time.
 - d. Multiple configurable alarms per device that enable Contractor and NCDOT staff to be notified whenever a device loses connectivity to the network. This alarm shall also be integrated or coordinated with the IWOMS such that the logged date and time of device downtime is logged in the IWOMS.
 - e. Provide SNMP tracking that shows the status of each communication port in the network.
 - f. Multiple configurable alarms per port that enable Contractor and NCDOT staff to be notified whenever a port status changes on the network. The alarms shall be configurable based on port status change, port status type, device type, port #, connected device type, and port type. This alarm shall also be integrated with the IWOMS such that the logged date and time of network downtime is logged in the IWOMS.
 - g. Track bandwidth utilization across all network links.
 - h. Have advanced alerting features that help reduce the flood of unnecessary network alerts based on configurable trigger conditions.
 - i. Performance analysis functionality where real-time metrics can be compared with historic metrics for performance evaluation.
3. General Requirements:
- a. The Contractor shall be provided remote access to the INMS by NCDOT through a secure portal.
 - b. The Contractor may request additional INMS features that enable efficient monitoring of the network for review by NCDOT. All requests are subject to NC DIT approval.
4. INMS Configuration: The Contractor shall perform the initial configuration of the INMS by adding all existing and proposed devices as defined in the design technical scope.
- a. All IP addressable devices included in the ITS maintenance scope of work shall be configured in the INMS.
 - b. All field switch ports (whether connected to a device or not) shall be configured in the INMS.
 - c. The Contractor may propose additional data fields and information to be populated in the INMS based on their proposed maintenance plan.
5. INMS Maintenance: The Contractor shall maintain and regularly update all data in the INMS throughout the term of the maintenance contract.
- a. The INMS shall log all changes to INMS configurations by users of the software.
6. Submittal Requirements: The Contractor shall propose an INMS Plan for configuration and maintenance of the INMS.

Compensation and Pay-For-Performance

1. The Contractor shall provide an O&M price proposal Appendix Part D – OMC: Price Proposal for O&M and Commercialization. The Contractor shall provide a daily nominal (i.e. year of

expenditure) O&M unit price for the period of construction that will apply throughout the construction period. O&M quantities during this timeframe have been developed based on NCDOT's best estimate of the Contractor's installation schedule to enable like for like comparisons among cost proposals. The installation schedule and quantities may change post award but the bid price per device type per year shall remain fixed until the first re-evaluation event, as described in "ITS Maintenance Services Re-Evaluation" further below.

2. The Contractor will enter the Pay-For-Performance ("PFP") period for ITS Maintenance for individual infrastructure components under the following conditions:
 - a. For existing ITS assets, the Contractor will enter the PFP period after completion of the first PM service for a particular asset.
 - b. For ITS assets being constructed by the Contractor, the Contractor will enter the PFP upon completion of system acceptance testing by NCDOT for a particular asset.
 - c. For ITS asset being constructed by others, the Contractor will enter the PFP upon completion of system acceptance testing by NCDOT for a particular asset plus a 30 day burn-in period.
3. Assets will be maintained at the fixed unit prices per asset class as provided by the Contractor's Pay-For-Performance Cost Sheet (Appendix Part D – OMC: Price Proposal for O&M and Commercialization).
4. NCDOT's goal is for each asset within the IAMS to be operating at or above the base availability defined in Tables 4-6 for the defined asset classes. To assist in achieving this goal, NCDOT shall assess performance incentives and disincentives according to the formulas described in this section.
5. Although NCDOT will continue to perform daily monitoring, the Contractor is required to:
 - a. Provide a Performance Management dashboard that displays % availability and repair time for each asset on a daily and monthly basis. The dashboard shall also provide cumulative reporting and data displays on a per asset type and per asset class basis on a daily and monthly trend basis.
 - b. Monitor the operation of each asset per this specification and per the Contractor's Performance Management Plan as reviewed and agreed upon by NCDOT. The Contractor shall verify and report the operational performance of each asset.
 - c. The Contractor shall generate monthly monitoring reports showing the daily percent availability of each asset. This reporting and asset monitoring will be the basis upon which incentives and disincentives will be determined under this contract – also known as Pay-For-Performance.

Preventive Maintenance

1. The Contractor shall perform PM as specified in Preventative Maintenance scope of work of this specification.
2. PM labor and material costs are incidental to the fixed unit daily prices per asset class provided in the Contractor's Pay-For-Performance Cost Sheet (Appendix Part D – OMC: Price Proposal for O&M and Commercialization).

3. Temporary traffic control costs for PM are incidental to the fixed unit daily prices per asset class provided in the Contractor’s Pay-For-Performance Cost Sheet (Appendix Part D – OMC: Price Proposal for O&M and Commercialization).
4. The Contractor shall manage any product warranties as part of PM on NCDOT’s behalf.
5. PM includes periodic replacement for electronic devices that have reached their maximum life span. The Contractor shall replace each asset listed in Table 1 below prior to the asset reaching its maximum life span. Devices not listed in Table 1 (such as DMS) do not require periodic replacement.

Table 1: Maximum Asset Life Cycle	
Asset	Maximum Life Span
Camera and Power over Ethernet Injectors	7 Years
UPS	7 Years
UPS Batteries	2 Years
Field Switches	7 Years
Connected Vehicle RSUs and Antennas	5 years

Responsive Maintenance

1. The Contractor shall perform RM as specified in Responsive Maintenance of this specification.
2. RM labor and material costs are incidental to the fixed unit daily prices per asset class provided in the Contractor’s Pay-For-Performance Cost Proposal Sheet (Appendix Part D – OMC: Price Proposal for O&M and Commercialization). RM labor and material costs for equipment repair are incidental for all equipment components included in the ITS Asset Maintenance General Scope Section.
3. Temporary traffic control costs for RM are incidental to the fixed unit daily prices per asset class provided in the Contractor’s Pay-For-Performance Cost Sheet (Appendix Part D – OMC: Price Proposal for O&M and Commercialization).
4. RM includes response to trouble tickets as discussed in Responsive Maintenance.
5. RM also includes full-device replacement labor and materials for some assets due to maintenance issues and lightening damage. Replacement of these assets are incidental to the fixed unit daily prices per asset class provided in the Contractor’s Pay-For-Performance Cost Sheet (Appendix Part D – OMC: Price Proposal for O&M and Commercialization). Asset replacements incidental to RM include:
 - a. Cameras, supporting power over Ethernet injectors, and related cabling and power sources.
 - b. UPS controllers, batteries, related cabling and power sources.
 - c. Cabinet filters, fans, HVAC systems, and related cabling and power sources.
 - d. Field switches, fiber optic transceiver modules and power sources
 - e. Connected vehicle roadside units, antennas, related cabling and power sources
 - f. Fiber distribution units
 - g. Fiber optic splice closures and fiber optic splices

- h. Conduit and cable infrastructure repairs including junction boxes, risers, all conduit, all fiber optic cabling, all Ethernet cabling and fiber distribution panels.

Emergency Maintenance

1. The Contractor shall perform emergency maintenance as specified in Emergency Maintenance scope of work of this specification.
2. Emergency maintenance is not included as part of the Pay-For-Performance portion of this contract. The Contractor shall propose unit prices for potential task orders for ITS emergency maintenance in Table 2.
3. Traffic control for emergency maintenance is incidental to each unit item cost provided in Table 2.

Table 2: Emergency Maintenance Line Item Costs		
Emergency Maintenance Task	Unit	Cost
Camera/DMS tree trimming	Per Asset	
Camera/DMS tree removal	Per Asset	
DMS Replacement	1 DMS including structure	
Cabinet Replacement due to Collision	1 Cabinet including necessary fiber repairs or replacement	
Deployment of Emergency Generators	Per Asset	
CMS Troubleshooting and Repair	Per Instance	

NC 811 Locate Services

1. The Contractor shall perform NC 811 Locate services as specified in NC811 Underground Location Services. NC 811 Locate labor and material costs are incidental to the fixed unit daily prices per asset class provided in Appendix Part D – OMC: Price Proposal for O&M and Commercialization.

Formulas for Performance Payments

1. The following asset statuses are used to calculate performance payments and non-performance deductions:
 - a. Operational (O): Operational assets must meet the operation criteria listed in Definition of Operational and Demarcation Points of Assets below. Operational status positively impacts the % availability for each asset in computation for pay-for-performance measures.
 - b. Down (D): Down status is used to classify assets that are not fully functional according to Definition of Operational and Demarcation Points of Assets below and are the responsibility of the Contractor to repair or replace. If an asset is marked as Down, there must be a work order in the IWOMS detailing the problem. Down status negatively impacts the % availability for each asset in computation for pay-for-performance measures.

- c. Transition (T): Transition status indicates an asset that is in the process of being turned over to the Contractor but has not yet been officially handed over. This includes assets in a 30-day burn period. Maintenance responsibility for these devices are outside the scope of the Contractor. Assets will be changed from transition to “operational” when the Contractor assumes maintenance responsibility. Transition status has no impact on the % availability for each asset in computation for pay-for-performance measures.
 - d. Decommissioned (DC): Decommissioned status identifies assets that are no longer included within the scope of this ITS Maintenance contract. These assets may have been removed during a construction project, the Asset ID may have been changed, or the asset may have been removed due to an accident. Decommissioned status has no impact on the % availability for each asset in computation for pay-for-performance measures.
 - e. Waiting (W): Waiting status applies to assets that have failures beyond the demarcation point, such as a hub switch failure. Waiting assets are paid. If the asset was in a Down status prior to one of the conditions stated it should be moved to a Waiting status. The LD clock will be suspended upon the change of status to Waiting. Work will be performed by the Offeror to make the asset operational to the extent possible. This work may be inspected in the field by Department personnel to verify. Waiting status has no impact on the % availability for each asset in computation for pay-for-performance measures.
2. The following equations are used to calculate the percent availability of the assets:
- a. Total Assets = O + D + T + W
 - b. Total Maintained Assets = O + D + W
 - c. Total Operational Assets = O + W
 - d. % Availability = Total Operational Assets / Total Maintained Assets
3. The Contractor shall calculate the monthly ITS Maintenance Pay-for-Performance cost based on accumulative daily asset performance. The costs shall be substantiated and approved by NCDOT’s PM each month. The actual daily base price per asset class will be calculated by multiplying the daily base price for an individual asset class by the performance payment percentage based on percent availability and asset classification as detailed in Tables 4-6 below. Percent availability accuracy shall be measured by rounding to the nearest hour of downtime at a minimum although greater accuracy is acceptable to NCDOT.

Asset Type	≤ 80%	≤ 85%	< 93%	≥ 93%	≥ 95%	≥ 97%
Cameras	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
DMS	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Hubs	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid

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CV	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
RWIS	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Signal Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Rest Area Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Traffic Count Station Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Weigh Station Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid

Table 5: Essential Asset Class Performance Payment based on % Availability						
Asset Type	≤ 85%	≤ 90%	< 95%	≥ 95%	≥ 97%	≥ 98%
Cameras	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
DMS	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Hubs	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
CV	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
RWIS	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Signal Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Rest Area Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid

Traffic Count Station Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Weigh Station Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid

Table 6: Vital Asset Class Performance Payment based on % Availability						
Asset Type	≤ 90%	≤ 93%	< 97%	≥ 97%	≥ 98%	≥ 99%
Cameras	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
DMS	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Hubs	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
CV	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
RWIS	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Signal Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Rest Area Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Traffic Count Station Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Weigh Station Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid

Non-Performance Disincentives

1. NCDOT shall enforce non-performance disincentives for each asset type and class each day the Contractor fails to repair an asset according to the allowable repair times per asset class and asset classification. If Contractor exceeds the allowable repair time, the following equation is used to calculate the non-performance disincentive per asset classification for each day the asset is down after the allowable repair time:

- a. Non-Performance Disincentive = (Bid * T * M) + P, where:
 - i. T = Allowable repair time for asset class and classification in 24-hour calendar days
 - ii. M = Multiplier per asset class per asset classification
 - iii. P = Non-performance disincentive for the previous calendar day.
- b. The requirements for the non-performance disincentives are detailed in Table 7 below:

Table 7: Non-Performance Disincentives						
Asset Class	General		Essential		Vital	
Asset Type	Allowable Repair Time (T)	Multiplier (M)	Allowable Repair Time (T)	Multiplier (M)	Allowable Repair Time (T)	Multiplier (M)
Hubs	2	2	1	4	0.5	28
All Others	14	1	7	2	2	7

- c. Contractor bids per asset type and asset class must be reasonable to ensure contract disincentives are effective. If the contractor’s combined overall bid price is less than 20% of the engineer’s estimate, then the engineer’s estimate (reduced by 20%) for each asset type and asset class will be used to enforce non-performance disincentives.
- d. Non-performance disincentive example A:
 - i. A DMS with an asset class of essential is down for 17 days and the daily bid amount for an essential DMS was \$1.00.
 - 1. T = 7 days (according to Table 7 for essential asset class)
 - 2. M = 2 (according to Table 7 for essential asset class)
 - 3. Disincentive per day over T days = \$1.00 x 7 x 2 = \$14.00
 - 4. Days over T = 17-7 = 10
 - 5. Total Disincentive = 10 x \$14.00 = \$140.00
- e. Non-performance disincentive example B:
 - i. A Hub with an asset class of vital is down for 2.5 days and the daily bid amount for a vital hub was \$100.00.
 - ii. T = 0.5 days (Table 7)
 - iii. M = 28 (Table 7)

- iv. Disincentive per day after 0.5 days = $\$100.00 \times 0.5 \times 28 = \$1,400$
- v. Days over T = $2.5 - 0.5 = 2$
- vi. Total Disincentive = $\$1,400 \times 2 = \$2,800$

2. In addition to asset-based non-performance disincentives for each asset type and asset class, NCDOT shall enforce non-performance disincentives for each day the Contractor fails to repair fiber infrastructure according to the allowable repair times set forth below:

- a. Trunk Line Fiber Damage: Trunk line fiber damage shall be repaired within 48 hours. For each day thereafter, the contractor shall be charged \$1000 per day.
- b. Device Line Fiber Damage: Device line fiber damage shall be repaired within 96 hours. For each day thereafter, the contractor shall be charged \$500 per day.
- c. Preventive Maintenance Fiber Repair: The Contractor shall consistently perform OTDR tests on dark fiber within both the Trunk Line and Device Line fiber cables. When the OTDR tests show fiber losses have increased by 10 dbm (from initial construction testing) along any stretch of fiber from point to point, the contractor shall schedule repair of the fiber cable or termination point within 30 days. For each day thereafter, the contractor shall be charged \$250 per day.

Performance-Based Non-Compliance and Termination

- 1. The Department at their sole discretion, may require a “Noncompliance Remedial Plan” when O&M performance is non-compliant as triggered by the non-compliance point system described below.
 - a. Non-Compliant Performance:
 - i. The Department will use a points system to define non-compliant performance on the part of the contractor. If the contractor exceeds 9 points at any time during the contracted period, the Department may trigger a Noncompliance Remedial Plan”.
 - ii. Noncompliance performance point accrual: The Department will use Table 8 to determine when and how many points the Contractor accrues for non-compliant performance:

Table 8: Noncompliance Performance Points	
Unsatisfactory Performance Description	Points
Monthly % availability for ANY general asset type remains below 85% for two months in a row	2
Monthly % availability for ANY essential asset type remains below 90% for two months in a row	2
Monthly % availability for ANY vital asset type remains below 93% for two months in a row	2
Monthly % availability for ANY general asset type remains below 85% for three months in a row	3

Monthly % availability for ANY essential asset type remains below 90% for three months in a row	3
Monthly % availability for ANY vital asset type remains below 93% for three months in a row	3
Monthly % availability for ANY general asset type remains below 85% for four months in a row	3
Monthly % availability for ANY essential asset type remains below 90% for four months in a row	3
Monthly % availability for ANY vital asset type remains below 93% for four months in a row	3
More than 25% of assets in any asset class exceed allowable repair time in 1 year.	3
More than 50% of assets in any asset class exceed allowable repair time in 1 year.	5
More than 75% of assets in any asset class exceed allowable repair time in 1 year.	8
Two PM cycles are not provided for 100% of devices within 1 year	2
PM Quality Reviews Score an Average of 8 or less within 1 year	2

- iii. Satisfactory performance points: The Department will use Table 9 to determine when and how many points the Contractor may remove from their tally of noncompliance performance points during times of satisfactory performance:

Table 9: Satisfactory Performance Points	
Scenario for Reduction of Performance Points	Points
Contractor does not accrue unsatisfactory performance points for 1 year	2
Contractor does not accrue unsatisfactory performance points for 2 years	4
Contractor does not accrue unsatisfactory performance points for 3 years	8
Monthly % availability for all general assets are above 95% for 2 months and Monthly % availability for all essential assets are above 97% for two months and Monthly % availability for all vital assets are above 98% for three months in a row.	1

Monthly % availability for all general assets are above 95% for 2 months and Monthly % availability for all essential assets are above 97% for two months and Monthly % availability for all vital assets are above 98% for four months in a row.	1
Monthly % availability for all general assets are above 95% for 2 months and Monthly % availability for all essential assets are above 97% for two months and Monthly % availability for all vital assets are above 98% for five months in a row.	2
Monthly % availability for all general assets are above 95% for 2 months and Monthly % availability for all essential assets are above 97% for two months and Monthly % availability for all vital assets are above 98% for six months in a row.	2

2. Without prejudice to any other rights the Department may have under this Agreement, if a Noncompliance Remedial Plan Trigger occurs, the Contractor shall within fourteen (14) days of such occurrence submit to the Department a remedial plan (“Noncompliance Remedial Plan”) for the Department’s approval.
3. A Noncompliance Remedial Plan must set out specific actions and an associated schedule to be followed by the Contractor to improve its performance and reduce the number and frequency of Noncompliance Events occurring in the future. Such actions may include, without limitation:
 - a. changes in organizational and management structure;
 - b. revising and restating management plans and procedures;
 - c. improvements to quality control practices;
 - d. increased monitoring and inspections;
 - e. changes in Key Personnel and other important personnel;
 - f. replacement of Contractors; and
 - g. other reasonable measures.
4. The Contractor shall implement any approved Noncompliance Remedial Plan in accordance with its terms.
5. After being placed on a Noncompliance Remedial Plan, if the contractor is unable to improve performance in accordance with department expectations by reducing the non-performance points below 10 points within 6 months and below 5 points over 2 years, the Department may terminate the contract at their sole discretion. For the avoidance of doubt, contract termination means termination of the Operations, Maintenance and Commercialization Agreement (in the event that Track 1 is the Preferred Procurement Track) or termination of the Comprehensive Agreement (in the event that Track 2 is the Preferred Procurement Track).

Definition of Operational and Demarcation Points of Assets

1. The operational definitions and demarcation points defined in this section apply to NCDOT's assets as they relate to Pay-for-Performance.
2. Cameras:
 - a. A Camera is considered "Operational" for daily status purposes when:
 - i. The camera is communicating with the backbone network;
 - ii. Usable video is present at the demarcation point; and
 - iii. Pan/tilt/zoom (PTZ) control is functional from the demarcation point.
 - b. Demarcation:
 - i. For fiber-connected assets, the demarcation point is at the field-side port of the NC DIT managed hub switch.
 - ii. For cellular modem connected assets, the demarcation point is at the field-side connection to the cellular modem, but the contractor must ensure the cellular modem must have an active connection to the service provider.
3. DMS:
 - a. A DMS is considered "Operational" for daily status purposes when:
 - i. The sign is communicating with the backbone network;
 - ii. The sign responds to commands from the demarcation point;
 - iii. 95% or more of sign display pixels are operating properly, and the acceptable level of failed pixels do not render the display message illegible; and
 - iv. The brightness of the sign is correct for the ambient light present, based on readings of the photocell system.
 - b. Demarcation:
 - i. For fiber-connected assets, the demarcation point is at the field-side port of the NC DIT managed hub switch.
 - ii. For cellular modem connected assets, the demarcation point is at the field-side connection to the cellular modem, but the contractor must ensure the cellular modem must have an active connection to the service provider.
4. Hubs
 - a. A Hub is considered "Operational" for daily status purposes when:
 - i. UPS is providing conditioned power to the hub switch;
 - ii. HVAC is operating within environmental monitoring limits;
 - iii. Doors, roof, and walls are free of damage and graffiti;
 - iv. Grounds are kept free of tall grass, limbs, and debris
5. CV

- a. A Connected Vehicle System is considered “Operational” for daily status purposes when:
 - i. The RSU is communicating with the backbone network;
 - ii. The RSU has full capabilities and responds to commands from the demarcation point;
- b. Demarcation:
 - i. For fiber-connected assets, the demarcation point is at the field-side port of the NC DIT managed hub switch.
 - ii. For cellular modem connected assets, the demarcation point is at the field-side connection to the cellular modem, but the contractor must ensure the cellular modem must have an active connection to the service provider.

6. RWIS

- a. A RWIS is considered “Operational” for daily status purposes when:
 - i. The RWIS has connectivity to the cloud-based software application and full operational capabilities
- b. Demarcation:
 - i. Since the RWIS software is cloud-based, there is no demarcation for ITS Maintenance Services.

7. Signals, Weigh Stations, Rest Areas, and Traffic Count Stations

- a. A signal, weigh station, or rest area, or traffic count station is considered “Operational” for daily status purposes when:
 - i. The field switch in the signal cabinet, weigh station building, or rest area is communicating with the backbone network.
- b. Demarcation:
 - i. The upstream demarcation point is at the field-side port of the NC DIT managed hub switch.
 - ii. The downstream demarcation point is anything connected to the field switch downlink ports in the first cabinet of the closed loop signal system or traffic count station. The downstream demarcation point is anything connected to the field switch downlink ports a rest area or weigh station building.

ITS Maintenance Services Re-Evaluation

As a result of aligning a long-term O&M services (i.e. ITS Maintenance Services) and commercialization contract, there is a need to enable flexibility for the OMC Contractor and the NCDOT with respect to the scope and price of O&M services throughout the contract term. This need is based on several elements:

- ITS elements may become technologically obsolete over the contract term. New technology may become available and may require O&M services. Re-evaluation of O&M services in 5-year increments will enable NCDOT to remove O&M services for obsolete technology while adding O&M for new technology. For example: Dynamic

Message Signs may become obsolete as automated and connected vehicle technology is further adopted.

- NCDOT is unable to predict the changes in device quantities over the entire contract term. With increases in quantities, both the OMC Contractor and NCDOT may be subject to changes in cost. For example, if over a 10 year period, NCDOT determines that implementation of cameras every half-mile along each of the corridors is appropriate, this would drastically increase the amount of field staff, camera PMs, camera RMs, fiber optic network maintenance, and general maintenance management through the IAMS, IWOMS, and INMS.

In order to achieve this flexibility, as part of the O&M contract mechanism, the Department has provided for a “re-evaluation” that will be conducted every 5 years. There are three components to the ITS Maintenance Services re-evaluation:

- ITS Maintenance Services price re-evaluation
- ITS Maintenance Services re-procurement
- ITS Maintenance Services scope re-evaluation

The descriptions of each of the above terms are provided below.

ITS Maintenance Services Price Re-Evaluation and Re-Procurement

At each ITS Maintenance price re-evaluation event, price re-evaluation is completed first, and if the Department and the OMC Contractor cannot agree on the outcome, re-procurement is conducted.

Re-procurement will not entail re-procuring the OMC Contractor, but rather re-procuring the ITS Maintenance sub-contractor (sub-contracted to the OMC Contractor to perform the ITS Maintenance Services). If the ITS Maintenance sub-contractor is the same entity as the OMC Contractor, then re-procurement means that the OMC Contractor will be instructed to employ a new ITS Maintenance sub-contractor that is competitively procured.

The price re-evaluation procedure, conducted every 5 years, is as follows:

- The OMC Contractor proposes a cost to NCDOT for ITS Maintenance Services for 5 years.
- The OMC Contractor then compares its cost proposal to prevailing market costs. NCDOT anticipates that the most effective method of cost comparison will be achieved through a competitive bid by the OMC Contractor such that at least 3 bids are received.
- The Department and the OMC Contractor will begin planning 6 months ahead of the price re-evaluation date in order to allow sufficient time to complete the price re-evaluation procedure.
- If the mean market cost is less than 95% of the OMC Contractor’s proposed costs, there will be an adjustment to the ITS Maintenance Services price, to the mean market cost. Outlier bids that are within +/- 20% of the mean market cost will not be factored into the mean market cost calculation. This change in price will be reflected in the ITS Maintenance compensation and pay-for-performance regime and will include a formulaic adjustment to incentivize the OMC Contractor to control its costs and manage its performance.

- If the mean market cost is between 95%-100% of the OMC Contractor's proposed price, the proposed price for O&M services may remain as-proposed.
- If the mean market cost is greater than the OMC Contractor's proposed price, the proposed price for O&M services will remain as-proposed. This means that the OMC Contractor is the most efficient provider in the market.
- The Department has the right to inspect the OMC Contractor's and ITS Maintenance sub-contractor's cost information to confirm cost details. Full transparency of cost information is needed for price re-evaluation to function effectively.
- If the Department and the OMC Contractor cannot agree on the price adjustment or if the Department is not satisfied that there has been a robust price re-evaluation procedure, then re-procurement will be initiated.

ITS Maintenance Services Scope Re-Evaluation

Over the contract term, the scope of ITS Maintenance Services will also be re-evaluated every 5 years. The ITS Maintenance Services scope re-evaluation will include⁷ the addition and/or removal of components of scope of services.

In the event of the Department's decision to remove components of the ITS Maintenance scope of services, the OMC Contractor will be notified 12 months before a scheduled ITS Maintenance re-evaluation in order to allow sufficient time for the OMC Contractor to implement the change appropriately. This change in scope will be reflected in the ITS Maintenance compensation and pay-for-performance regime and will include a formulaic adjustment to incentivize the OMC Contractor to control its costs and manage its performance.

In the event of the Department's decision to add⁸ components of the ITS Maintenance scope of services, the OMC Contractor will be notified 6 months before a scheduled ITS Maintenance re-evaluation in order to allow sufficient time for the OMC Contractor to implement the change appropriately. This change in scope will be reflected in the ITS Maintenance compensation and pay-for-performance regime and will include a formulaic adjustment to incentivize the OMC Contractor to control its costs and manage its performance.

The price contractualized for the addition of components to the ITS Maintenance scope of services will be subject to the ITS Maintenance Services price re-evaluation procedure, conducted when new scope elements are added. If the Department and the OMC Contractor cannot agree on the price or if the Department is not satisfied that there has been a robust price re-evaluation procedure, then re-procurement will be initiated.

⁷ It is anticipated that the addition and/or removal of up to 25% of a quantity of an asset class (e.g. DMS) will not trigger a scope re-evaluation.

⁸ With respect to the addition of components of scope of services only, at any point over the contract term, the Department may add components of scope of services subject to a 6 month notice period, and subject to the ITS Maintenance Services price re-evaluation procedure.

E-1.2. Commercialization Scope of Work

The Proposer will have the right to install, operate, and maintain additional conduit(s), fiber strands, and related communications infrastructure and components for commercial uses for the length of the contract term.

The Proposer will be responsible for all activities associated with commercialization (i.e. NCDOT is not responsible for any contractual administration with respect to third-party commercial entities).

Assets Installed in the DB Scope of Work for Commercialization

As part of the DB Scope of Work, the Department will be installing three conduits with two conduits housing fiber-optic cables for NCDOT's use. The third conduit, without fiber-optic cable, may be used for commercialization. Additional conduit and fiber-optic cables may be installed by the OMC Entity for commercialization. All additional commercialization conduits and fiber-optic cables installed in excess of the requirements stated in the DB Scope of Work are subject to the Location and Ownership of Commercialization of Assets provisions in the Operations, Maintenance and Commercialization Agreement Terms (Appendix Part B – OMC: Operations, Maintenance and Commercialization Agreement Terms).

E-1.3. OMC Contractor Coordination with DB Contractor

Should the Department decide to progress with Procurement Track 1a and 1b, the following will apply:

- The OMC Contractor will be required to work collaboratively with the DB Contractor.
- The Department will enter into separate contracts with the DB and OMC Contractors, respectively
- It is anticipated that the OMC and the DB Contractors will have a view on a preferred phasing approach, respectively
- As a result, the OMC and DB Contractors will be required to negotiate, in good faith, a mutually agreed phasing approach

NCDOT will approve the phasing approach prior to the execution of the OMC and DB Contracts.

E-1.4. OMC Information Submittal

E-1.4a. Acknowledgement of the Operations, Maintenance and Commercialization Agreement Terms Review (See Appendix Part C – OMC: Acknowledgement of Operations, Maintenance and Commercialization Agreement Terms Review)

Proposers must acknowledge that they have reviewed the Operations, Maintenance and Commercialization Agreement Terms for the Project and identify any changes or specific modifications in writing that the Proposer considers essential for entering into a Contract Agreement with the Department for this Project. The Department reserves the right to consider and accept, in its sole and absolute discretion, any requested changes to the Operations, Maintenance and Commercialization Agreement Terms.

E-1.4b. Transmittal Letter (limit 10 pages).

A duly authorized official of the Proposer must execute and submit a Transmittal Letter. The Transmittal Letter must include, but is not limited to, the following:

1. Proposer's Procurement Track
2. Proposer's understanding of the Department's OMC requirements
3. Proposer's plan to maximize value for the Department
4. Proposer's proposed upfront payment to the Department at the contract execution date and proposed annual revenue share over the life of the contract
5. Proposer's preferred approach to phasing the OMC scope of work
6. Proposer's approach to working collaboratively with the DB contractor and managing interfacing with other highway construction contracts

E-1.4c. Table of Contents

Include a clear identification of the material by section and by page number.

E-1.4d. Executive Summary

Proposer must summarize its understanding of the work to be performed and make a commitment to perform the work necessary. This section should summarize the key points of the Submittal. The Executive Summary shall be written in a non-technical style and shall contain sufficient information for the Technical Review Committee ("TRC") members to become familiar with the Proposer's ability to satisfy the requirements of the RFP.

E-1.4e. Prime and Subcontractor Overviews

Proposer must provide a brief history and description of its business organization and its expertise in providing OMC Services and experience. The description must include the location of offices and the number and types of executive and professional personnel, engineers, technicians, specialists, consultants or other relevant professional staff in each office, consultants or other relevant professional staff in each office. Proposer must also discuss its firm's presence in and commitment to the State of North Carolina and include a discussion of the specific expertise and services that distinguish its firm.

If one proposes to subcontract any portion of the work described in its response, the subcontracted firm or firms must be identified in this section. The role of the firm or firms should be explained along with a description of the specific expertise and services that the firm or firms contribute to the overall value of the proposal. Furthermore, the Proposer should provide an organizational chart which sets forth the Proposer's structure, teaming arrangements and reporting requirements.

E-1.4f. Key OMC Personnel

With respect to the O&M Scope of Work (Part E-1.1), Proposer shall provide:

- The names, proposed roles, background and experience, current professional licenses and certifications, office location and availability of the personnel that would perform the scope of work.

- Identify the primary person(s) who will be responsible for managing the relationship with the Department throughout the contract term.
- Detailed resumes (indicating overall experience, professional registrations, and any specific experience relevant to the nature and scope of the Project) for each of the key O&M personnel of the proposed team (limit each resume to two (2) pages).
- A minimum of two (2) references each for the key O&M personnel. The references, in each case, must be from projects on which the key O&M personnel was involved during the past five years. References shall be provided by previous clients with whom the key OMC personnel have worked, and shall include the reference's name, position, company or agency, and current contact details (including current address, e-mail address, and telephone number). Proposers are requested to verify the accuracy of the reference's contact details, and are advised that if the contact details are not correct, the Department may elect to exclude the experience represented by such reference in determining the key OMC personnel's qualifications and experience.
- An organizational chart of the key O&M personnel, the relationship between their respective roles, and their previous experience (if any) of working together in such roles. Briefly describe the relevance of each key O&M personnel's experience to this Project and why such experience will provide value to the Department. The organizational chart shall indicate the primary point(s) of contact who will work closely with the Department.
- A description of the Proposer's approach to ensuring that required qualified resources are available to perform the scope of work throughout the contract term. A table/chart indicating estimated availability of designated key O&M personnel and other resources to work on this Project shall be included. While the Department recognizes the impact of personnel availability and scheduling conflicts upon Proposers, Proposers are urged to designate and submit only those individuals they reasonably believe will be available for, and intend to assign to work in, the key O&M personnel role(s).

With respect to the Commercialization Scope of Work (Part E-1.2), Proposer shall provide:

- The names, proposed role(s), background and experience, and availability of the personnel that would perform the scope of work.
- Detailed resumes (indicating overall experience, professional registrations, and any specific experience relevant to the nature and scope of the Project) for each of the key Commercialization personnel of the proposed team (limit each resume to two (2) pages).
- Identify the primary person(s) who will be responsible for managing the relationship with the Department throughout the contract term.
- A minimum of two (2) references each for the other key Commercialization personnel. The references, in each case, must be from projects on which the key Commercialization personnel was involved during the past five years. References shall be provided by previous clients with whom the key Commercialization personnel have worked, and shall include the reference's name, position, company or agency, and current contact details (including current address, e-mail address, and telephone number). Proposers are requested to verify the accuracy of the reference's contact details, and are advised that if the contact details are not correct, the Department may elect to exclude the experience represented by

such reference in determining the key Commercialization personnel’s qualifications and experience.

- An organizational chart of the key Commercialization personnel, including the relationship between their respective roles, and their previous experience (if any) of working together in such roles. Proposer should briefly describe the relevance of each key Commercialization personnel’s experience to this Project and why such experience will provide value to the Department. The organization chart shall indicate the primary point(s) of contact who will work closely with the Department.

E-1.5. O&M Services Submittal

E-1.5a. Approach to Services

Proposers must describe in detail the approach for O&M Services to be performed as defined in the O&M Scope of Work (Part E-1.1). The approach section shall present the methodology that the Proposer is planning to follow for each O&M service, provide a description of all required service deliverables/outputs. The Proposer shall provide process flow charts showing how interactions and work coordination with the Department shall take place. The Department encourages innovation in service delivery if substantiated and proven to be effective. Any such innovation shall be highlighted by the Proposer in their approach to O&M Services.

E-1.5b. Relevant Experience

Proposers shall provide a narrative statement regarding O&M Services experience and expertise as it relates to O&M Scope of Work (Part E-1.1). Additionally, the Proposer shall include a statement regarding your understanding of the O&M Services as outlined in the O&M Scope of Work (Part E-1.1) and your ability to provide O&M Services in accordance with the same.

Proposer shall describe the Proposer’s experience in the following areas:

1. Experience in providing O&M Services that are comparable to services sought by the Department to other clients, especially other governmental entities and / or similar public/private sector transportation organizations and/or private sector telecommunication firms;
2. Business practices that enable the Proposer to perform the required O&M Services and related tasks in an efficient, timely and expeditious manner; and
3. Any other specialized or innovative O&M Services the Proposer may offer to the Department.

Proposer shall describe at least three (3) and no more than five (5) relevant reference projects performed within the past ten (10) years that are similar in size, complexity, and services sought by the Department for this Project. The reference projects should demonstrate the firm’s experience repairing and providing corrective maintenance for fiber optic cable and related infrastructure.

For the purpose of this RFP, any experience listed as a relevant qualification shall be those in which the Proposer directly participated in the O&M Services – for required information, refer to table below.

Reference Project # 1: Project Name	
Client / Entity Name	
Period of Services Provided	
O&M Services Provided	Describe services provided, including repairing and corrective maintenance for fiber optic cable and related infrastructure; and experience in operating and maintaining a Fiber Management System
Project's Performance to date	Key performance measures
Project Reference	Provide the name of the client entity, including the name, address, and telephone number of the responsible official of the client, company, or agency who may be contacted.

Proposer shall provide a list of three (3) clients for which its firm has performed similar work, as described in this RFP, within the past five (5) years. Projects referred to should be identified and the name of the client entity shown, including the name, address, and telephone number of the responsible official of the client, company, or agency who may be contacted.

E-1.6. Commercialization Services Submittal

E-1.6a. Approach to Services

Proposer must describe its approach to providing Commercialization Services as described in Commercialization Scope of Work (Part E 1.2) of the RFP, for the Commercialization Assets.

The Commercialization Services approach should demonstrate not only the Proposer's understanding of commercialization, but also key considerations customized to North Carolina's geographic region and the market space in which the network will operate. The narrative shall clearly outline the following component factors in the Proposer's approach, separately for each of the Commercialization Services. For each Commercialization Services, the Proposer shall outline the following:

E-1.6b. Commercialization Market Size

Proposer's view on the network's addressable market with specific references to customer types, customer counts, locations of potential customers, potential commercial contract types and length, pricing, demand drivers, end customer use cases, and competition.

E-1.6c. Proposer's Action Plan

Proposer should describe the plans to market to and acquire customers in each identified commercialization activity utilizing the Commercialization Assets covering the entire network

throughout the Contract Term. At a minimum, the action plan should address the following sub-factors:

- a. Proposer’s marketing action plan during the DB phase (i.e. “Pre-Market Commercialization”), ramp-up phase, and once the network reaches commercial maturity.
- b. Proposer’s specific plans for addressing various customer segments, including how it would address market entry barriers and existing competition (if Proposer is a newer entrant to the market space within which the network will operate), or how it would leverage its existing customer bases and/or assets to generate commercial utilization for the network.
- c. To the extent possible, Proposer should provide a resource-based narrative around how components of its commercialization plan shall leverage the Fiber Infrastructure provided for the Project, in terms of lengths (fiber-miles), geographical sections needed, and strand count for each Commercialization Services intended to be included in the Proposer’s action plan.

E-1.6d. Commercialization Services O&M Plan

Proposer shall provide a high-level view on any additional incremental operating or maintenance costs or investments that it expects to incur in servicing its commercial customers, which may include the hiring of employees, the development of new assets, or any other ongoing costs as it relates to setting up profitable Commercialization Services throughout the length the Contract.

E-1.6e. Commercialization Expansion Plans

Proposer should describe any views it may have on potential network expansion or lateral investment opportunities that the Proposer may view as commercially and financially viable, including key metrics around any additional Right of Way (“R/W”) needed, potential resources required from the Department (if any), and potential impacts on the Department;

Proposer should provide any available verifiable evidence to substantiate its views as outlined in the approach to commercialization narrative, including any secured customer contracts, letter of interest from potential customers, any demonstrable customer demand for the network from the Proposer’s existing customer base, or any other quantifiable evidence. Customer contracts and other forms of tangible evidence, such as letters of interest, shall be provided as attachments to OMC Information Submittal Requirements (Part E-1.4) and can be marked as confidential information if need be. The reasonability of the commercialization approach will be determined based on the Department’s sole discretion, considering market precedents, existing market conditions, the Department’s estimates, tangible evidence supporting the Proposer’s approach, and the level of the Proposer’s due diligence conducted to date.

E-1.6f. Coordination with the Department

Proposer shall describe its proposed approach for coordination, tracking and sharing of information such as, on-going asset performance metrics, Commercialization Services contracts and revenues, and plans for developing new Commercial Assets (i.e. laterals, towers, etc.) with the Department on a regular interval. Proposer shall also outline what information and coordination it will require from the Department.

E-1.6g. Relevant Experience

Proposer shall provide a narrative statement regarding the Proposer’s commercialization experience and expertise as it relates to Base Case Financial Model (Part E-1.8) of this RFP.

Proposer should describe at least two (2) and no more than five (5) relevant reference projects performed by the Proposer’s team within the past ten years that are similar in size, complexity, and services sought by the Department for this Project. The reference projects should demonstrate the firm’s direct experience with providing broadband commercialization services for revenue generation as required in the RFP. Only information provided within this Submittal will be evaluated against criteria set out in of the RFP.

In addition to the narrative, with respect to each relevant project or experience included in the Proposal, the Proposer shall include relevant information about projects/entities for which the services were provided – for required information, refer to table below.

Reference Project # 1: Project Name	
Client / Entity Name	
Period of Services Provided	
Categories of Services Provided	Include all services that apply: <ul style="list-style-type: none"> • Dark Fiber Services • Lit Services • Cellular Connected Vehicle Sites Wireless Services • Other _____
Summary of Services Provided	Descriptions of the Commercialization Services provided and the role of the Proposer. If O&M Services were provided along with Commercialization Services, please describe here.
Project’s Performance to date	Key performance measures, including revenue sources and total amount of revenues generated / under contract
Revenue Sharing	Description of revenues shared with project sponsor (e.g. upfront, revenue share over time, committed revenue over time, etc.) and amounts
Project Reference	Provide the name of the client entity, including the name, address, and telephone number of the responsible official of the client, company, or agency who may be contacted.

E-1.7. OMC Price Proposal Submittal

Proposers shall submit using a template provided as part of Appendix Part D – OMC: Price Proposal for O&M and Commercialization of this RFP. Proposers shall pay special attention to additional instructions provided in the Price Proposal and ensure that no changes to the format/template are made to the Price Proposal without express written approval by the

Department. Any error(s) / omission(s) in the Price Proposal shall be brought to the Department's attention in a timely manner so that the Department can provide guidance to the Proposers.

Proposer must complete all applicable tabs/sheets in Appendix Part D – OMC: Price Proposal for O&M and Commercialization per the directions provided. Any costs not provided in the Price Proposal will be assumed as no charge to the Department.

The Department will reimburse the selected Proposer for work satisfactorily performed after execution of a written Contract and the start of the Contract Term, in accordance with Contract requirements, and only after the Department has issued a notice to proceed.

E-1.8. Base Case Financial Model Submittal

Proposers shall furnish the Base Case Financial Model to provide supporting assumptions to its projections provided in the Price Proposal in response OMC Price Proposal Submittal (Part E-1.7). While the model mechanics will be at the Proposer's discretion, it should clearly outline the Proposer's calculations used to build out the Price Proposal. The Base Case Financial Model shall be provided as a dynamic Microsoft Excel file, with clearly marked inputs and outputs.

The Base Case Financial Model must provide in-depth supporting calculations for the following inputs in the Price Proposal:

- Revenues from Commercial Activities
- O&M Costs for Commercial Activities
- Net Commercialization Cash Flows

The Base Case Financial Model must include the projected capital expenditures needed for the generation of Revenues from Commercial Activities. The Department reserves the sole discretion to assess the reasonability of the Proposer's due diligence conducted and observable evidence for the purpose of evaluating the Proposal.

E-1.9. OMC Evaluation Criteria

E-1.9a. OMC Proposal Evaluation

Qualified OMC Proposals will be evaluated according to the Proposer's OMC Technical Proposal and OMC Price Proposal and assigned a score out of 100 points. The highest score will determine the Best OMC Proposal.

The Proposer's OMC Technical Proposal will be evaluated out of 10 points according to the Technical Evaluation criteria in Part E-1.9b, in order to derive the Proposer's OMC Technical Proposal Score.

The Proposer's OMC Price Proposal will be evaluated out of 90 points relative to other qualified OMC Price Proposals, according to the formula below, in order to derive the Proposer's OMC Price Proposal Score:

- If the OMC Price Proposal is the lowest price out of all qualified OMC Proposals:

Score = 90 points

- If the OMC Price Proposal is not the lowest price out of all qualified OMC Proposals:
 Score = (Lowest Price) / (OMC Price Proposal) x 90 points

The OMC Price Proposal is the sum of the following:

- Add: The Net Present Value (“NPV”)⁹ over the contract term of the price of the O&M scope of work
- Subtract: The proposed Guaranteed Upfront Payment to the Department
- Subtract: The NPV¹⁰ over the contract term of the proposed Annual Guaranteed Revenue Share
- Subtract: The NPV¹¹ over the contract term of the proposed Annual Speculative Net Cash Flow Share

The Proposer’s OMC Technical Proposal Score (out of ten points) and the Proposer’s OMC Price Proposal Score (out of 90 points) will then be combined to calculate the Proposer’s OMC Proposal Score. The Proposer with the highest OMC Proposal Score will be the Best OMC Proposal.

The State Contract Officer will provide each Proposer with the Proposer’s OMC Technical Proposal Score, OMC Price Proposal Score, and OMC Proposal Score when the Department makes a Preferred Proposer and Preferred Procurement Track announcement.

Proposers must take note of the instructions in Appendix Part D – OMC: Price Proposal for O&M and Commercialization. In order to maximize value, the Department’s financial objective is to close any funding gap that may exist using the Guaranteed Upfront Payment, and to cover its annual O&M expense (i.e., the O&M Price Proposal) over the term of the contract, with the Annual Guaranteed Revenue Share. Proposals will not be deemed non-responsive if the Proposer’s Price Proposal results in a “funding gap.” See Part C-1.2 for further explanation.

E-1.9b. Technical Evaluation Criteria

The OMC Technical Proposal will be evaluated in each of the following major categories:

TECHNICAL EVALUATION FACTORS	POINTS
1. Project Approach	6
2. Proposer and Personnel Qualifications and Experience	4

OMC Technical Proposal Evaluation Criteria

1. Project Approach – 6 points

⁹ The discount rate to be used will be 2.82% p.a..
¹⁰ The discount rate to be used will be 2.82% p.a..
¹¹ The discount rate to be used will be 14.00% p.a..

Proposer’s approach to perform and manage O&M services required for the Project, with emphasis on the following factors:

- Proposer’s understanding of the Department’s objectives for the Project.
- Proposer’s approach to ensuring that adequate materials, equipment, and resources available to perform the work required for this Project.
- Soundness of proposed approach, methodology, and deliverables for conducting O&M services as it relates to the requirements discussed in O&M Scope of Work (Part E-1.1) of the RFP.
- Extent to which Proposer’s approach for O&M services is substantiated by the Good Industry Practices and standards.
- Quality and completeness of the Proposer’s approach for O&M services.
- Proposer’s approach to maintain close coordination with the Department and other contractors throughout the length of the Project.
- Responsiveness, organization, and clarity of Proposal.

Proposer’s approach to market, management and performance of Commercialization services required for the Project, with emphasis on the following factors:

- Proposer’s understanding of the Department’s objectives for the Commercialization of the project route.
- Soundness of proposed approach and methodology for providing Commercialization services.
- Extent to which Proposer’s approach for Commercialization services is substantiated by tangible evidence or observable market trends.
- Proposer’s approach to maintain close coordination with the Department and other contractors throughout the length of the Project.
- Responsiveness, organization, and clarity of Proposal.

2. Proposer and Personnel Qualifications and Experience – 4 points

Proposer’s relevant experience and expertise in providing O&M services for projects of a similar size and scope, with emphasis on the following factors:

- Proposer’s relevant experience and expertise in conducting O&M as it relates to the O&M scope of work
- Proposer’s qualifications, experience and competency of key O&M personnel

Proposer’s relevant experience and expertise in providing Commercialization services for projects of a similar size and scope, with emphasis on the following factors:

- Proposer’s relevant experience and expertise as it relates to the Commercialization scope of work
- Proposer’s qualifications, experience and competency of key Commercialization personnel

PART F: INFORMATION REQUIRED FROM PROPOSERS FOR P3 (TRACK 2)

The purpose of Part F is to describe the information required for the P3 Procurement Track (Track 2). In this section, P3 Proposers will find the following:

- **The DB Scope of Work (Part F-1.1)**, which describes the DB scope of work elements attributable to the P3 Proposers. P3 Proposers must take note that the DB Scope of Work is part of the DB Contract (Appendix Part A – Final Request for Proposals, Design-Build Project). The DB Scope of Work includes:
 - Structures Scope of Work
 - Transportation Management Scope of Work
 - Intelligent Transportation Management Scope of Work
 - Utilities Coordination Scope of Work
 - Erosion and Sedimentation Scope of Work
 - Environmental Permits Scope of Work
 - Railroad Coordination Scope of Work

- **O&M Scope of Work (Part F-1.2)**, which describes all the O&M scope of work elements attributable to the P3 Proposers. P3 Proposers must take note that there is a Comprehensive Agreement Terms (Appendix Part E – P3: Comprehensive Agreement Terms) and price proposal sheet (Appendix Part G – P3: Price Proposal for O&M and Commercialization) associated with Part F for P3 Proposers. The O&M Scope of Work includes the following:
 - Maintenance Description
 - Device Descriptions and Priority
 - Project Management Requirements
 - Construction and Maintenance Phasing
 - ITS Maintenance Contract Duration
 - Preventive Maintenance
 - Responsive Maintenance
 - Emergency Maintenance
 - NC811 Underground Location Services
 - Software Requirements
 - IAMS Requirements
 - Work Order Management System
 - INMS Requirements
 - Compensation and Pay-For-Performance
 - Preventive Maintenance
 - Responsive Maintenance
 - Emergency Maintenance

- NC 811 Locate Services
- Formulas for Performance Payments

- **Commercialization Scope of Work (Part F-1.3)**, which describes the assets to be installed by the P3 Contractor available for commercialization and provides an overview of the additional scope of work the P3 Proposer may undertake.

- **P3 Information Submittal Requirements (Part F-1.4)**, which provides an overview of the information required as part of the P3 Proposal.

- **P3 Services Submittal (Part F-1.5)**, which describes the information required as part of the P3 Proposal including the P3 Proposer’s approach to the O&M Scope of Work and relevant experience.

- **Commercialization Services Submittal (Part F-1.6)**, which describes the information required as part of the Commercialization proposal including the P3 Proposer’s approach to the Commercialization Scope of Work and relevant experience.

- **P3 Price Proposal Submittal (Part F-1.7)**, which describes the information required as part of the P3 Proposer’s price proposal.

- **Base Case Financial Model Submission (Part F-1.8)**, which describes the financial model required as part of the P3 Proposer’s submission, in addition to the P3 Proposer’s price proposal.

- **P3 Evaluation Criteria (Part F-1.9)**, which describes the evaluation criteria of the P3 Proposal

F-1.1. DB Scope of Work

Proposers must take note that with respect to Procurement Track 2, the Department may issue one or more changes to the P3 Contract that call for physical extensions or expansions of the scope of the Project, as compared to the scope currently contemplated in the RFP (each such physical extension or expansion, a “Scope Extension”). For Further details regarding the potential implementation of Scope Extensions, please see Appendix Part 3 — P3: Comprehensive Agreement Terms.

F-1.1a. Structures Scope of Work

General

The Design-Build Team shall be responsible for the design and installation of all fiber optic conduit attachment systems (conduit) necessary to complete the project.

Unless allowed otherwise in this RFP, designs shall be in accordance with the latest edition of AASHTO LRFD Bridge Design Specifications (with exceptions noted in the NCDOT *Structures Management Unit Manual*), NCDOT *Structures Management Unit Manual* (including Policy Memos) and NCDOT *Bridge Policy Manual*.

Unless allowed otherwise in this RFP, all construction and materials shall be in accordance with the 2018 NCDOT *Standard Specifications for Roads and Structures*, NCDOT Structures Management Unit Project Special Provisions, and NCDOT Structures Management Unit Standard Drawings.

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

Additional conduit attachments to structures may be permitted with the approval of the Engineer and review by Structures Management Unit.

Referring to Part B 1-4: Figure 1: Project Scope Overview: Proposers must take note that the Project scope of work includes installing fiber and conduit along the complete I-95/U.S. 70 network and only Network Segment 1 and 3 of the U.S. 74 network. NCDOT is currently exploring various options to complete the connection (represented by Network Segment 2) between U.S. 74 Network Segment 1 and 3, and the cost vs. benefit of such.

Project Scope I-5986C

Fiber Optic Conduit Attachment Systems (Conduit) may be attached to the following structures on I-95:

Robeson County: - none

Cumberland County:

Bridge No. 250111 on I-95 (Southbound) over Cape Fear River

Bridge No. 250134 on I-95 (Southbound) over SR 1006 and CSX Railroad

Harnett County - none

Johnston County

Bridge No. 500101 on I-95 (Southbound) over Neuse River
Bridge No. 500107 on I-95 (Northbound) over SR 1927, SR 2305, and CSX Railroad Bridge No. 500118 on I-95 (Northbound) over CSX Railroad

Wilson County

Bridge No. 970099 on I-95 (Northbound) over Coastal Carolina Railroad (“CLNA”) Railroad

Nash County

Bridge No. 630133 on I-95 (Southbound) over Sapony Creek Bridge No. 630192 on I-95 (Southbound) over CSX Railroad Bridge No. 630201 on I-95 (Northbound) over Stony Creek

Halifax County

Bridge No. 410131 on I-95 (Northbound) over SR 1742 and CSX Railroad Bridge No. 410139 on I-95 (Northbound) over Roanoke River

Northampton County

Bridge No. 650009 on I-95 (Northbound) over Roanoke River

R-5777D

Fiber Optic Conduit Attachment Systems (Conduit) may be attached to the following structures on US 70:

Carteret County: none

Craven County:

Bridge No. 240085 on US 70 (Eastbound) over SR 1004 and NSRR & NCRN Railroad Bridge No. 240084 on US 70 (Westbound) US 17N / NC 55N over Trent River

Jones County: - none

Lenoir County:

Bridge No. 530062 on US 70 (Westbound) over Neuse River
Bridge No. 530057 on US 70 (Westbound) over Neuse River Overflow

Wayne County:

Bridge No. 950383 on US 70 Bypass (Westbound) over New Hope Rd & NCRN/NSRR Bridge No. 950381 on US 70 Bypass (Westbound) over Bear Creek

Bridge No. 950379 on US 70 Bypass (Westbound) over Reedy Branch Bridge No. 950366 on US 70 Bypass (Westbound) over Stoney Creek Bridge No. 950358 on US 70 Bypass (Westbound) over CSX Railroad Bridge No. 950353 on US 70 Bypass (Westbound) over I-795

Bridge No. 950375 on US 70 Bypass (Westbound) over SR 1326 and Little River

Johnston County:

Bridge No. 500103 on US 70 (Westbound) over NCRN/NS Railroad Bridge No. 500521 on US 70 Bypass (Westbound) over CSX Railroad Bridge No. 500601 on US 70 Bypass (Eastbound) over Little Creek Bridge No. 500579 on US 70 Bypass (Westbound) over Austin Pond

Bridge No. 500597 on US 70 Bypass (Westbound) over Tributary Swift Creek

Bridge No. 500603 on US 70 Bypass (Eastbound) over SR 1563 (Little Creek Church Rd)

HO-0002A, B & C

Fiber Optic Conduit Attachment Systems (Conduit) may be attached to the following structures on US 74:

Buncombe County:

Bridge No. 100238 on I-26/ US 74 over Hominy Creek

Bridge No. 100214 (EBL) or 100211 (WBL) on I-26/ US 74 over French Broad River

Henderson County:

Bridge No. 440234 (EBL) or 440233 (WBL) on I-26/ US 74 over Cane Creek

Bridge No. 440230 (EBL) or 440228 (WBL) on I-26/ US 74 over Norfolk Southern Railroad

Bridge No. 440212 (EBL) or 440211 (WBL) on I-26/ US 74 over Clear Creek

Bridge No. 440112 (EBL) or 440108 (WBL) on I-26/ US 74 over Green River

Polk County:

Bridge No. 740224 (EBL) or 740225 (WBL) on US 74 over Green River and River Crest Pkwy.

Rutherford County:

Bridge No. 800647 (EBL) or 800646 (WBL) on US 74 over Broad River and Coxe Rd.

Bridge No. 800044 (EBL) or 800047 (WBL) on US 74 over CSX Railroad

Bridge No. 800083 (EBL) or 800084 (WBL) on US 74 over Second Broad River

Bridge No. 800092 (EBL) or 800093 (WBL) on US 74 over Webbs Creek

Cleveland County:

Bridge No. 220006 (EBL) or 220008 (WBL) on US 74 over abandoned railroad

Bridge No. 220048 (EBL) or 220049 (WBL) on US 74 over Sandy Run

Bridge No. 220059 (EBL) or 220050 (WBL) on US 74 over Beaverdam Creek

Bridge No. 220073 (EBL) or 220074 (WBL) on US 74 over Brushy Creek

Bridge No. 220079 (EBL) or 220080 (WBL) on US 74 over First Broad River

Bridge No. 220101 (EBL) or 220102 (WBL) on US 74 over Buffalo Creek

Gaston Country:

Bridge No. 350071 on US 74 over Norfolk Southern Railroad

Bridge No. 350082 on US 74 over South Fork Catawba River

Bridge No. 350091 on US 74 over Catawba River

Mecklenburg County:

Bridge No. 590830 (NBL) or 590829 (SBL) on US 74/ I-485 over Norfolk Southern Railroad

Bridge No. 590638 (WBL) or 590639 (EBL) on US 74/ I-485 over Sugar Creek

Bridge No. 590604 (WBL) or 590603 (EBL) on US 74/ I-485 over Little Sugar Creek

Bridge No. 590671 (WBL) or 590670 (EBL) on US 74/ I-485 over McMullen Creek

Bridge No. 590673 (WBL) or 590672 (EBL) on US 74/ I-485 over McAlpine Creek

Bridge No. 590802 (WBL) or 590803 (EBL) on US 74/ I-485 over CSX Railroad

Union County:

Bridge No. 890550 (WBL) or 890551 (EBL) on US 74 Bypass (Monroe Expressway) over South Fork Crooked Creek

Bridge No. 890491 (WBL) or 890492 (EBL) on US 74 Bypass (Monroe Expressway) over Stewarts Creek

Bridge No. 890499 (WBL) or 890500 (EBL) on US 74 Bypass (Monroe Expressway) over Richardson Creek

Bridge No. 890501 (WBL) or 890502 (EBL) on US 74 Bypass (Monroe Expressway) over East Fork Stewart Creek

Bridge No. 890507 (WBL) or 890508 (EBL) on US 74 Bypass (Monroe Expressway) over McIntyre Rd & Meadow Branch

Bridge No. 890511 (WBL) or 890512 (EBL) on US 74 Bypass (Monroe Expressway) over CSX Railroad and US 74

Anson County:

Bridge No. 030004 (WBL) or 030003 (EBL) on US 74 over Lanes Creek

Bridge No. 030033 (WBL) or 030032 (EBL) on US 74 over Brown Creek

Bridge No. 030050 (WBL) or 030049 (EBL) on US 74 over Goulds Fork

Bridge No. 030074 (WBL) or 030073 (EBL) on US 74 over CSX/ Seaboard Coastline Railroad

Bridge No. 030081 (WBL) or 030078 (EBL) on US 74 over Pee Dee River

Richmond County:

Bridge No. 760215 (WBL) or 760216 (EBL) on US 74 Bypass over CSX Railroad & Hitchcock Creek

Bridge No. 760203 (WBL) or 760204 (EBL) on US 74 Bypass over CSX Railroad

Bridge No. 760207 (WBL) or 760208 (EBL) on US 74 Bypass over Marks Creek

Bridge No. 760210 (WBL) or 760209 (EBL) on US 74 Bypass over NC 381 & CSX Railroad

Bridge No. 760211 (WBL) or 760212 (EBL) on US 74 Bypass over CSX Railroad

Scotland County:

Bridge No. 820016 (WBL) or 820009 (EBL) on US 74 over CSX Railroad

Bridge No. 820023 (WBL) or 820022 (EBL) on US 74 over Gum Swamp

Bridge No. 820060 (WBL) or 820057 (EBL) on US 74 over Norfolk Southern Railroad

Bridge No. 820072 (WBL) or 820071 (EBL) on US 74 over Little Creek

Bridge No. 820073 (WBL) or 820094 (EBL) on US 74 over US 74 Bus & CSX Railroad

Bridge No. 820096 (WBL) or 820095 (EBL) on US 74 over Big Shoe Creek

Bridge No. 820098 (WBL) or 820097 (EBL) on US 74 over SR 1436 & CSX Railroad

Robeson County:

Bridge No. 770455 (WBL) or 770454 (EBL) on US 74 over CSX Railroad

Bridge No. 770457 (WBL) or 770456 (EBL) on US 74 over CSX Railroad

Bridge No. 770480 (WBL) or 770481 (EBL) on US 74 over CSX Railroad

Bridge No. 770110 (WBL) or 770465 (EBL) on US 74 over Lumber River Overflow

Bridge No. 770118 (WBL) or 770466 (EBL) on US 74 over Lumber River

Columbus County:

Bridge No. 230004 (WBL) or 230097 (EBL) on US 74 over Lumber River Overflow

Bridge No. 230018 (WBL) or 230398 (EBL) on US 74 over Lumber River Overflow

Bridge No. 230054 (WBL) or 230053 (EBL) on US 74 over White Marsh Swamp

Bridge No. 230384 (WBL) or 230383 (EBL) on US 74 over Friar Swamp
Bridge No. 230385 (WBL) or 230386 (EBL) on US 74 over Friar Swamp
Bridge No. 230387 (WBL) or 230388 (EBL) on US 74 over Friar Swamp
Bridge No. 230086 (WBL) or 230083 (EBL) on US 74 over Livingston Creek

Brunswick County:

Bridge No. 090005 (WBL) or 090004 (EBL) on US 74 over Hood Creek

Project Details

All Conduit shall be on the exterior face of bridge structures.

Conduit shall not be carried through existing backwall or wingwall elements of bridge structures. Conduit shall not be carried through interior girder bays.

Conduit attachment will not be permitted on girder elements of any bridge structures. When attached, Conduit shall not affect the existing vertical clearance of the bridge.

Epoxy anchor systems will only be permitted for horizontal attachment connections. No over-head or vertically loaded epoxy anchoring connections will be allowed.

Conduit alignment shall be designed without disturbance of the existing approach slabs and guardrail posts. Conduit may be attached to outside face of wingwall.

Conduit shall include Limited Access Junction Boxes (see Project Special Provision- Junction Boxes (Limited Access Facilities) for details) at both ends of each bridge structure. Limited Access Junction boxes shall be located as close to approach shoulder as practical without disturbance to existing approach slabs and guardrail posts.

Conduit shall include all expansion joints as required by manufacturer. Conduit assembly shall also be designed to accommodate bridge thermal movements calculated per Section 6.2.3 of the Structures Management Unit Manual.

Structures Management Unit detail for Fiber Optic Conduit attachment to barrier rail may be used. The standard detail is found in Structures English Cell Library for “Fiber Optic Conduit” and can be found in the Special Provision “Fiber Optic Conduit System (RGC-Hanger)”. Consideration for an alternate conduit material other than Rigid Galvanized Conduit will be made at the discretion of, and upon review of such alternative by, the Department.

F-1.1b. Railroad Coordination Scope of Work

General

The Design-Build Team shall be responsible for coordinating with Norfolk Southern Railway, North Carolina Railroad, Coastal Carolina Railroad (CLNA), and CSX Transportation (Collectively referred to as Railroad Owners) to secure the necessary agreements or amendments to the existing railroad agreements for the addition of conduit attached to the highway bridges over, or bored under, the tracks operated and maintained by each Railroad Owner. Any new agreement or existing agreement modification that is necessary, as determined by NCDOT and/ or each Railroad Owner, shall be the responsibility of the Design-Build Team.

Costs

The Design-Build Team shall be responsible for all costs associated with this project to include, but not be limited to, plan reviews, materials furnished by Railroad Owners, signals and communications work, track and related construction by Railroad Companies and/or their representative(s), any delays to train operations or maintenance crews, required insurances, railroad flagging, right of way acquisition, and construction engineering.

The Design-Build Team shall be responsible for all construction required. The Railroad Owners will not incur cost, and the Design Build Team shall not enter into or onto any rail corridor until an Agreement has been amended or executed, insurance requirements are met, and each Railroad Owner receives written authorization to incur cost.

Preparation for Construction within the Existing Railroad Owners Right of Way

- I. The Design-Build Team shall comply with the following applicable documents, unless noted otherwise elsewhere in this RFP and / or a design exception is received from the Railroad Owner and NCDOT via the NCDOT Design-Build Unit:
 - A. *AREMA Manual for Railway Engineering, latest edition*
 - B. *Norfolk Southern Railway – Standard Specifications for Materials and Construction, latest edition*
 - C. *Norfolk Southern Railway - Public Projects Manual, latest edition*
 - D. *CSX Transportation Public Project Information, latest edition*
 - E. *Federal Aid Policy Guide 23 CFR 140I*
 - F. *Federal Aid Policy Guide 23 CFR 646*
 - G. *NCDOT Construction Manual Section 105-8*
 - H. *NCDOT Standard Specifications for Roads and Structures, Section 107-9 (Excluding Paragraph 2)*
 - I. *North Carolina Administrative Code Section T19A: 02B, 0150 through 015*
- II. The Design-Build Team shall verify the number of trains per day and the maximum speed allowed with the Railroad Owners. Railroad inspection and maintenance requirements, in addition to normal train operations, will occur that may impact construction activities.

- III. Railroad traffic shall be maintained at current levels at all times.
- IV. The Design-Build Team shall design and construct conduit attachments over existing track that will not decrease any existing vertical or horizontal clearance from the existing track to the bridge.

Arrangements for Protection and Adjustments to Existing and Proposed Railroad Crossings Surface and Roadbeds:

- I. The Design-Build Team shall make the necessary arrangements with the Railroad Owners for the installation of temporary grade crossing surfaces, if necessary. Temporary grade crossing surfaces shall conform to the Railroad Owners standard. All crossing surfaces, including but not limited to all grade crossing signals, gates, and any related train control signals/communications systems, shall be procured, installed and removed by the Railroad Company, or their representative, at the Design-Build Team's expense.

The Design-Build Team shall not commence any work on the Railroad Owners right of way / easement until all agreements have been executed, insurance acquired and approved in accordance with the Railroad Owners policies and procedures, and all construction plans have been approved by NCDOT and Railroad Owners. The Design-Build Team shall make the necessary arrangements with the Railroad Owners that are required to protect against property damage that may result in loss of service, expense, or loss of life. The Design- Build Team shall be responsible for all damage to the Railroad Owners resulting from their operations and the Railroad Owners may issue a stop order until all dangerous situations are remedied.

The Design-Build Team shall be responsible for providing Railroad Protective Liability Insurance for Bodily Injury Liability, Property Damage Liability, and Physical Damage to Property to the Railroad Owners and the Railroad Operators, identifying the Railroad Owners as the insured party, during the duration of the time work is being performed on or over the railroad right of way / easement. Separate policies shall be required for each Railroad Owner or Operator. The Design-Build Team shall be responsible for verifying and obtaining the appropriate insurance and coverage with the Railroad Owners. Other insurance requirements, including those for all subcontractors, are detailed in the documents referenced herein. Although not anticipated, the Design-Build Team shall be responsible for any required Roadway Worker Protection training / certifications.

- II. Prior to any utility installation, removal or relocation across the Railroad Owners right of way / easement, including but not limited to pipelines and / or electrical and communication cable routings over or under railroad-owned facilities, the Design-Build Team shall coordinate with the Railroad Owners and private utility owners to obtain the necessary permits and secure the appropriate Encroachment Agreements. At a minimum, the Design- Build Team shall assist the private utility owners in obtaining their respective Encroachment Agreements in the private utility owner's name. In accordance with the requirements noted herein and the Railroad Owners' specifications, the private utility owner will be responsible for all associated fees and provide the necessary insurance coverage.

All work associated with any utility installation across the Railroad Owners' right of way / easement shall adhere to the requirements noted herein and the Railroad Owners' specifications.

- III. After negotiations among the Department, the Design-Build Team and the Railroad Owners have been finalized, and approval obtained from the Board of Transportation, the Design-Build Team shall submit executed agreements and plans to NCDOT's State Structures Engineer, via the NCDOT Design-Build Unit, for plan approval and final agreement execution by NCDOT, prior to authorizing railroad work. After approval by NCDOT, one copy of the executed agreement will be returned to the Design-Build Team and one copy forwarded to the NCDOT's Resident Engineer, prior to any construction work by the Design-Build Team or NSR / CSXT. This section particularly applies if a modification to an agreement is necessary.

Coordination with Norfolk Southern Railway and North Carolina Railroad

The Design-Build Team shall coordinate with NSR through the NSR General Engineering Consultant ("GEC"), TGS Engineers. The Design-Build Team shall coordinate with Mr. Jeffrey Brittain at TGS Engineers, 107-A Mica Avenue, Morganton, NC 28655, (828) 437-4681 Ext. 16), to obtain plan approval and a partially executed legal agreement with NSR and the Department of Transportation (which includes NCDOT Rail Division plan review) as the parties in the agreement for the NS overpass grade separation conduit installation. For crossings of the rail line owned by NCR and operated by NS, The Design-Build Team shall coordinate with NCR through the NCR Vice President, Mr. Donald Arant, 2809 Highwoods Blvd, Raleigh, NC 27604 at 919 954 7601.

Plan approval shall be based on multiple submittals including at minimum a preliminary plan submittal and 90% plan submittal. The preliminary plan submittal to the NCR/NS shall include the NSR's "Overpass Grade Separation Data Sheet," as applicable, appropriate roadway plan sheets showing impacts to the right of way / easement, erosion control plans, and drainage calculations for any drainage on or across the NCR/NS's right of way / easement, and bridge plans showing a vertical and horizontal alignment and preliminary general drawings. The 90% plan submittal shall include all necessary details, insets, and notes for construction with no substantial changes to the alignments or layout shown in the preliminary plan submittal and all supporting design calculations. An electronic copy (pdf format) of all review plans and associated data shall be submitted to NCR/NS through the NCDOT Design-Build Unit. If any re-submittals of plans or any additional information is required, an electronic copy (pdf format) shall be submitted to the NCDOT Design-Build Unit for forwarding to the NCR/NS. Release for Construction ("RFC") Plans shall be submitted to NCR/NS before construction begins. For RFC Plans, a minimum of three (3) half- size sets and an electronic copy of the plans (pdf format) shall be submitted to the NCDOT Design-Build Unit for forwarding to the NCR/NS. Working Drawings affecting the NCR/NS's operations and / or right of way / easement shall follow the submittal process as outlined in the 2018 NCDOT *Standard Specifications for Roads and Structures* or Special Provisions. The Department will review all agreement modifications prior to submittal to NCR/NS. The Department will execute and distribute the agreement modifications within 14 calendar days of Board of Transportation approval. The agreements, and any modifications thereto, shall include necessary Force Account items, including but not limited to, preliminary engineering, construction engineering, crossing surfaces, track materials, track construction, signals and flagging. The railroad agreements state that the Department will be responsible for payment of the NSR's Force Account work and NSR expenses; however, the Design-Build Team shall reimburse the Department for these costs including all Force Account estimate overruns. This reimbursement shall be incidental to the lump sum price bid for the project. Upon request, the Department will provide copies of the NSR invoices to the Design-Build Team

for review. The Design-Build Team shall have ten (10) days to provide written comments to the NCDOT Design-Build Unit, after which the Department will pay the invoice. The Design-Build Team shall be responsible for maintaining records to verify the invoice items.

Coordination with CSX Transportation

The Design-Build Team shall coordinate with the primary owner of CSXT through the CSXT GEC, to be named at project kickoff. The Design-Build Team shall coordinate with Mr. Troy Creasy of CSX, 4900 Old Osborne Tnpke., Suite 200, Richmond, VA 23231, (804) 226-7718 to obtain coordination procedures for plan approval and, if needed, a partially executed legal agreement with CSXT and the NCDOT as the parties in the agreement for proposed roadway work. The Department will review the agreement prior to submittal to the CSXT. The Department will execute and distribute the Agreement within 14 calendar days of Board of Transportation approval. The agreement, and any modifications thereto, shall include necessary Force Account items, including but not limited to, preliminary engineering, construction engineering, flagging, signal and communication lines, and other work performed by the CSXT, as necessary. CSXT has sole authority to determine the need for flagging required to protect its operations and property. The railroad agreements state that the Department will be responsible for payment of the CSXT's Force Account work and CSTX expenses; however, the Design-Build Team shall reimburse the Department for these costs including all Force Account estimate overruns. This reimbursement shall be incidental to the lump sum price bid for the project. Upon request, the Department will provide copies of the CSXT invoices to the Design-Build Team for review. The Design-Build Team shall have ten (10) days to provide comments to the Department, after which the Department will pay the invoice. The Design-Build Team shall be responsible for maintaining records to verify the invoice items.

The preliminary plan and final plan submittals to CSXT shall include roadway plans, the Railroad's "Overhead Bridge Crossing Data," appropriate roadway plan sheets showing impacts to the CSXT right of way / easement, erosion control plans, and drainage calculations for any drainage on or across the CSXT's right of way / easement and bridge plans showing a vertical and horizontal alignment and preliminary general drawings. Electronic versions of the preliminary plans, final plans and data shall be submitted to Arcadis through the NCDOT Design-Build Unit. If plan re-submittals, RFC Plans and / or any additional information are required, the Design-Build Team shall submit electronic versions to Arcadis through the NCDOT Design-Build Unit. Working Drawings affecting CSXT's operations and / or right of way / easement shall follow submittal process as outlined in the 2018 NCDOT *Standard Specifications for Roads and Structures* or Special Provisions.

Coordination with Coastal Carolina Railroad (CLNA)

The Design-Build Team shall coordinate with Alan Bridgers, General Manager Carolina Coastal Railway at 252-237-8259 to obtain coordination procedures for plan approval and, if needed, a partially executed legal agreement with CLNA and the NCDOT as the parties in the agreement for proposed roadway work. The Department will review the agreement prior to submittal to the CLNA. The Department will execute and distribute the Agreement within 14 calendar days of Board of Transportation approval. The agreement, and any modifications thereto, shall include necessary Force Account items, including but not limited to, preliminary engineering, construction engineering, flagging, signal and communication lines, and other work performed by the CLNA,

as necessary. CLNA has sole authority to determine the need for flagging required to protect its operations and property. The railroad agreements state that the Department will be responsible for payment of the CLNA's Force Account work and CLNA expenses; however, the Design-Build Team shall reimburse the Department for these costs including all Force Account estimate overruns. This reimbursement shall be incidental to the lump sum price bid for the project. Upon request, the Department will provide copies of the CLNA invoices to the Design-Build Team for review. The Design-Build Team shall have ten (10) days to provide comments to the Department, after which the Department will pay the invoice. The Design-Build Team shall be responsible for maintaining records to verify the invoice items.

The preliminary plan and final plan submittals to CLNA shall include roadway plans, appropriate roadway plan sheets showing impacts to the CLNA right of way / easement, erosion control plans, and drainage calculations for any drainage on or across the CLNA's right of way / easement and bridge plans showing a vertical and horizontal alignment and preliminary general drawings. Electronic versions of the preliminary plans, final plans and data shall be submitted through the NCDOT Design-Build Unit. If plan re-submittals, RFC Plans and / or any additional information are required, the Design-Build Team shall submit electronic versions through the NCDOT Design-Build Unit. Working Drawings affecting CLNA's operations and / or right of way / easement shall follow submittal process as outlined in the 2018 NCDOT *Standard Specifications for Roads and Structures* or Special Provisions.

Coordination with NCDOT Rail Division

All plans submitted to NCR, NSR, CLNA and / or CSXT, as required above, shall be submitted to the NCDOT Rail Division through the NCDOT Design-Build Unit.

F-1.1c. Transportation Management Scope of Work

Laws, Standards, and Specifications

The Design-Build Team shall design the Transportation Management Plan (“TMP”) in accordance with the requirements of this RFP and the version of the standards listed below that are effective on the Technical Proposal submittal date.

- *NCDOT Standard Specifications for Roads and Structures*
- *NCDOT Roadway Standard Drawings*
- *FHWA Manual on Uniform Traffic Control Devices (“MUTCD”)*
- *NCDOT Supplement to the Manual on Uniform Traffic Control Devices (“NCSMUTCD”)*
- *AASHTO A Policy on Geometric Design of Highways and Streets*
- *NCDOT Roadway Design Manual*
- *AASHTO Roadside Design Guide*
- *Americans with Disabilities Act of 1990 (“ADA”)*
- *FHWA Standard Highway Signs*
- *NCDOT Design-Build Submittal Guidelines*
- *FHWA Rule on Work Zone Safety and Mobility (23 CFR 630 Subpart J and K)*
- *Transportation Research Board Highway Capacity Manual*
- *NCDOT Transportation Management Plans Design Manual*

References

The Design-Build Team shall use the references provided on the site below as supplementary guidelines and requirements for the design and implementation of the TMP.

<https://connect.ncdot.gov/projects/WZTC/Pages/default.aspx>

Prequalification

The Design-Build Team shall select a Private Engineering Firm (“PEF”) that has experience developing TMPs on comparable projects for the NCDOT and maintains prequalification code 00541 (Traffic Management Plan - Level 1 and 2).

Transportation Management Plans

The Design-Build Team shall prepare TMP that include Temporary Traffic Control Plans (“TTCP”), an Incident Management Plan (“IMP”) and a Traffic Operations Plan (“TOP”).

The Design-Build Team shall produce TMPs for each phase of work that impacts road users. The TMPs shall include details of all traffic control devices, and signage applicable to each phase of work. The information on the TMP shall be of sufficient detail to allow verification of design criteria and safety requirements. The Design-Build Team shall develop TMPs that include

procedures to communicate TMP information to the public about road and travel conditions within the work zone and affected roadway network.

A Transportation Management Phasing Concept (“TMPC”) shall be prepared by the Design-Build Team to present the Design-Build Team’s approach to all areas covered under the TMP, including hauling of materials to, from, and within the project right of way. The Design-Build Team shall include the TMPC in the Technical Proposal. The Design-Build Team shall submit the TMPC for Department review and acceptance and shall address NCDOT comments on the TMPC prior to commencing production of the TMP for each phase of work or any construction. Any changes to the TMPC after acceptance by NCDOT shall require a submittal for review prior to any future phasing submittals.

Lane and Road Closure Notification

Lane Closure Notice (“LCN”)

The Design-Build Team shall issue a LCN to NCDOT and affected government entities a minimum of thirty (30) calendar days prior to the publication of any notices or placement of any traffic control devices associated with lane closures, or other change in traffic control requiring lane closures. The Design-Build Team will be allowed to issue a single LCN for multiple / consecutive lane closures that occur in the same location.

For an LCN utilizing a non-NCDOT controlled facility, the Design-Build Team shall secure concurrence in writing from the controlling government entity. An LCN shall contain the estimated date, time, duration, and location of the proposed work. The Design-Build Team shall keep NCDOT informed of any and all changes or cancellations of proposed lane closures prior to the date of their implementation.

If an emergency condition should occur, an LCN shall be provided to NCDOT within two (2) days after the event. For non-NCDOT controlled facilities, the Design-Build Team shall immediately notify the controlling government entity.

General Design and Construction Requirements

Maintenance of Access

Maintain access to all businesses, schools, residences, bus stops, mass transit facilities, park and ride lots, and emergency services at all times. Prior to incorporation, obtain written approval from the Engineer on the method to maintain access.

In accordance with the Department’s Policy on Evaluating Temporary Accommodations for Pedestrians during Construction, found on the website noted below, the Design-Build Team shall maintain pedestrian accommodations in all areas as follows:

Roadway	Minimum Level of Pedestrian Accommodation
US 70 from Hestron Drive to the NC Ports, Morehead City	Basic
US-74 from SR-1472 (Salisbury St) to SR-1714 (Stanback Ferry Ice Plant Rd), Wadesboro	Basic
Any -Y- Line containing sidewalks, shared use paths or worn foot paths	Basic
All Other Roads	Absence of Need

<https://connect.ncdot.gov/projects/WZTC/Documents/AccomPedinWZProc.pdf>

Traffic Control Devices

The Design-Build Team shall use traffic control devices that conform to all NCDOT requirements and are listed on the NCDOT Approved Products List. The Approved Products List may be referenced on the website noted below:

<https://apps.ncdot.gov/vendor/approvedproducts/>

The use of any devices that are not shown on the NCDOT Approved Products List shall require written approval from the Design-Build Unit prior to incorporation.

When within 1000' of a signalized intersection, channelizing device spacing shall not exceed a distance in feet equal to the posted speed limit. When beyond 1000' to a signalized intersection, channelizing device spacing shall not exceed a distance in feet equal to twice the posted speed limit. Channelizing devices shall be spaced ten feet on-center in radii. Channelizing devices shall be two feet off the edge of an open travelway when lane closures are not in effect. Skinny drums shall only be allowed as defined in Section 1180 of the *NCDOT Standard Specifications for Roads and Structures*.

Portable Changeable Message Signs (“PCMS”) should be placed off the shoulder of the roadway and outside of the clear zone. If a PCMS must be placed on the roadway shoulder or within the clear zone, it shall be delineated with retroreflective temporary traffic control (“TTC”) devices. When PCMSs are not being used to display TTC messages, they should be relocated such that they are outside of the clear zone and turned away from traffic. If relocation is not practical, the PCMS shall be delineated with retroreflective TTC devices.

Lane and Shoulder Requirements

On I-95, US 70, and US74, the Design-Build Team shall not install more than two (2) miles of lane closure in any one direction, measured from the beginning of the merge taper to the end of the lane closure.

On two-lane, two-way facilities, that cross I-95 or US 70, the Design-Build Team shall not install more than five hundred (500) feet of lane closure in any one direction on any roadway within the project limits or in conjunction with this project, measured from the beginning of the merge taper to the end of the lane closure.

The Design-Build Team shall remove lane closure devices from the lane when work is not being performed behind the lane closure or when a lane closure is no longer needed.

The Design Build Team shall place the necessary traffic control procedures for either a Lane closure, Shoulder closure or the display of portable Advance Warning signs using NCDOT Roadway Standard Drawings when personnel and /or equipment are working within the following distances from an open travel lane and not protected by existing traffic barrier:

All Interstates and all roads with a posted speed limit of 50 MPH or greater

- From 10 feet or less, close the nearest open travel lane.
- From 11 to 20 feet, close the nearest open shoulder.
- From 21 to 30 feet, display Utility Advance Warning signs (W21-7).
- Greater than 30 feet, no traffic control signs, or devices are required.

All other roads:

- From 5 feet or less, close the nearest open travel lane.
- From 6 to 15 feet, close the nearest open shoulder.
- From 16 to 20 feet display Utility Advance Warning signs (W21-7).
- Greater than 20 feet, no traffic control signs, or devices are required.

Impacts to Other Network Roadways

The Design-Build Team shall coordinate with the Division Maintenance Engineer, Resident Engineer, Division Traffic Engineer, Rail Division, and Statewide Transportation Operations Center (“STOC”) to manage traffic operations within the work zone and other roadways within the network that may be affected by the work zone activities. Coordination shall include providing notification of planned lane or shoulder closures, traffic management, access management, and incidents.

The Design-Build Team shall take steps to minimize disruptions to existing roadway facilities during construction and shall demonstrate how the traffic control phasing minimizes inconvenience to motorists on all roads.

Signing

When portable work zone signs are not in use for periods longer than 30 minutes, the Design-Build Team shall lay the portable work zone sign flat on the ground and collapse the sign stand and lay it flat on the ground.

The Design-Build Team shall ensure proper signing is in place at all times during construction as required by the MUTCD. Guide signs shall be maintained or modified as required by the TMP throughout the project duration. All temporary signing shall be shown on the Traffic Control Plans or Temporary Signing Plans to be reviewed and approved by the Work Zone Traffic Control Section and the Signing and Delineation Unit prior to incorporation.

Project Requirements and Time Restrictions

All time restrictions and notes shall be included in the TMP General Notes, unless noted otherwise elsewhere in this RFP.

Intermediate Contract Times 2 and 6 for Lane Narrowing, Lane Closure, Holiday and Special Event Restrictions

Except as allowed otherwise elsewhere in this RFP, the Design-Build Team shall maintain the existing traffic pattern and shall not close or narrow a single lane of traffic during the times listed in ICT 2 and 6.

Intermediate Contract Time	Facility	Days	Time Restrictions
2	I-95, including all ramps and loops	Monday through Thursday	7:00 a.m. to 7:00 p.m.
		Friday through Sunday	7:00 a.m. to 9:00 p.m.
	I-40 and US-70 from I-40 to NC-581, including all	Monday through Sunday	5:00 am to 9:00 pm

	ramps and loops		
	I-85, I-485, and I-26, including all ramps and loops	Monday through Sunday	6:00 am to 9:00 pm
3	US-70, east of NC-581 and more than 1 mile from a signalized intersection	Monday through Friday (Year-round)	5:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m.
		Friday through Sunday (May 15 thru Sept. 15)	Friday at 5:00 a.m. Until Sunday at 8:00 p.m.
	US-70, east of NC-581 and within 1 mile of a signalized intersection	Monday through Thursday	5:00 a.m. to 7:00 p.m.
		Friday through Sunday	Friday at 5:00 a.m. Until Sunday at 8:00 p.m.
4	US-74, US-74 Bypass, & US-74 Alternate (Mecklenburg, Union, Gaston, Cleveland, and Brunswick Counties), including all ramps and loops	Monday through Sunday	6:00 am to 9:00 pm
5	US-74 (other counties and more than 1 mile from a signalized intersection), including all ramps and loops.	Monday through Friday	6:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m.
	US-74 (other counties and within 1 mile of a signalized intersection), including all ramps and	Monday through Friday	6:00 a.m. to 7:00 p.m.
		Saturday and Sunday	9:00 a.m. to 6:00 p.m.

	loops		
6	-Y- Lines with AADT less than 8,000	Monday through Sunday	No Restrictions
	-Y- Lines with AADT 8,000-20,000	Monday through Friday	6:00 a.m. to 9:00 a.m. And 4:00 p.m. to 7:00 p.m.
7	-Y- Lines with AADT greater than 20,000	Monday through Sunday	6:00 a.m. to 7:00 p.m.
	NC-146 and NC-280 (Buncombe County)	Monday through Friday	6:00 a.m. to 9:00 p.m.
		Saturday and Sunday	6:00 a.m. to 9:00 p.m.

Official AADT volumes for determining time restrictions are available at the following link:

<https://connect.ncdot.gov/resources/State-Mapping/Pages/Traffic-Volume-Maps.aspx>

In addition, the Design-Build Team shall not close or narrow a lane of traffic on the aforementioned facilities, detain, and / or alter the traffic flow on or during holidays, holiday weekends, special events, or any other time when traffic is unusually heavy. At a minimum, these requirements / restrictions shall apply to the following schedules:

- For New Year's between the hours of 5:00 a.m. December 31st and 9:00 p.m. January 2nd. If New Year's Day is on a Friday, Saturday, Sunday or Monday then between the hours of 5:00 a.m. December 31st and 9:00 p.m. the following Tuesday.
- For Easter, between the hours of 5:00 a.m. Thursday and 9:00 p.m. Monday.
- For Memorial Day, between the hours of 5:00 a.m. Friday and 9:00 p.m. Tuesday.
- For Independence Day, between the hours of 5:00 a.m. July 3rd and 9:00 p.m. July 5th. If Independence Day is on a Friday, Saturday, Sunday or Monday, then between the hours of 5:00 a.m. the Thursday before Independence Day and 9:00 p.m. the Tuesday after Independence Day.
- For Labor Day, between the hours of 5:00 a.m. Friday and 9:00 p.m. Tuesday.
- For Thanksgiving Day, between the hours of 5:00 a.m. Tuesday and 9:00 p.m. Monday.
- For Christmas, between the hours of 5:00 a.m. the Friday before the week of Christmas Day

and 9:00 p.m. the following Tuesday after the week of Christmas Day.

Liquidated Damages for Intermediate Contract Time #2 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on I-95, I-40, I-85, I-485, I-26 and US-70 from I-40 to NC-581, including all ramps and loops, are \$2,500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #3 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on US-70 east of NC-581, including all ramps and loops, are \$500.00 per hour or any portion thereof.

Liquidated Damages for Intermediate Contract Time #4 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on US-74, US-74 Bypass, & US-74 Alternate (Mecklenburg, Union, Gaston, Cleveland, and Brunswick Counties), including all ramps and loops, are \$500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #5 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on US-74 (other Counties), including all ramps and loops, are \$500.00 per hour or any portion thereof.

Liquidated Damages for Intermediate Contract Time #6 for the above lane narrowing, lane closure, holiday and special event time restrictions on all -Y- Line Roads with AADTs between 8,000 and 20,000 are \$500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #7 for the above lane narrowing, lane closure, holiday and special event time restrictions on all -Y- Line Roads with AADTs greater than 20,000, NC-146, and NC-280 are \$1250.00 per 15-minute period or any portion thereof.

F-1.1d. ITS Scope of Work

General

Design, furnish, and install new ITS Communications Fiber as described in this RFP within existing R/W limits. Integrate the new fiber with the existing ITS devices as well as any existing ITS fiber within the project limits. ITS devices include but are not limited to CCTV Cameras, Dynamic Message Signs and Traffic Signal Systems. Major items of work include, but are not limited to, the following:

- Approximately 600 Miles of ITS Trunk Line Fiber
- Approximately 600 Miles of ITS Device Line Fiber
- Drop Cables to Existing CCTV Cameras
- Drop Cables to Existing Dynamic Message Signs (“DMS”)
- Drop Cables to Existing Signal Systems
- Drop Cables to Weigh Stations
- Drop Cables to Rest Areas
- Drop Cable to Remote Weather Information System (“RWIS”)
- 35 ITS Fiber Hub Cabinets
- Cellular Connected Vehicle Site
- Junction boxes (Electrical and Oversized)
- Wood Poles
- Electrical service equipment

Furnish and install guardrail to protect ITS devices and ITS Fiber Hub Cabinets as required.

A pre-design meeting shall take place between the NCDOT ITS Section, the Design-Build Team, the Division 2, 3, 4, 5, 6, 8, 10, 12, 13 & 14 Traffic Engineers, the Regional ITS Engineers, STOC Engineer and any other pertinent NCDOT personnel before ITS designs begins. The pre-design meeting shall, at a minimum, address equipment types, intended placement locations and scheduled installation and removal of devices. ITS Plan submittals shall only be reviewed and accepted by the NCDOT ITS Section after this pre-design meeting.

Acceptance of plans does not relieve the Design-Build Team of any obligation to design and build a complete system that meets the functional requirements of the RFP. The Design-Build Team is solely responsible for the correctness and constructability of the designs meeting all applicable standards.

The Design-Build Team shall coordinate with the Division Traffic Engineer, the Regional Traffic Engineer, the ITS Design Unit and the STOC throughout the project duration.

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.

Furnish and install all equipment and perform all work in accordance with ITUT, IEEE and TIA standards as well as in accordance with the relevant ITS Project Special Provisions found elsewhere in this RFP, the 2018 NCDOT *Standard Specifications for Roads and Structures*, the 2018 NCDOT *Roadway Standard Drawings* and the *ITS & Signals Generic Project Special Provisions Version 18.3* or the latest version at the time of letting found at the following website:

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

Design Requirements

Communications

Design, furnish and install the field-to-center communication network using Fiber-optic cable. For all equipment not specified herein, provide product specifications for the Department’s review and approval prior to incorporation. Furnish and install all new field equipment within the project limits.

The Department will furnish all cellular modems used on the project. The Design Build Team shall request the modems through the Engineer at least eight (8) weeks prior to scheduled installation.

The MCAS property that lies between Holly Drive and Jackson Drive in Havelock must be avoided. The fiberoptic cable must be installed within NCDOT right-of-way in the grassy median between Mimosa Drive and US Highway 70 west, where there is an existing line of trees and power poles.

The conduit shall be placed at a location which will avoid conflicts with future roadway widening (8-lane typical), within Control-of-Access areas. All other conduit shall be placed within the existing right-of-way to the farthest, most outer edge of right-of-way, while being in compliance with all environmental permits and minimizing utility impacts to the greatest extent possible.

The DB Team shall place the conduit and trunk lines at all interchanges, up and down interchange ramps to avoid future relocations. Boring underneath overpass structures at interchanges will not be allowed.

NCDOT 144-Fiber Trunk Line

Design, furnish and install a minimum 144-fiber trunk line that runs between ITS hub cabinets. This trunk line is to run expressed between hub cabinets and should not be cut or spliced unless necessary for fiber installation purposes. All 144 fibers are to be terminated in a fiber-optic interconnect center in each hub cabinet and jumpered through. Label this 144-fiber cable and its interconnect centers “NCDOT ITS TRUNK LINE” in all junction boxes and hub cabinets. Store 50 feet of spare Trunk cable in each junction box and hub cabinet. **ITS devices should NOT be spliced into this 144-fiber trunk line.** See the ITS Device Line concept drawing included in this RFP for additional information.

NCDOT 144-Fiber ITS Device Line

Design, furnish and install a minimum separate 144-fiber ITS device line that runs between hub cabinets and connects all ITS devices between the hub cabinets back to the nearest hub cabinet. These devices are listed later in this RFP. All 144 fibers are to be terminated in a fiber-optic interconnect center in each hub cabinet and jumpered through. Label this 144-fiber cable and its interconnect centers “NCDOT ITS DEVICE LINE” in all junction boxes and hub cabinets. Store 50 feet of spare Trunk cable in each junction box and hub cabinet. See the ITS Device Line concept drawing included in this RFP for additional information. Device line buffer tubes should be assigned as follows:

- CCTV, DMS, Signal Systems and other NCDOT facilities starting in Blue Buffer Tube
- Rest Areas in the Aqua buffer tube
- Weigh Stations in the Rose buffer tube

NCDOT 12-Fiber Drop Cable

Design, furnish and install 12-fiber drop cables from the ITS Device Line fiber to each ITS device in the project limits. Drop cables should be spliced into the ITS Device Line with a splice enclosure and terminated in the ITS device cabinet with a fiber-optic interconnect center. Drop Cables for devices that are co-located with or within 100 feet of a hub cabinet may be terminated in a fiber optic interconnect center in the hub cabinet. Label these 12 fiber drop cables and their interconnect centers “<DEVICE ID> DROP CABLE” in all junction boxes and hub cabinets. Store 50 feet of spare Drop cable in each junction box and ITS device cabinet.

NCDOT ITS Fiber Hub Cabinet

Design, furnish and install ITS Fiber Hub Cabinets as specified in the project special provisions and detail drawings included with this RFP. Hub cabinets should be climate controlled NEMA 4, 340 ITS cabinets adequately sized to accommodate all electrical equipment and communications equipment including but not limited to four (4) minimum 144-fiber interconnect centers, one (1) Ethernet hub switch, one (1) Uninterruptable Power Supplies (“UPS”) and the cabinet air conditioning system. Approximate hub cabinet locations are as follows:

- NC/VA state line – HUB 13
- I-95 exit 173 – HUB 12
- I-95 exit 160 – HUB 11
- I-95 exit 138 (US 64) – HUB 10
- I-95 exit 119 (US 265/I-795) – HUB 9
- I-95 south of exit 97 (US 70) – HUB 8
- I-95 exit 81 (I-40) – HUB 7
- I-95 exit 73 (US 421) – HUB 6
- I-95 exit 56 (Bus 95) – HUB 5
- I-95 exit 38 (Future I-295) – HUB 4
- I-95 exit 22 – HUB 3
- I-95 exit 13 (I-74) – HUB 2
- NC/SC state line – HUB 1
- US 70 Bypass at I-40 and NC 540 – HUB 14
- US 70 at I-795 (Goldsboro) – HUB 15
- US 70 at Harvey Parkway (Kinston) – HUB 16
- US 70 at Trenton Rd. (MM 400) – HUB 17
- US 70 at S. Glenburnie Rd. (New Bern) – HUB 18
- US 70 at Slocum Rd. (Havelock) – HUB 19
- US 70 at NC Port (Morehead City, North side of road just before the Newport River Bridge) – HUB 20
- US 74 at I-140 (Wilmington) – HUB 21
- US 74 at NC 211 (Bolton) – HUB 22
- US 74 at US 76 – HUB 23
- I-74 at US 501 (Laurinburg) – HUB 24
- US 74 at US 1 (Rockingham) – HUB 25
- US 74 at US 52 (Wadesboro) – HUB 26
- US 74 at US 74 BYP (Monroe Expy East) – HUB 27

- I-485 at I-77 (Existing Node 20*) – HUB 29
 - I-485 3300' North of I-85 South Interchange (Existing NCDOT Hub 6) – HUB 30
 - I-85 at US 74 Interchange – HUB 31
 - US 74 at US 74 BYPASS (Shelby) – HUB 32
 - US 74 at US 221 (Forest City) – HUB 33
 - US 74 at I-26 Interchange – HUB 34
 - I-26 at US 64 (Hendersonville) – HUB 35
 - I-26 at I-40 Interchange (Existing NCDOT Splice Cabinet*) – HUB 36
- * - Existing hub to be replaced per this Scope of Work.

HUB numbers are for the purposes of this project only. Do not mark the HUB cabinets with these numbers. HUB 28 was intentionally skipped in the numbering.

HUB 8 at I-95 exit 97 (US 70) will have 2 backup ISP circuits installed by DIT. The design build team shall coordinate with the engineer and DIT to facilitate the installation of these circuits during the installation of this hub cabinet.

HUBs 1, 13, 20, 21, 27, 29 & 36 will be the end points of the fiber at these ends of the project. The fiber trunk lines will terminate in these hub cabinets in fiber-optic interconnect centers. The design-build team shall loop all fibers of each trunk cable back with jumpers in these interconnect centers in a manner that creates a continuous loop. (Example: Blue buffer tube, loop fiber 1 back to fiber 3, fiber 2 back to fiber 4, etc.)

Existing ITS Integration Locations

US 70 Bypass at I-40

The ITS hub cabinet at US 70 Bypass and I-40 will connect to the 144-fiber ITS cables along I-40 (running north and south installed under I-5111) and to existing 144-fiber ITS cable along NC-540 (running west, installed under R-2828). The design build team shall extend these 3 cables into the new hub cabinet along with the two new 144-fiber Trunk lines installed under this project and terminate all 144 fibers of each cable in a fiber-optic interconnect center. Jumper the two 144-fiber I-40 cables through and loop the two new 144-fiber cables back with jumpers.

U-5713/R-5777A&B

U-5713/R-5777A&B will install 4x two-inch conduits and 1x 144-fiber cable along US 70 in James City from Thurman Rd. to north of Elder St. The design-build team may use this existing conduit and fiber as the ITS Device Line. The design build team shall be responsible for ensuring conduit and fiber are usable and shall be responsible for any repairs needed to use this fiber. The design-build team shall resplice the existing cable as needed to follow the same configuration as the rest of the fiber installed under this project.

US 74 at I-140

The Design-Build team shall install new HUB 21 at the US 74 & I-140 interchange. Route the Existing 72-fiber cable running both directions along I-140 and the existing drop cables into the new hub cabinet and terminate all fibers of each cable in separate interconnect centers.

I-95

US 74 fiber will tie into the I-95 fiber at HUB 2.

HUB 29 (Existing Node 20)

The Design-Build team shall replace existing Node 20 at I-485 and I-77 with new INFRA HUB 29. Route the 144-fiber NCDOT cable from the east and the 12-fiber NCTA drop cable (both installed under I-5507) as well as the two new 144-fiber cables from the west into this hub cabinet. Terminate all fibers of each cable in separate interconnect centers and jumper them through.

HUB 30 (Existing HUB 6)

The Design-Build team shall route all four 144-fiber cables, two from I-85 to the west and two from I-485 to the south, into existing NCDOT HUB 6 roughly 3300 feet north of the I-85/I-485 interchange. Terminate all fibers of all four cables in separate interconnect centers in the existing racks and jumper them through.

Forest City HUB Cabinet

The Design-Build team shall run a 48-fiber cable in a separate conduit from new HUB 33 to the DIT Data Center at 1371 Old Caroleen Rd Forest City, NC 28043. Terminate all 48 fibers in an interconnect center in HUB 33 and in the existing racks in the Data Center. Coordinate with DIT to identify building entrance and existing rack location for the fiber.

HUB 36

The design-Build Team shall replace the existing splice cabinet located at the I-26 & I-40 interchange (installed under I-4700) with a new INFRA hub cabinet. The design build team shall maintain all existing communications equipment located in this cabinet.

Hub Ethernet Switch

Hub switches shall be installed in each hub cabinet according to the Project Special Provisions and detail drawings included with this RFP. Hub switches shall be procured, programmed and installed by the DIT. Contact the Engineer to request the hub switches from DIT 4 weeks in advance of installation. Allow one week for DIT to install each hub switch and limit requests to no more than 3 hub switches at a time unless otherwise instructed by the engineer or DIT.

Field Ethernet Edge Switch

Ethernet edge switches will be furnished, installed and programmed by the design build team. DIT will provide the edge switch programming information to the Design build team. Design build team will provide Ruggedcom model RS900G or Comnet model CNGE11FX3TX8MS edge switches with minimum 2 100/1000 Base X fiber-optic ports and 4 copper RJ45 ports.

Ensure that all fiber-optic ports operate at 1310 or 1550 nanometers in single mode. Design all SFP ranges according to the actual distance between devices in the field. Provide Type LC connectors for the optical ports. Do not use mechanical transfer registered jack (MTRJ) type connectors. Ensure that each optical port consists of a pair of fibers; one fiber will transmit (TX)

data and one fiber will receive (RX) data. Ensure that the optical ports have an optical power budget of at least 15 dB. NCDOT utilizes a “2-fibers in 2-fibers out” network design from device to device.

Ensure all copper ports are RJ-45 and auto-negotiate speed (i.e., 10/100/1000 Base) and duplex (i.e., full or half). Ensure that all are compliant with the IEEE 802.3 standard pinouts..

CCTV Cameras

Design, furnish and install fiber-optic drop cables, fiber-optic interconnect centers and field ethernet switches to the existing CCTV locations listed below.

- I-95 Exit or Mile Marker near:

180 (Analog)	73 (I-5986B)
173 (Analog)	Exit 72 (I-5986B) *
171 (Analog)	71 (Analog)
168 (Analog)	70 (I-5986B)
160 (Analog)	MM 68 on DMS (I-5986A)
154 (Analog)	65 (I-5986A)
150 (Analog) on DMS	MM 64 on DMS (I-5986A)
145 (Analog)	61 (I-5986A)
141 (Analog) Solar	MM 61 on DMS (I-5986A)
138 (Analog) Solar	MM 60 (I-5986A)
132 (Analog) Solar	MM 59 on DMS (I-5986A)
127 (Analog)	58 (I-5896A)
121 (Analog)	MM 58 on DMS (I-5986A)
119 (Analog) *	56 (I-5986A)
116 (Analog)	55 (I-5986B)
107 (Analog)	52 (Analog) -Critical-
102 (Analog)	49 (Analog)
97 (Analog)	46 (2 CCTV locations) (Analog) *
95 (Analog)	41 (I-5987)
90 (Analog)	40 (I-5987)
87 (Analog)	MM 37 (I-5987)
81 (2 CCTV locations)(I-5986B) * - Critical-	MM 34 (I-5987)
79 (I-5986B) *	33 (I-5987)
MM 78 (I-5986B)	31 (I-5987) (2 CCTV locations)
77 (I-5986B)	30 (I-5987)
MM 76 (I-5986B)	28 (I-5987)
75 (I-5986B)	25 (I-5987)
MM 74 (I-5986B)	MM 24 (I-5987)MM 23 (I-5987)
	22 (I-5987)
	21 on DMS (I-5987)
	20 (I-5987)
	19 (I-6064)
	17 (I-6064)
	13 (I-6064) (2 CCTV locations)

- US 70 Exit or Mile Marker:

MM 319 (Analog)	70 Bypass exit 361 (Digital)
MM 320 (Analog)	70 Bypass exit 364 (Digital)
MM 323 (Analog)	70 Bypass exit 370 (Digital) (Solar)
MM 325 (Analog)	MM 416 (Analog)
70 Bypass exit 350 (Digital) (Solar)	US 70 at US 17 (Analog) (Solar)
70 Bypass exit 351 (Digital)	US 70 at Williams Rd. (Digital)(R-5777A&B)
70 Bypass exit 355 (Digital) (Solar)	US 70 at Grantham Rd. (Digital) (R-5777A&B)
70 Bypass exit 356 (Digital) (Solar)	US 70 at Taberna Way. (Digital) (R-5777A&B)
70 Bypass exit 358 (Digital)	US 70 at Thurman Rd. (Digital) (R-5777A&B)
	US 70 at NC 24 (Analog)
	US 70 at Atlantic Beach Bridge (Analog)

- US 70 Exit or Mile Marker:

US 74 at I-140	US 74 at Exit 170
US 74 at US 701	I-26 at MM 64.5
US 74 West of MM 225 (R-5797)	I-26 at Exit 59 (Green River Bridge Project)
I-74 at Exit 213	I-26 West of Green River Bridge (Green River Bridge Project)
I-74 at Exit 210	I-26 at US 25 (Green River Bridge Project)
I-74 at Exit 203	I-26 at Exit 53 (I-4400)
I-74 at Exit 200	I-26 at Tracy Grove Rd. (I-4400)
I-74 at Exit 194	I-26 at Exit 49 (I-4400)
I-74 at MM 192	I-26 North of Clear Creek Rd. (I-4400)
I-485 at NC-49/Tryon St.	I-26 North of Brookside Camp Rd. (I-4400)
I-485 at Exit 3	I-26 near Naples Rd. (I-4400)
I-485 at Exit 4	I-26 at Exit 44 (I-4400)
I-485 at Exit 6	I-26 at MM 41 (Weigh Station)(I-4400)
I-485 at MM 6	I-26 at Exit 40 (I-4700)
I-485 at MM 7	I-26 at Glen Bridge Rd. (I-4700)
I-485 at Exit 9	I-26 at Exit 37 (I-4700)
I-485 at Exit 10	I-26 at Blue Ridge Parkway (I-4700)
I-85 Exit 29	I-26 at MM 35 (I-4700)
I-85 at MM 28	I-26 at Ferry Rd. (I-4700)
I-85 at exit 27	I-26 at Exit 33 (I-4700)
I-85 at exit 26	
I-85 at MM 24	
I-85 at Exit 23	
I-85 at Exit 22	
I-85 at Exit 21	
I-85 at Exit 20	

I-85 at Exit 19 I-85 at Exit 17 I-85 at Exit 14 I-85 at Exit 13	I-26 at MM 32
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Assume all US 74 corridor CCTVs not being installed by a current project are Analog .

Replace all existing analog cameras listed above with new digital cameras in accordance with the Project Special Provisions included with this RFP. Return all removed equipment to the engineer.

Camera locations with a project number denoted (I-5986A & B, I-5987A & B, I-6064) are to be installed or replaced as part of those projects. The design build team will be responsible for coordinating with those projects on installing fiber drops and ethernet edge switches once the devices are installed.

Install a field ethernet edge switch in all existing CCTV cabinets listed above. CCTVs that are mounted on a DMS structure may share a switch and cabinet with the DMS.

The list above is as accurate as possible as of the date of this RFP. Any CCTV upgrades, Drop Cables or Ethernet Edge Switches needed shall be provided at no additional cost for up to 10 additional CCTV cameras.

For the existing solar sites listed above replace the existing solar assembly with all new hardware in accordance with the Project special provisions included with this RFP. Return the existing solar assembly equipment to the engineer. Existing equipment cabinets, solar mounting brackets and battery cabinets may be reused with the approval of the engineer. Comply with the National Electrical Code (“NEC”), the National Electrical Safety Code (“NESC”), the 2018 NCDOT *Standard Specification for Roads and Structures*, the Project Special Provisions, and all local ordinances.

Design, furnish and install new CCTV camera assemblies, equipment cabinets, electrical services, solar power assemblies, wood poles, fiber-optic interconnect centers, Ethernet edge switches and fiber optic drop cables at the following locations:

- I-95 Exit:

176	38 (2 CCTV locations) Solar
106	22
105	10
101	7 Solar
98 Solar	2
97	1
44	

- US 70:

US 70 Bypass at I-795 Solar Exit 372 US 70 at Washington St. US 70 at NC-148 Solar US 70 at NC 58	Exit 409 Exit 411 Solar US 70 at S Glenburnie Rd. US 70 at Old Airport Rd.
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- US 74:

US 74 at NC 87 US 74 at Exit 258 (NC 211) US 74 at Exit 244 (BUS 74) US 74 at Exit 233 (NC 410) US 74 at Exit 228 (NC 242) I-74/US 74 at Exit 311 (US 1) US 74 at Exit 306 (US 74 BUS) US 74 at Pee Dee River (East side) US 74 at Pee Dee River (West Side) I-85 at MM 11.5 (Weigh Station) I-85 at Exit 10A I-85 at Exit 10B	US 74 at Williams/Harmon Rd. US 74 Bypass at Exit 199 (NC 226) US 74 Bypass at Exit 197 (Washburn Switch Rd.) US 74 at US 74 Bypass (West) US 74 at Exit 193 US 74 at US074 BUS (Mooresboro) US 74 West of Exit 163 (In Curve) US 74 at Exit 161 I-26 at MM 63.5 I-26 at MM 62 I-26 at MM 60
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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. Furnish site surveys, including but not limited to bucket truck surveys or drone surveys, to ensure camera coverage areas are acceptable.

Furnish and install new electrical service equipment at all new CCTV locations. Install solar power assembly equipment at the sites identified above as “solar”. New solar CCTV locations do not require a UPS in the cabinet. Comply with the NEC, the NESC, the 2018 NCDOT *Standard Specification for Roads and Structures*, the Project Special Provisions, and all local ordinances. All work involving electrical service shall be coordinated with the appropriate utility company and the Engineer.

For new CCTV camera sites listed as “2 CCTV locations” or existing CCTV camera sites where a second camera is being installed the design-build team shall install these new cameras on separate poles with separate cabinets in locations that give the greatest combined view of the interchange or location between all cameras at the site.

The Design-Build team shall maintain CCTV communications with existing cell modems (or replacement cell modems supplied by the department) until they are ready to be switched over to the fiber network and communicate with the STOC via fiber. If a replacement cell modem is needed allow 8 weeks lead time for the department to supply the modem.

DMS

Design, furnish and install fiber-optic drop cables, fiber-optic interconnect centers and field ethernet switches to the existing DMS locations listed below.

I-95 DMS Locations:	US 70 DMS Locations:	US 74 DMS Locations:
<ul style="list-style-type: none"> • MM 177 • MM 175 • MM 174 • MM 172 • MM 157.5 • MM 150 • MM 142 • MM 134 • MM 124.5 • MM 114.5 • MM 102 • MM 101 • MM 92 -Critical- • MM 85 -Critical- • MM 78 (Dual DMS) (I-5986B) -Critical- • MM 71 • MM 68 (I-5986A) • MM 64 (I-5986A) • MM 61 (I-5986A) -Critical- • MM 59 (I-5986A) • MM 58 (I-5986A) • MM 53 • MM 49 • MM 44 • MM 38 • MM 34 • MM 31 • MM 27 • MM 21 (I-6064) (Dual DMS) 	<ul style="list-style-type: none"> • MM 319 • MM 322 • MM 323 • MM 328 -Critical- • MM 349.5 • MM 352.5 • MM 358 • MM 372 • MM 416 • Front Street SB at US 17/US 70 • MM 418 -Critical- 	<ul style="list-style-type: none"> • US 74 West of Malmo Loop Rd. (dual DMS) • US 74 WB MM 365.5 • US 74 West of MM 225 (2 DMS locations) (R-5797) • I-74 WB MM 208 • I-74 WB MM 203 • I-74 EB MM 198 • I-74 EB MM 191 • US 74 East of Exit 273

<ul style="list-style-type: none"> • MM 16 (I-6064) • MM 9 -Critical- 		
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Install a field ethernet edge switch in all existing DMS cabinets listed above that do not already have one in accordance with the Project Special Provisions included with this RFP. Return all removed equipment to the engineer.

DMS locations with a project number denoted (I-5986A & B) are to be installed or replaced as part of those projects. The design build team will be responsible for coordinating with those projects on installing fiber drops and ethernet edge switches once the devices are installed.

The list above is as accurate as possible as of the date of this RFP. Any Drop Cables or Ethernet Edge Switches needed shall be provided at no additional cost for up to 4 additional DMS sites.

Signal Systems

Design, furnish and install fiber-optic drop cables to the existing closed loop signal systems listed below. Terminate the drop cable in a fiber-optic interconnect center and install a field ethernet switch in the closest signal cabinet to the I-95, US 70, or U.S. 74 trunk lines. Signal inventory numbers listed are potential closest cabinets. DO NOT connect the ethernet switch to the signal controller. Upon termination of the fiber-optic drop cable in the signal cabinet and installation of the edge switch, no further work will be required.

<p>I-95 Signal Systems:</p> <ul style="list-style-type: none"> • D06-18_Lumberton 06-0344, 06-0345 • D04-13_Roanoke Rapids 04-1176, 04-1177 • D04-19_Selma 04-0962, 04-0562 	<p>US 70 Signal Systems:</p> <ul style="list-style-type: none"> • D02-01_Havelock 02-0563 • D02-04_Newport 02-0305 • D02-08_James City 02-0197*, 02-0914* 	<p>US 74 Signal Systems:</p> <ul style="list-style-type: none"> • D03-34 Malmo 03-1070, 03-1076 • 03-0170 Isolated Signal • D06-06 Lumberton 06-1262, 06-1263 • D08-01 Laurinburg
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<ul style="list-style-type: none"> • D04-20_Benson 04-0209, 04-0218 • D04-07_Smithfield 04-0804 • D04-21_Kenly 04-0224 • D04-22_Roanoke Rapids 04-0364, 04-0365 • D06-02_Dunn 06-0762, 06-0766 • D06-17_Lumberton 06-0375, 06-0531 	<ul style="list-style-type: none"> • D02-11_Morehead City 02-0252 • D02-12_Morehead City 02-0149 • D02-13_Morehead City 02-0491 • D02-14_New Bern 02-0428, 02-0625 • D02-15_New Bern 02-0356, 02-0775 • D02-22-TBS_New Bern 02-0767, 02-0766 	<ul style="list-style-type: none"> 08-0392 • 08-0867 Isolated Signal • 08-0216 Isolated Signal • D10-37 Wadesboro 10-0371 • D10-35 Marshville 10-1683 • D12-09 Belmont 12-0158, 12-0985 • D14-08_Flat Rock 14-0932 • D14-01_Hendersonville 14-0736 • D14-05_Fletcher 14-0901 • D13-06_Ashville 13-0814 • D13-02_Ashville 13-0646
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* Installed under R-5777A&B projects, tie both signals into the device trunk line.

The list above is as accurate as possible as of the date of this RFP. Any Drop Cables or Ethernet Edge Switches needed shall be provided at no additional cost for up to 10 additional Signal locations.

Cellular Connected Vehicle Site

Design, furnish and install a Cellular Connected Vehicle site at the locations listed below in accordance with the functional requirements listed below. Design, furnish and install a fiber-optic drop cable and field ethernet switch at this site for communications. DO NOT connect the CV system to the edge switch unless instructed to by the Engineer and DIT. The Design-build team shall provide four (4) training sessions for up to 15 people each on the setup, programming and operation of the connected vehicle system.

- I-95 at I-795
- I-95 at US 70
- I-95 at I-40
- US 70 Bypass at I-40
- US 70 at I-795

The Connected Vehicle (“CV”) System shall have the following minimum requirements:

- a. The system shall provide CV applications to mobile phones via cellular communications.

- b. The system shall provide TIMs messages to mobile phones with the proper application open and running via a cloud-based system.
- c. The system shall support MAP files that determine the approaches and individual lanes and in turn provide TIMs Messages. An approaching vehicle should only receive the messages that relate to their approach or lane.
- d. The system shall use the GPS position of the vehicle/smart phone to determine when to provide the TIMs information.
- e. A web-based configuration utility for easy editing of the MAP information and programing of TIMs messages that is workable on any modern web browser.
- f. The CV system must be able to be accessed and programmed remotely.
- g. The CV TIMs messages shall be programmable, customizable and provide audible alerts for the end users.
- h. The CV system setup shall require username and password to log on.
- i. The CV system should have the latest authentication and protection measurements to secure public safety, privacy and the integrity of data/information.
- j. The CV system shall have policies for accessing and sharing data, measurements to protect Data Privacy, security and Intellectual Property.
- k. The CV System shall meet all current FCC requirements and licenses.
- l. The CV system shall meet all applicable requirements of USDOT RSU Standard 4.1 and NCTIP 1218 v01. The RSU shall be certified by OmniAir Consortium.
<https://omniair.org/>
- m. The hardware must be field hardened and contained in a NEMA 4X cabinet properly sized for all CV, power and communications equipment (may be located in existing equipment cabinet as long as it does not affect the operation of the existing equipment).Hardware and cabinet should be mounted on a fifty-foot (50') wood pole. Pole and cabinet installation, power and grounding requirements shall follow the same NCDOT requirements as CCTV cameras.
- n. The hardware must be capable of being upgraded to support the future 5G cellular communications.
- o. Issue real time alerts via SMS and email to the appropriate response personnel immediately when a fault occurs.
- p. The field device must be capable of receiving software and security updates remotely without having to physically go to the field devices.
- q. Cellular connectivity for the system should be included with the hardware for a minimum of 5 years.
- r. The hardware shall be under warranty for the same period of time as the cellular connectivity mentioned above
- s. The CV System should be easy to maintain, replace and have continued technical support.

- t. The “over the air” updates shall have the ability to add new connected vehicle functionality and keep the units up to date within SAE J2735 standards to support future connected vehicle communication protocols.
- u. The CV System shall support the following minimum applications:

Minimum Requirements:

1. Roadside Unit (“RSU”) to Phone Applications
2. RSU to Vehicle Applications
3. Visual display and audible alerts to users through the mobile application
4. Virtual Wrong Way detection
5. DMS Annunciation
6. Congestion Alerts
7. Accident/Incident Alerts
8. Work Zone Alert

The Design-Build team shall demonstrate each of these applications as part of the testing and acceptance of the CV system.

The CV system must be submitted to the Department for review and approval before it can be installed.

Remote Weather Information System

Design, furnish and install a fiber-optic drop cable to the existing RWIS listed below. Terminate the drop cable in a fiber-optic interconnect center and install a field ethernet switch in the device equipment cabinet. DO NOT connect the field ethernet switch to any existing communications equipment in the cabinet.

- I-95 near MM 174.5 – Roanoke River bridge.

Traffic Count Station

Design, furnish and install a fiber-optic drop cable to the existing Traffic Count Station listed below. Terminate the drop cable in a fiber-optic interconnect center and install a field ethernet switch in the device equipment cabinet. DO NOT connect the field ethernet switch to any existing communications equipment in the cabinet.

- I-95 North near MM 86

Weigh Stations & Rest Areas

Design, furnish and install fiber-optic drop cables to the Weigh Stations and Rest Areas listed below. Terminate the drop cable in a new fiber-optic patch panel in the existing network racks at each weigh station and install a new network rack at each Rest Area. DO NOT connect the patch panel to any existing communications equipment in the Weigh Station or Rest Area. For Rest Areas that do

not have an existing network rack work with the Authority having jurisdiction over those premises to identify a pathway into the facilities to terminate the fiber-optic drop cable. Termination of the fiber-cable drop cable shall be in fiber-optic interconnect center in an equipment rack or enclosure approved by the engineer. Upon terminating the drop cable in the appropriate location, no further work will be required.

All work associated with adding conduit and piping into the Weigh Stations and/or Rest Stop facilities shall adhere to NEC and NESC codes and all local jurisdictional work requirements and be subject to inspections by the Authority have jurisdictional control.

<ul style="list-style-type: none"> • I-95 South Bound MM 181 • I-95 North and South Bound MM 142 • I-95 North and South Bound MM 99 • I-95 North and South Bound MM 48 • I-95 North Bound MM 5 • I-26 East and West Bound MM 41.5 	Weigh Stations <ul style="list-style-type: none"> • I-95 North and South Bound MM 151 • I-95 North and South Bound MM 24 • I-85 North and South Bound MM28 • I-85 North Bound MM 12 • I-26 North and South Bound MM 41
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Materials & Construction

Furnish and install new materials and hardware unless stated otherwise elsewhere in this RFP. Adhere to the requirements of the ITUT, IEEE and TIA standards as well as the 2018 NCDOT *Standard Specifications for Roads and Structures*, the 2018 NCDOT *Roadway Standard Drawings*, the *ITS & Signals Generic Project Special Provisions Version 18.3* or latest version at time of letting and the project special provisions included with the RFP.

CCTV Cameras

Install each stand-alone CCTV camera on a 60-foot Class 3 wood pole. Install CCTV equipment in a 336 equipment cabinet mounted on the pole. Install the following minimum equipment in each CCTV equipment cabinet:

- Power equipment including power supplies, circuit breakers, surge protectors, and other related materials.
- New solar assembly at existing and new CCTV locations identified above.
- Ethernet Edge Switch
- Fiber-optic Interconnect center with a 20’ slack loop of spare drop cable.

Perform all work in accordance with the applicable Project Special Provision found elsewhere in this RFP, and other standards listed elsewhere in this RFP.

Interconnect center

Conduit

• **Power Conduit**

Furnish and install conduit (for power) and all necessary hardware by trenching, plowing or directional drilling in accordance with Section 1715 of the 2018 NCDOT *Standard Specifications for Roads and Structures* for installing the power service to the ITS devices. Conduit shall not be placed in the median or under the roadway, except for lateral traverse

crossings. (Reference the Electrical Service Section below)

- **Communications Conduit**

Main Trunk Line Conduit – Furnish and install:

- Two (2) – 1.25-inch conduits for NCDOT communications trunk lines.
 - One Blue conduit for the minimum 144-fiber ITS Trunk Line
 - One Orange conduit for the minimum 144-fiber ITS Device Line
- Minimum One (1) – 1.25-inch conduit for possible future commercialization.
 - One Green conduit with pull tape.

Drop Cable Conduit – Furnish and Install

- Two (2) 1.25-inch conduits for NCDOT drop cables passing under the roadway
- One (1) 1.25-inch conduit for NCDOT drop cables not passing under the roadway
- Drop cable conduits shall be White.

Furnish and install conduit and all necessary hardware by trenching, plowing or directional drilling in accordance with the Project Special Provisions included with this RFP for installing fiber-optic conduit to the ITS devices. Conduit shall not be placed in the median or under the roadway, except for perpendicular crossings. Seal all conduits with mechanical sealing devices as described in the Project Special Provisions included with the RFP.

Bundled 1.25-inch conduits are allowed for NCDOT use as long as they meet all specifications and requirements stated in this RFP.

Split NCDOT 1.25” conduit and any spare/commercialization conduit into separate junction boxes at the top of interchange ramps on one side of the crossing street. All conduits may share junction boxes between interchanges.

The Developer shall be responsible for providing 811 services for newly constructed segments of infrastructure until NCDOT has accepted the infrastructure.. The Developer will be responsible for providing NC 811 services for new construction infrastructure immediately following acceptance by NCDOT of construction segments as identified in the DB scope of work.

Junction Boxes

- **Electrical**

Furnish and install “Tier 22” junction boxes (pull boxes) for electrical services with all necessary hardware in accordance with Limited Access Junction Box specifications included with this RFP. Provide standard size junction boxes in accordance with Limited Access Junction Box specifications for electrical service. Electrical junction boxes within 6 feet of the meter base or the ITS device with should be protected with a concrete collar/skirt of 8 inch depth, 12 inches wide all around, and flush with the top surface. Electrical junction boxes between the meter base and the ITS device should be buried 6”- 8” below grade in accordance with the project special provisions included with this RFP. Install electrical junction boxes at maximum intervals of three hundred (300) feet or at locations where underground splicing is necessary. For concrete collar/skirt requirements reference the “Junction Box (Limited Access facilities)” Project Special Provisions and Junction Box detail drawings included with this RFP. Install locate balls and delineator markers at all electrical junction boxes in accordance with the special provisions included with this RFP.

DO NOT bury junction boxes until all appropriate inspections have been conducted.

Provide junction box covers with standard “Electric” logo, pull slots and stainless-steel pins.

- **Communications**

Furnish and install junction boxes (pull boxes) with all necessary hardware in accordance with the Project Special Provisions included with this RFP. Provide Tier 22 load rated junction boxes in accordance with Limited Access Junction Box specifications, with “mouse holes” to accommodate horizontal conduit entrances into the junction box for fiber installations. For communications junction boxes installed at the top of exit ramps or within 6 feet of an ITS device, install a concrete collar/skirt of 8-inch depth, 12 inches wide all around, and flush with the top surface grade. For concrete collar/skirt requirements reference the Project Special Provisions and Junction Box detail drawings included with this RFP. For communications junction boxes installed between interchanges and further than 6 feet from an ITS device bury the junction box 6”-8” below grade in accordance with the project special provisions included with the RFP. Install locate balls and delineator markers at all communications junction boxes in accordance with the special provisions included with this RFP.

DO NOT bury junction boxes until all appropriate inspections have been conducted.

Provide Tier 22 junction box covers with standard “NCDOT Fiber Optic” logo, pull slots and stainless-steel pins.

Space trunk line junction boxes roughly 1500 feet apart between interchanges.

Install communications junction boxes at the base of each ITS device pole/cabinet and at each hub cabinet within six feet.

Every junction box shall house 50 feet of spare cable for each NCDOT cable entering the junction box.

Every junction box with a splice enclosure shall house 50 feet of spare cable for each direction of the cables being spliced. (i.e. 50 feet of spare trunk line in each direction and 50 feet of spare of each drop cable)

Ground all tracer wires in junction boxes designated for communications fiber in accordance with the “Junction Boxes (Limited Access facilities)” PSP and details drawings included with this RFP.

Communications cables and power cables shall NOT share junction boxes.

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 60-foot CCTV Class 3 wood poles as defined in the ITS Project Special Provision.
- Use 40-foot Class 4 wood poles for approved applications.
- Use 6” x 6” x 8’ treated wood posts for underground electrical service structures.

Furnish and install related items of work including but not limited to risers with weatherhead or heat shrink tubing, Air terminals and all necessary hardware in accordance with Section 1720 of the 2018 NCDOT *Standard Specifications for Roads and Structures* and the Air Terminal and Lightning Protection System Project Special Provision included with this RFP.

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 service entrance equipment, service entrance conductors, feeder conductors, disconnects, 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*.

Electrical Services and Service Disconnects with regards to voltage drop calculations shall be rated to accommodate the following breaker sizes:

- CCTV = 15 AMPS
- DMS = 50 AMPS or 30 AMPS (dependent on the sign manufacturer) Calculations using actual equipment load amperage will not be allowed.

Generator Hookups

For devices listed above as “Critical” devices install an external generator connection port on the device cabinet exterior. Port should be designed and sized for the appropriate electrical requirements of the cabinet it is for. ALL hub cabinet locations are considered “Critical” other critical devices are noted in the lists earlier in this RFP. Supplying generators is not required as part of this project.

Other Codes and Standards

All ITS materials shall conform to the latest version of the applicable standards of the 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 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*.

Submittals

Submit a set of 60% preliminary plans by HUB to HUB segment, 90% unsealed set of project plans by HUB to HUB segment, including specifications for materials, catalog cuts, and installation and testing requirements for review. 60% and 90% submittals will have separate 10-day review periods by HUB to HUB segment submitted with no more than four (4) HUB to HUB segments submitted for review at once. The design build team shall submit one HUB to HUB segment for the initial 60% submittal so that common errors can be addressed to avoid repeating corrections across future submittals. Upon acceptance of the Department, provide a 100% set of sealed plans and specifications to the Department. No construction of the ITS devices and infrastructure shall begin until the Department has accepted the 100% sealed plans and specifications. Provide the Department 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/default.aspx>

Additional Requirements

For all ITS devices and components within the entire project limits, the Design-Build Team shall comply with the following requirements:

Maintenance and Repair

The Design-Build Team shall maintain and repair all ITS components within the DB 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.. The Design-Build Team shall be responsible for conducting 811 locates for newly constructed fiber until acceptance. 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 (“POR”) Documentation

Prepare and submit to the Department POR/As-built 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 11 x 17-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. GPS equipment able to obtain the coordinate data within these tolerances may be used. **This plan of record documentation shall be provided to both the Engineer and the NCDOT ITS Section.**

Systems Engineering Documentation

The Design-Build Team shall perform systems engineering to ensure consistency with the Statewide ITS Architecture and to ensure conformance with the requirements of 23 CFR 940.11. The Design-Build Team shall develop and submit to NCDOT the following systems engineering deliverables for review:

- e. A Systems Engineering Management Plan
- f. A Concept of Operations
- g. A requirement document that specifies system requirements, high level design, and detailed design requirements
- h. Development of test plans for unit/device testing, subsystem verification, system verification and validation.

Systems Engineering Documentation shall follow the same submittal review structure as detailed in the Submittals section above.

Integration

Upon completion of the ITS device installations, coordination with DIT to integrate all ITS devices with the NCDOT ITS network and verify accessibility of all devices at the STOC unless instructed otherwise by this RFP or by the Engineer.

Coordinate with DIT and the Engineer to modify, as necessary, the existing central hardware and software modules including but not limited to databases, to provide operators access to new devices through the operators' Graphical User Interface.

Testing

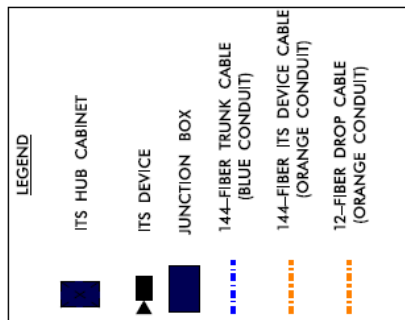
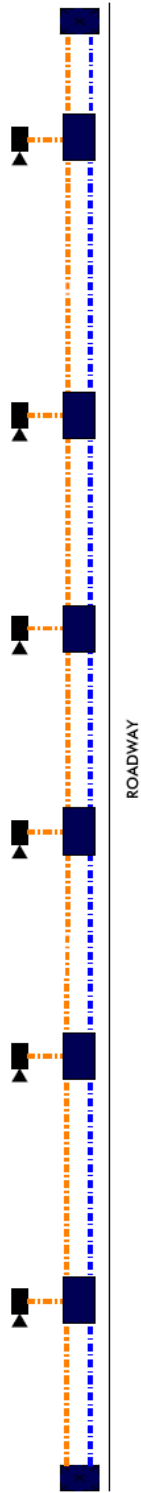
Develop unit and system test plans and procedures for each ITS device and all associated components, in accordance with the appropriate testing requirements found in the Project Special Provisions included with this RFP and submit to the Engineer for review and approval.

Upon completion of the ITS device installations, conduct unit and system 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 and system tests, submit the test reports along with the record of repairs and part replacements to the Engineer.

ITS DEVICE LINE CONCEPT DRAWINGS



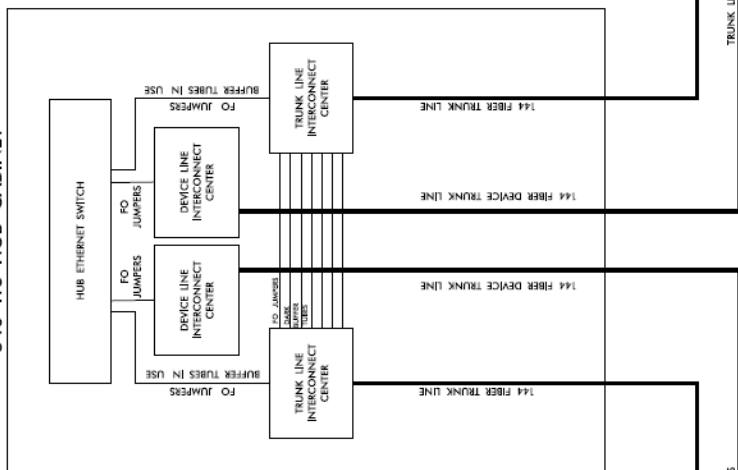
DEVICE LINE RUNS FULL DISTANCE BETWEEN 2 HUB CABINETS WITH DEVICES SPLICED IN AND CONNECTS TO BOTH HUB CABINETS FOR DEVICE COMMUNICATION REDUNDANCY.

TRUNK LINE RUNS FULL DISTANCE BETWEEN 2 HUB CABINETS WITH NO SPLICES AND CONNECTS TO BOTH HUB CABINETS FOR HUB TO HUB COMMUNICATIONS.

ITS HUB SPLICE / REGENERATION CABINET CONCEPT BLOCK DIAGRAM

"DRAWING IS CONCEPTUAL"
 SEE ITS SCORE CHARTWORK FOR BUFFER TUBE SPLICE ASSIGNMENTS
 AND HUB CABINET PHYSICAL LAYOUT DETAIL

340 ITS HUB CABINET



F-1.1e. Utilities Coordination Scope of Work

The Design-Build Team shall obtain the services of a Professional Services Firm (“PSF”) knowledgeable in the NCDOT Utility Coordination Process involved with utility relocation / installation and highway construction. The Design-Build Team shall be responsible for coordinating all utility relocations, removals, and / or adjustments where the Design-Build Team and utility owner, with concurrence from the Department, determine that such work is essential for highway safety and performance of the required highway construction. Coordination shall be for all utilities whether or not they are specifically identified in this Scope of Work and shall include any necessary utility agreements when applicable. NCDOT will be the approving authority for all utility agreements and utility plans.

The Design-Build will only be allowed direct contact with the utility owners when the aforementioned PSF is present. (Reference the *Individual Meeting with Proposers* Project Special Provision found elsewhere in this RFP)

In accordance with the requirements herein, the Design-Build Team shall relocate / coordinate the relocation of all existing facilities if they are in physical conflict with construction.

Project Details

The Design-Build Team shall be responsible for verifying the utility locations, type of facilities, and identifying the utility owners in order to coordinate the relocation of any utilities, known and unknown, in conflict with the project. The following utilities are known to be located within the project construction limits:

<u>Utility Owner</u>	<u>Utility Type</u>	<u>Cost Responsibility</u>
Varies	CATV	Design-Build Team
Varies	Gas (Distribution)	Design-Build Team
Varies	Gas (Transmission)	Design-Build Team
Varies	Power (Distribution)	Design-Build Team
Varies	Power (Transmission)	Design-Build Team
Varies	Telecommunications	Design-Build Team
Varies	Water and Sewer	Design-Build Team (NCDOT will obtain an agreement with Utility Owners allowing the Design-Build Team to work on their facilities)
Varies	Petroleum	Design-Build Team

Water and Sewer

If the Design-Build Team’s design and / or construction requires the relocation and / or encasement of existing water and / or sewer facilities, designs shall be coordinated with the NCDOT Utilities Unit. All costs associated with the design and construction for relocation and / or encasement of

these existing water and / or sewer facilities shall be the responsibility of the Design-Build Team and shall be included in the lump sum bid for the project. The Design-Build Team shall develop designs; prepare all plans for needed agreements and permits; submit permits directly to the agencies and obtain approval from the agencies. The Design-Build Team shall be responsible for all permit fees.

Designs shall be coordinated with the NCDOT Utilities Unit and the utility owners or their representatives. In .pdf format, the Design-Build Team shall electronically submit one half-size set and one full size set of utility construction drawings to the State Utilities Manager, via the Design-Build Unit, for further handling. Each set shall include a title sheet, plan sheets, profiles and special provisions, if required. Once accepted by the State Utilities Manager, the plans, with the appropriate agreement, will be sent to the utility owner for review and concurrence.

The relocation of all water and sewer facilities shall be done in accordance with the NCDOT Policies, as well as the latest water and sewer design requirements / specifications or each effected owner. In the event of conflicting design parameters in the requirements noted above, the proposed design shall adhere to the most conservative values. The materials and appurtenances proposed by the Design-Build Team shall require approval by both NCDOT and the aforementioned appropriate utility owner prior to installation.

Utility Relocation Plans

Excluding water and sewer conflicts, if the Design-Build Team's design and or construction create a utility conflict, the Design-Build Team shall request that the utility owner submit relocation plans (Highway Construction Plans to be provided by the Design-Build Team to utility owners) that show existing utilities and proposed utility relocations for approval by the NCDOT.

In .pdf format, the Design-Build Team shall electronically submit one half-size set and one full size set of the Utility Relocation Plans to the NCDOT State Utility Manager, via the Design-Build Unit, for review and approval. The Department shall approve the Utility Relocation Plans prior to any utility relocation work beginning. The Design-Build Team shall also be responsible for submitting the appropriate agreements to be used with the Utility Relocation Plans (See Agreements found elsewhere in this Scope of Work). After the review process is complete, the NCDOT Utilities Unit will submit an electronic copy of the authorization letter to the Design-Build Team. The NCDOT Utilities Unit will also submit an electronic copy of the approved Utility Relocation Plans, estimate and agreement to the Department's Resident Engineer. If the Utility Relocation Plans are approved subject to changes, it shall be the Design-Build Team's responsibility to coordinate these changes with the appropriate utility owner.

Cost Responsibility

The Design-Build Team shall be responsible for all costs associated with utility relocations resulting from the Design Build Team's methods of operation or sequence of work.

Compensable Interest

Typically, affidavits, recorded easements or NCDOT agreements can serve as evidence of prior rights. A compensable interest is identified as follows:

- (D) Existing or prior easement rights within the limits of the project, either by recorded right of

way or adverse possession (Utility occupying the same location for twenty (20) plus years outside the existing highway rights of way).

- (E) Entities covered under *General Statute 136-27.1* and *136-27.2*. Statute requires the NCDOT to pay the non-betterment cost for certain water, sewer and gas relocations.
- (F) Utilities that have a joint-use agreement that constitutes a compensable interest with entities that have existing or prior easements rights within the project limits.

Work Performed by Design-Build Team for Utility Owners

If the Design-Build Team elects to make arrangements with a utility owner for proposed utility construction not required herein, in which the utility owner shall be responsible for the costs of work to be performed by the Design-Build Team, the Design-Build Team shall be responsible for negotiating all costs associated with the proposed construction. Once the Design-Build Team and the utility owner agree on a plan and a lump sum estimated cost for the utility construction, the Design-Build Team shall electronically submit one half-size set and one full size set of the utility construction drawings, in .pdf format, to the State Utilities Manager, via the Design-Build Unit, for further handling. Each set shall include a title sheet, plan sheets, profiles and special provisions if required. Also, a letter from the utility owner agreeing to the plans and lump sum cost must accompany this package. The NCDOT will reimburse the Design-Build Team the estimated lump sum cost under a Supplemental Agreement. The necessary Utility Agreement to the utility owner for reimbursement shall be a two-party agreement between the NCDOT and the utility owner; and will be developed and executed by the Department.

If the Design-Build Team is requested, in writing, by a utility owner to relocate facilities not impacted by the project's construction, and / or upgrade or incorporate new facilities as part of the highway construction, designs shall be coordinated with the utility owner and the NCDOT Utilities Unit. The associated design and construction costs shall be negotiated and agreed upon between the Design-Build Team and the utility owner. The Design-Build Team shall develop designs; prepare all plans for needed agreements and permits; submit permits directly to the agencies and obtain approval from the agencies. The Design-Build Team shall be responsible for all permit fees.

Cable TV

The NCDOT will not permit CATV to place poles within the highway right of way but will allow down guys for their facilities within the highway right of way. Under most circumstances, the CATV Company will continue a joint-use attachment with the local Power and Telephone Company. If the CATV proposed relocation places buried facilities within the highway right of way then plans and encroachment agreements shall be required by the NCDOT.

Communication Cables / Electrical Services for Lighting, Traffic Signals and ITS Devices

Prior to establishing the location for new meter poles, the Design-Build Team shall coordinate with the local Power Distribution Company concerning accessibility of E/C service and safety in maintenance of the meter.

Prior to installation, the Design-Build Team shall provide plans for review and approval for all service taps that require a parallel installation within the control of access (“C/A”).

Parallel service installation within a C/A shall be buried.

The Design-Build Team shall be responsible for all coordination activities, including deposit fees, required for the utility company to provide service taps. Prior to the Design-Build Team developing the associated design and / or instructing the utility company to proceed with providing the service taps, the Design-Build Team shall obtain written approval of the service tap locations from the Resident Engineer.

Adjusting Existing Utilities due to Proposed Traffic Management Systems Fiber Optic Communications Cables

The Design-Build Team shall be responsible for all costs for coordinating and adjusting any utilities that conflict with any proposed communication cables.

Requirements for Attachments to Existing and / or Proposed Structures

The Design-Build Team shall avoid attachments to structures where feasible excluding required attachments as identified elsewhere in the RFP, Reference Structures Scope of Work. Attachments shall only be considered when other alternatives are cost prohibitive and / or are not feasible due to environmental or geographical features. All utility related attachments must be evaluated and approved by the State Utilities Manager, including any existing attachments to any structure(s) that require modification or replacement. Attachments shall be prohibited under the following criteria:

- (C) No attachments shall be allowed to cored-slab superstructures.
- (D) No attachments shall be allowed to curved bridges without the Engineer’s approval.

Attachments to structures, if approved by the State Utilities Manager, shall meet the following criteria:

- (C) No attachments shall be allowed below the bottom of the beams and / or girders.
- (D) Drilling of, or attachments to, beams and / or girders shall not be allowed. Attachments shall only be allowed to the backside of barrier unless otherwise approved.

Documentation of adverse conditions or cost estimates of all feasible alternatives shall be submitted to the NCDOT State Utilities Manager, via the Design-Build Unit, when seeking approval of a structure attachment. Cost estimates shall consider all costs involved with each alternative and impacts to the utility and the highway project as a whole.

General

The Design-Build Team shall not commence work at points where the highway construction operations are adjacent to utility facilities, until making arrangements with the utility owner to protect against damage that might result in expense, loss, disruption of service or other undue inconvenience to the public or utility owner. The Design-Build Team shall be responsible for damage to the existing or relocated utilities resulting from the Design-Build Team's operations. In the event of interruption of any utilities by the project construction, the Design-Build Team shall promptly notify the utility owner and cooperate with the utility owner in the prompt restoration of service.

The Design-Build Team shall accommodate utility adjustments, reconstruction, new installation and routine maintenance work that may be underway or take place during the progress of the contract.

If total property acquisition is unavoidable due to encroachment into wells and / or septic systems, the Design-Build Team shall investigate and determine if extending water and / or sewer lines to the affected property is cost effective. If the Department concurs with the determination that a utility extension is cost effective, the costs associated with the utility design and construction shall be addressed in accordance with Article 104-7 of the 2018 NCDOT *Standard Specifications for Roads and Structures*.

The Design-Build Team shall be required to use the guidelines as set forth in the following:

- (H) *NCDOT Utility Accommodation Manual (Expected January 2021)* will supersede the existing *NCDOT Utility Manual – Policies & Procedures for Accommodating Utilities on Highway Rights of Way* and the *NCDOT Utilities Policy Manual*. Reference the website noted below for the current version of the NCDOT utility manuals, and additional information on the transition to the new utility manuals shall be adhered to:

<https://connect.ncdot.gov/municipalities/Utilities/Pages/UtilitiesManuals.aspx>

- (I) *Federal Aid Policy Guide* – Subchapter G, Part 645, Subparts A & B
- (J) *Federal Highway Administration's Program Guide, Utility Adjustments & Accommodations on Federal Aid Highway Projects*
- (K) *NCDOT Construction Manual* Section 105-8
- (L) *NCDOT Right of Way Manual* – Chapter 16 Utility Relocations
- (M) *NCDEQ, Public Water Supply* – Rules governing public water supply
- (N) *NCDEQ, Division of Water Resources* – Title 15A – Environment and Natural Resources

Agreements

If a utility company can provide evidence of prior rights of way or a compensable interest in their facilities, the Design-Build Team shall coordinate the non-betterment utility relocation costs with the utility company and develop the Utility Relocation Agreement.

The NCDOT State Utilities Manager must execute approved agreements on Design-Build projects. The Utility Relocation Agreements (Cost Agreement) and Encroachment Agreements are available from the NCDOT Utilities Unit. Reference Pages 59 and 60 of the *NCDOT Utility Manual – Policies & Procedures for Accommodating Utilities on Highway Rights of Way* for the different types of Encroachment Agreements available for use.

The Design-Build Team shall submit all Utility Relocation Agreements, (“URAs”), all Utility Encroachment Agreements, and all supporting documents to the NCDOT State Utilities Manager, via the Design-Build Unit, in electronic format. Prior to submittal, all agreements shall be signed electronically by an authorized representative of the utility owner. These electronic agreement packets will be reviewed, approved and signed electronically by the NCDOT Utilities Manager, or designated representative, before being distributed to the field.

The Design-Build Team shall utilize the NCDOT Standard Utility Encroachment Agreements, as necessary, in relocating utilities. The encroachment agreements shall be used under the following conditions:

- (C) If a utility company is not occupying a valid right of way / compensable interest and the proposed relocation will place the relocated utilities within the existing or proposed highway right of way.
- (D) For **all** new utility installations not covered under a Utility Agreement and within the existing or proposed highway right of way. This includes all water, sewer and gas lines owned by entities covered under *General Statute 136-27.1* and *136-27.2*

F-1.1f. Erosion and Sediment Control Scope of Work

General

The NCDOT Roadside Environmental Unit (REU) shall review and accept all Erosion and Sedimentation Control Plans in accordance with NCDOT's delegation agreement with the North Carolina Sedimentation Control Commission including authority to (1) identify special needs for this project, including the acquisition of additional right-of-way; (2) mandate special details to be included in the design plans or special provisions; (3) conduct on site plan reviews for compliance and require design changes to accommodate field changes; (4) inspect all construction sites including waste and borrow pits and haul roads; and (5) issue violation notifications or cease and desist orders. The NCDOT REU will also retain authority in plan, detail, and special provision review and acceptance. Clearing & Grubbing, and any necessary Final Grade or Intermediate Release for Construction (RFC) Erosion Control Plans shall be submitted, accepted and distributed to all NCDOT personnel listed in the Design-Build Submittal Guidelines before **any** land disturbing activities, including C&G, can commence. If the Design-Build Team chooses to perform the work in discrete sections, then a complete set of Clearing & Grubbing and any necessary Final Grade RFC Erosion Control Plans shall be submitted, accepted, and distributed, as noted above, prior to land disturbing activities, including C&G, commencing in that section. No land disturbing activities, including C&G, shall occur in any location that does not have accepted Clearing & Grubbing and Final Grade RFC Erosion Control Plans. Refer to the most recent versions of the NCDOT *Erosion and Sediment Control Design and Construction Manual* and of the NCDEQ – *Erosion and Sediment Control Planning and Design Manual* for erosion control design guidelines not addressed in this Scope of Work.

Erosion and Sedimentation Control Design

Design Process and Requirements

Pre-Submittal Meeting

- A pre-submittal meeting shall take place between the NCDOT Roadside Environmental Unit Soil & Water Engineering Section, the Design-Build Team, and any other pertinent NCDOT personnel before any Erosion and Sedimentation Control Designs are submitted to NCDOT Roadside Environmental Unit. Erosion and Sedimentation Control Plan submittals shall only be reviewed and accepted by NCDOT Roadside Environmental Unit after the Erosion and Sedimentation Control Pre-Submittal Meeting. The Design-Build Team shall be required to submit a tentative Erosion and Sedimentation Control Plan submittal schedule at the pre-submittal meeting.
- At a minimum, the Design-Build Team shall bring one erosion control plan sheet with a Clearing & Grubbing erosion control design to the Erosion and Sedimentation Control Pre-Submittal Meeting.

Design and Plan Submittals

- All erosion and sediment control design shall be in accordance with North Carolina Design Standards in Sensitive Watersheds (DSSW) for areas within regions of regulated riparian buffers (Neuse River), High Quality Water Zones (within 1 (one) mile and draining to an EMC identified High Quality Water (575 feet for inland high quality water bodies in Carteret and Craven Counties)), Outstanding Resource Water, 303d listed stream for

turbidity impairment or identified primary nursery area (PNA) water body, within 0.5 (one-half) mile of a CA identified water body, and as required by permits.

- All jurisdictional streams within the project limits requiring DSSW shall be identified as ‘Environmentally Sensitive Areas’ on the Sediment and Erosion Control Plan.
- Plan submittals shall include all pertinent design information required for review, such as design calculations, drainage areas, etc. Within the entire project limits, provide disturbed and undisturbed drainage areas in MicroStation format for all phases.
- Plans shall address any environmental issues raised during the permitting process.
- The NCDOT Roadside Environmental Unit will provide a sample set of Erosion and Sedimentation Control Plans (including any special details or special provisions used by the NCDOT Roadside Environmental Unit) and MicroStation Erosion Control Workspace to the Design-Build Team for reference upon request.
- Temporary access and haul roads, other than public roads, constructed or used in connection with the project shall be considered a part of the project and addressed in the Erosion and Sedimentation Control Plans. Temporary access and haul roads located within the footprint and / or the right of way / easement corridor of the project shall be part of the highway Erosion and Sedimentation Control Plans. As needed, temporary access and haul roads associated with borrow pits and staging areas shall be included in the Reclamation Plan.
- The Design-Build Team shall allow sufficient time in the proposed schedule to address any comments to the Erosion and Sedimentation Control Plans, as deemed necessary by the NCDOT Roadside Environmental Unit.
- At any time requested by the Engineer or the NCDOT Roadside Environmental Unit, the Design-Build Team shall provide an updated version of the Erosion and Sedimentation Control Plans for distribution to all parties involved in the construction process.
- Once RFC Erosion and Sedimentation Control Plans are issued, any major design change or addition, any change that involves calculations, and any addition, deletion, or relocation of a sediment basin shall be submitted to the NCDOT Roadside Environmental Unit for review and acceptance. Minor changes such as moving silt fence, adding or moving temporary ditches (unless adding new runoff flow to a sediment basin), and adding or moving slope drains shall be reviewed by the Engineer in the field.
- The Design-Build Team’s erosion and sedimentation control designer shall submit design calculations, for the Department’s review and acceptance, for all modifications to the Erosion and Sedimentation Control Plans that result in dimension modifications and / or relocations, other than minor shifts to accurately place, to the devices noted below:
 - Riser Basin
 - Skimmer Basin and all devices with Skimmers
 - Temporary Rock Sediment Dam Type A
 - Temporary Rock Sediment Dam Type B
 - Temporary Rock Silt Check Type A
- All RFC Erosion and Sedimentation Control Plans, including any red line revisions, shall

be kept on site at all times throughout the duration of the project.

Clearing and Grubbing Phase Plans

The Design-Build Team shall submit an Erosion and Sediment Control (E&SC) plan for all work associated with the project, hereby referenced in this document as the Clearing and Grubbing (C&G) E&SC plan. The C&G plan shall be required for all construction activities and shall address both construction stormwater from disturbed area and stormwater drainage onto the disturbed portion of the project be designed to manage and provide treatment for stormwater using existing topography and drainage systems. Any planned changes to the existing topography or drainage systems for construction of this project shall be addressed in additional Final Phase or Intermediate phase E&SC plans sheets. The C&G plans may utilize typical ES&C plan designs and details for repetitive construction operations to minimize the number of individual E&SC plan sheets. Unique individual E&SC plan sheets shall be required for construction and installation operations that do not conform to the aforementioned typical E&SC designs and details, encroachments into jurisdictional or environmentally sensitive areas or larger land disturbing activities (examples may include but not limited to lay down or construction yards, temporary construction office sites, or fiber huts). Methods of installation that minimize ground disturbance and can be completed and stabilized within the same workday may utilize the aforementioned typical ES&C plan design and may not require further planned E&SC devices.

Use correct NCDOT symbology.

Protect existing drainage structure inlets with Rock Inlet Sediment Trap Type ‘A’ (RIST- A), Rock Inlet Sediment Trap Type ‘C’ (RIST-C), Rock Pipe Inlet Sediment Trap Type ‘A’ (PIST-A), etc.

Utilize adequate perimeter controls (temporary silt ditches (TSD), temporary silt fence (TSF), etc.).

CWD shall be used to the maximum extent practical to direct offsite drainage around the disturbed project limits. CWD should not be used to divert offsite runoff through the project construction limits without temporary piping or additional E&SC measure to separate construction stormwater from the CWD.

Utilize skimmer basins and rock measures with sediment control stone (Temporary Rock Sediment Dam Type ‘B’ (TRSD-B), Temporary Rock Silt Check Type ‘A’ (TRSC-A), etc.) at drainage outlets.

Account for topography and show existing contour lines on Clearing & Grubbing Plans only.

Utilize Temporary Rock Silt Checks Type ‘B’ (TRSC-B) or wattles to reduce velocity in existing ditches with spacing of 250 feet divided by percentage of ditch grade. Also utilize TRSC-B’s or wattles in proposed TSD’s and temporary diversions (TD).

Protect existing streams; do not place erosion control devices in live streams unless permitted by the Division of Water Resources 401 Certification and the Army Corps of Engineers 404 Permit.

In areas of DSSW, sediment basins shall be sized to provide adequate silt storage for 3600 cubic feet per disturbed acre with surface area equal to 435 square feet per cubic foot per second (cfs) of the peak inflow rate, Q25, using 25-year peak rainfall data (NCDEQ – *Erosion and Sediment Control Planning and Design Manual* or NOAA’s National Weather Service website <https://hdsc.nws.noaa.gov/hdsc/pfds/> for partial duration (ARI) time series type). In all other areas,

utilize the 10-yr peak rainfall event, Q10, for peak inflow rate. A Sediment Basin Designer Spreadsheet will be provided by the NCDOT Roadside Environmental Unit upon request.

In areas of DSSW, Skimmer Basins shall be sized to provide adequate silt storage for 1800 cubic feet per disturbed acre with surface area equal to 325 square feet per cubic foot per second (cfs) of the peak inflow rate, Q25, using the 25-year peak rainfall data (NCDEQ – *Erosion and Sediment Control Planning and Design Manual* or NOAA’s National Weather Service website <https://hdsc.nws.noaa.gov/hdsc/pfds/> for partial duration (ARI) time series type). In all other areas, utilize the 10-yr peak rainfall event, Q10, for peak inflow rate. Skimmer Basins shall be designed to dewater in two to three days. A Skimmer Basin Designer Spreadsheet will be provided by the NCDOT Roadside Environmental Unit upon request.

Design Riser Basins to the following standards:

- Surface Area shall be determined by Equation A (sq. feet) = Q25 (cfs) * 435.
- Volume requirement shall be 1800 cubic feet per disturbed acre draining to the riser basin.
- Riser Pipe shall have a cross-sectional area 1.5 times that of the barrel pipe.
- The riser pipe shall be non-perforated with a skimmer attached to the bottom of the pipe, one foot from the bottom of the basin.
- See NCDEQ – *Erosion and Sediment Control Planning and Design Manual* for additional design criteria.

The minimum and maximum length to width ratio of all Sediment Basins shall be 2:1 and 6:1, respectively.

Coir Fiber Baffles shall be installed in all silt basins and sediment dams at drainage outlets. For silt basins with a 20-foot or longer length, three Coir Fiber Baffles shall be installed with a spacing of ¼ the basin length. For silt basins with a length less than 20 feet, a minimum of two Coir Fiber Baffles shall be installed, with a spacing of 1/3 the basin length. The Design-Build Team will not be required to show the individual baffles on the Erosion Control Plans but shall be required to incorporate the Coir Fiber Baffle Detail on the Erosion Control Plans.

Construction activities in jurisdictional streams shall be done in accordance with the NCDOT *Best Management Practices for Construction and Maintenance Activities*.

Utilize Coir Fiber Wattles with Polyacrylamide (PAM) and / or TRSC-As with Matting and PAM in temporary and permanent, existing and proposed ditches at an appropriate design spacing in areas where sediment basins are not feasible at drainage outlets and in areas where sediment basins at drainage outlets with sediment traps (i.e. PIST-A, RIST-A, etc.), cannot be properly sized to surface area and/or sediment storage requirements due to safety concerns, right of way restrictions, utility conflicts, or other construction limitations approved by the NCDOT Roadside Environmental Unit.

Utilize temporary diversions or diversion berms as water bars to divide long sections of the grade directing the stormwater flow to E&SC outlet measures. Design spacing shall be in accordance with Table 6.23a of the NCDEQ – *Erosion and Sediment Control Planning and Design Manual*.

Place a device utilizing PAM at all sediment basin inlets.

At a maximum spacing of 200 feet or at sag points along the silt fence and as directed, utilize Special Sediment Control Fence or Coir Fiber Wattles as drainage breaks in silt fence.

Do not place erosion control devices that require excavation (i.e. sediment basins, silt ditches, etc.) in wetlands.

Provide matting for erosion control for disturbed areas in excess of 5% on grade or slopes steeper than 4:1. Provide natural fiber matting (non-polyethylene or non-polypropylene) mattings for exposed soils within all ESA areas, riparian buffer zones, and wetlands regardless of grade or slope. Areas to be stabilized with matting for erosion control shall be shown on the C&G E&SC plans if Final Phase E&SC plans are not required.

For all drainage outlets where the runoff cannot be treated with a sediment basin and / or the sediment basin cannot be constructed to the required sediment storage or surface area requirements, provide a written explanation.

Excluding perimeter Sediment Basins that will function only during C&G operations, all perimeter Sediment Basins shall be placed outside of construction limits.

Final Grade Phase Plans

FG phase E&SC plans shall be required for areas where construction operations cause alteration of the drainage patterns such that the C&G E&SC phase plans cannot adequately manage or treat stormwater or E&SC measures cannot function properly. The FG E&SC plans shall be designed to manage and provide treatment for stormwater using proposed topography and drainage systems. In addition to the requirements of C&G Phase Plans, the Final Grade Phase Plans shall:

Devices at all drainage turnouts shall utilize skimmer or sediment control stone (TRSD-B, TRSC-A, etc.) and a spillway with an adequately designed base length to distribute outflow.

Provide matting for erosion control (straw) in all disturbed or modified ditch lines, including but not limited to temporary ditch lines (TDs) utilized to divert offsite runoff around construction areas, where the velocity is greater than 2.0 feet / sec, and the shear stress is 1.25 psf or less. For ditch lines with a shear stress above 1.25 psf but not greater than 2.55 psf install matting for erosion control (excelsior). Permanent Soil Reinforcement Mat or Rip Rap shall be utilized for ditches with a shear stress greater than 2.55 psf with approval from the Engineer.

Intermediate Phase

Intermediate Erosion Control Plans shall only be required if design modifications and / or site conditions require additional erosion control design or design revisions to the RFC C&G and / or RFC Final Grade Erosion Control Plans. Intermediate Plans shall be submitted for review and shall be accepted prior to construction of any aspect impacted by the revised erosion control design. For any intermediate phase, comply with Section B “Final Grade Phase” above.

Detail Sheets, Title Sheets and Special Provisions

Detail Sheets and Notes

Provide project specific special notes and details, including but not limited to, skimmer basin, coir fiber wattle with Polyacrylamide (PAM), etc.

Provide matting summary sheet(s): matting for erosion control, permanent soil reinforcement mat, and coir fiber mat.

Provide reforestation sheet(s): regular, wetland, streambank and / or buffer showing appropriate

species.

Title Sheet

Show correct notes: NCG-01, HQW, ESA, C&G, etc.

Show correct standards for project

List of standard NCDOT symbology

Show name and certification number of Level III certified individual(s) responsible for designing and / or reviewing Erosion and Sedimentation Control Plans

Show name of primary NCDOT Roadside Environmental Unit Erosion and Sedimentation Control Plan reviewer

Special Provisions

Erosion Control Special Provisions are available at the following website:
<https://connect.ncdot.gov/resources/roadside/Pages/Soil-Water.aspx>

References in Erosion Control Special Provisions from the aforementioned website to Method of Measurement, Basis of Payment, or any other statement regarding direct payment for Erosion & Sediment Control measures shall be disregarded.

Erosion & Sediment Control / Stormwater Certification Project Special Provision found elsewhere in this RFP.

Construction Requirements

General

The Design-Build Team shall comply with the North Carolina Administrative Code *Title 15A Environmental Quality* Chapter 4, Sedimentation Control.

An accepted Erosion and Sedimentation Control Plan shall not exempt the Design-Build Team from making every effort to contain sediment onsite.

Whenever the Engineer determines that significant erosion and sedimentation continues despite the installation of approved protective practices, the Design-Build Team shall be required to, and shall, take additional protective action.

Preliminary Construction Meeting

Prior to any land disturbing activity, the Engineer will schedule a meeting with Division construction personnel, Design-Build Team senior management, Design-Build Team project staff, NCDOT project staff, consultant engineering / inspection staff, NCDOT Construction Unit, NCDOT Roadside Environmental Unit, Land Quality, Department of Water Resources and any other party associated with activities that impact the overall effectiveness of the project's erosion control.

During this meeting, the attendees shall review the Design-Build Team's Erosion Control Plans and identify potential erosion control issues. All attendees will provide comments, recommendations and supportive information to help facilitate resolution to the aforementioned

potential erosion control issues.

Construction Meetings

Once construction begins, the Engineer may schedule monthly meetings to review the erosion control status. All parties listed above for the Preliminary Construction Meeting shall participate in these monthly construction meetings.

During the construction meetings, the erosion control efforts / issues to date will be reviewed and discussed. Additionally, the upcoming construction phases will be reviewed to identify potential erosion control issues. After the construction meeting, a project review may occur to identify site specific issues and identify solutions. The Design-Build Team shall be responsible for all actions, corrections and / or resolutions resulting from the construction meetings and / or subsequent site visits.

The NCDOT senior management will discuss issues that are repeatedly identified on inspection reports and / or discussed during the construction meetings with the Design- Build Team's senior management.

If project activities do not change the erosion control status / conditions, the Engineer may elect to change the construction meeting frequency or cancel a meeting.

Inspection and Certification

Erosion & Sediment Control / Stormwater Certification shall be required according to the Project Special Provision found elsewhere in this RFP.

Prior to installation of any erosion control devices, the Design-Build Team shall verify boundaries of jurisdictional areas in the field and delineate with Safety Fence or flagging. For guidance on Safety Fence and flagging in jurisdictional areas, see:

<https://connect.ncdot.gov/resources/roadside/Pages/Field-Operations-Documents.aspx>

Reclamation Plan

As required, borrow or waste areas that are part of the project shall require a separate Reclamation Plan, unless the borrow or waste activity is regulated under the *Mining Act of 1971*, or is a landfill regulated by the DWM. For newly created borrow pit(s) that require dewatering, Borrow Pit(s) Dewatering Basins shall be required and shall be in accordance with the applicable special provisions available at the website noted in the Construction Requirements above. The Design-Build Team shall submit the location and permit number for waste / borrow sites covered by the Mining Act or regulated by the DWM concurrently to the Design-Build Unit and the Resident Engineer. For Reclamation Procedures, see:

<https://connect.ncdot.gov/resources/roadside/FieldOperationsDocuments/ContractedReclamationProcedures.pdf>

Temporary access and haul roads associated with borrow pits and staging areas shall be included in the Reclamation Plan.

A Central Coastal Plain Capacity Use Area (CCPCUA) permit is required for dewatering of groundwater in Wayne, Lenoir, Jones, Craven and Carteret Counties excess of 100,000 gallons per day of ground water prior to any dewatering operation. The CCPCUA rules also require

registration and reporting of water use for operations using more than 10,000 gallons of ground water and/or surface water per day. The requirements for monitoring and record keeping may be found at to following link:

<https://connect.ncdot.gov/resources/roadside/SoilWaterDocuments/CCPCUA.pdf>

Miscellaneous Construction Requirements

At a minimum, the Design-Build Team shall install Floating Turbidity Curtain at ponds, lakes, and other jurisdictional standing water bodies 1) where construction activities create surface fill impacts 2) or where sufficient erosion and sediment control devices cannot be installed to contain sediment and / or turbidity impacts.

Utilize special stilling basins to dewater the construction site in accordance with NCDOT

To contain concrete wash water and associated concrete mix from washing out ready-mix trucks, drums, pumps, or other equipment, provide Concrete Washout Structures at egress points. Concrete Washout Structures must collect and retain all concrete wash water and solids so that this material does not migrate to surface waters or into the ground water. The Concrete Washout Structures are not intended for concrete waste not associated with washout operations. The Concrete Washout Structures may include devices above or below ground and / or commercially available devices designed specifically to capture concrete wash water. Concrete Washout Structure options may be found in the special provision, available at the website noted in Section IV above. For construction details of an above grade and below grade Concrete Washout Structure, reference the website noted below:

<https://connect.ncdot.gov/resources/roadside/SoilWaterDocuments/ConcreteWashoutStructureDetail.pdf>

All erosion control measures with stone extending beyond the construction limits shall be considered temporary fill. If impacted wetland areas are permitted as Hand Clearing, then the aforementioned temporary fill shall be permitted as Temporary Fill in Hand Cleared Areas for Erosion Control. (Reference the Environmental Permits Scope of Work found elsewhere in this RFP).

Sediment basins that drain directly into jurisdictional water or have a total drainage area of one acre or more shall be designed and constructed with outlet structures that only withdraw water from the surface. For sediment basins that do not drain directly into jurisdictional water or have less than one acre of total drainage area, surface dewatering outlets or stone outlets may be provided.

The Design-Build team shall adhere to the materials management requirements set forth in section F of the NCG010000 permit. Structural controls installed to manage construction materials stored or used on site shall be shown on the E&SC Plan.

The Design-Build Team shall coordinate with the Division Roadside Engineer to delineate the limits of their active operations to allow for routine maintenance mowing and litter removal operations to occur within the project limits.

Vegetation Management and Ground Cover Requirements

Vegetation Management

To ensure adherence with the April 1, 2019 NCG-010000 General Construction Permit, issued by

the North Carolina Department of Environmental Quality, Division of Water Resources, the Design-Build Team shall formally submit a project-wide Vegetation Management Procedure for the NCDOT's review and acceptance prior to any land disturbing activities. After this initial review, the Design-Build Team shall concurrently provide the NCDOT Resident Engineer and Roadside Environmental Field Operations Engineer updated versions of the Vegetation Management Procedure on a monthly basis. These updated versions will not require formal submittal to the Design-Build Unit but will be subject to review comments by the aforementioned field personnel. All versions of the Vegetation Management Procedure shall include, but not be limited to, 1) provisions for the early establishment of grasses / vegetation, 2) provisions for obtaining the required 80% permanent vegetation stand, as defined in the April 1, 2019 NCG-01000 General Construction Permit and in accordance with the *Permanent Vegetation Establishment* Project Special Provision found elsewhere in this RFP, by the project final completion date, and 3) procedure and schedule details for fertilizer topdressing, supplemental seeding, mowing and repair seeding. The Vegetation Management Procedure shall be closely coordinated with the grading and hauling operations. The Design-Build Team shall provide a narrative overview of the Vegetation Management Procedure in the Technical Proposal.

From the beginning through the end of construction, the Design-Build Team shall maintain a comprehensive list that details when and where permanent / temporary / repair seeding and fertilizer topdressing have been performed.

Ground Cover Stabilization Requirements – NCG010000 (7 – 14 Days)

Ground cover stabilization shall comply with the timeframe guidelines specified by the North Carolina Department of Environmental Quality, Division of Water Resources NCG- 010000 General Construction Permit that became effective on April 1, 2019. Excluding the slopes noted below, temporary and permanent ground cover stabilization shall be provided within seven calendar days from the last land-disturbing activity. The Design-Build Team shall label all slopes subject to the seven-day ground cover stabilization requirements on all Erosion and Sedimentation Control Plans submitted to the Department for review and acceptance.

For the slopes noted below, temporary and / or permanent ground cover stabilization shall be provided within 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of ten feet or less
- Slopes 3:1 or flatter, with a slope length of 50 feet or less
- Slopes 4:1 or flatter

Temporary and / or permanent ground cover stabilization shall be provided in accordance with the provisions in this RFP, the Vegetation Management Procedure developed by the Design-Build Team and the April 1, 2019 NCG-010000 General Construction Permit.

Additional Ground Cover Stabilization Requirements

Once the Design-Build Team identifies the area for stabilization due to inactivity, the Design-Build Team shall obtain concurrence from the Engineer and adhere to the following options based on the estimated amount of time the area will remain inactive. If the area stabilized exceeds the estimated timeframe, the Design-Build Team shall implement the next level of stabilization as directed by the Engineer. All application rates noted below are in pounds per acre.

Short Term Stabilization – For areas that will remain inactive for up to 21 days

Erodible areas shall be stabilized utilizing non-vegetative cover. Non-vegetative cover options include straw mulch, hydraulic applied erosion control products or rolled erosion control products. If straw mulch is used, it shall provide 100% groundcover and be tacked sufficiently to hold the mulch in place for the duration of the inactive period. All other methods shall be installed according to the manufacturer’s directions.

Mid-Term Stabilization – For areas that will remain inactive for up to 90 days

- Erodible areas shall be stabilized utilizing the following stabilization protocol:

March 1 – August 31

50# German or Browntop Millet
500# Fertilizer
4000# Limestone

September 1 – February 28

50# Rye Grain or Wheat
500# Fertilizer
4000# Limestone

- At the Engineer’s sole discretion, the use of limestone on sandy soils that require topsoil for stabilization may be eliminated. The Design-Build Team shall consult with, and obtain written approval from, the NCDOT Roadside Environmental Unit prior to eliminating limestone.
- Upon obtaining written approval from the Engineer, the Design-Build Team may use wood mulch and / or ground C&G debris as an option for Mid-Term Stabilization. If approved, the aforementioned mulch and / or debris shall be installed at a thickness that prevents erosion.

Long Term Stabilization – For areas that will remain inactive for more than 91 days

- Erodible areas shall be stabilized utilizing the following stabilization protocol:

March 1 – August 31

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

September 1 – February 28

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

* On cut and fill slopes 2:1 or steeper, the Design-Build Team shall apply centipede at a rate of five pounds per acre.

Riparian and Wetland Locations

March 1 – August 31

18# Creeping Red Fescue Cultivars ***
6# Indiangrass
8# Little Bluestem
4# Switchgrass
25# Browntop Millet
500# Fertilizer

September 1 – February 28

18# Creeping Red Fescue Cultivars ***
6# Indiangrass
8# Little Bluestem
4# Switchgrass
35# Rye Grain

4000# Limestone

500# Fertilizer
4000# Limestone

Waste and Borrow Areas

March 1 – August 31

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

September 1 – February 28

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

**** Approved Tall Fescue Cultivars**

06 Dust	Escalade	Justice Kalahari	Serengeti Shelby
2 nd Millennium 3 rd	Essential	Kitty Hawk 2000	Sheridan Signia
Millennium	Evergreen 2	Legitimate	Silver Hawk
Apache III	Falcon IV	Lexington	Sliverstar
Avenger	Falcon NG	LSD	Shenandoah Elite
Barlexas	Falcon V	Magellan	Sidewinder Skyline
Barlexas II	Faith	Matador	Solara
Bar Fa	Fat Cat	Millennium SRP	Southern Choice II
Barrera	Festnova	Monet	Speedway
Barrington	Fidelity	Mustang 4	Spyder LS
Barrobusto	Finelawn Elite	Ninja 2	SRP Tulsa Time
Barvado	Finelawn Xpress	Ol' Glory	Sunset Gold
Biltmore	Finesse II	Olympic Gold	Taccoa Tanzania
Bingo	Firebird	Padre	Trio
Bizem	Firecracker LS	Patagonia	Tahoe II
Blackwatch	Firenza	Pedigree	Talladega
Blade Runner II	Five Point	Picasso	Tarheel
Bonsai	Focus	Piedmont	Terrano
Braveheart	Forte	Plantation	Titan ltd
Bravo	Garrison	Proseeds 5301	Titanium LS
Bullseye	Gazelle II	Prospect	Tracer Traverse
Cannavaro	Gold Medallion	Pure Gold	Turbo
Catalyst	Grande 3	Quest	Turbo RZ Tuxedo
Cayenne	Greenbrooks	Raptor II	Venture Umbrella Van
Cessane Rz	Greenkeeper	Rebel	Gogh Watchdog
Chipper	Gremlin	Rebel IV	Wolfpack II Xtremegreen
Cochise IV	Greystone	Rebel Sentry	
Constitution	Guardian 21	Regiment II	
Corgi	Guardian 41	Regenerate	
Corona	Hemi	Rendition	
Coyote Exeda	Honky Tonk	Rhambler 2 SRP	
Darlington	Hot Rod	Rembrandt	
Dynasty	Hunter	Reunion	
Davinci	Inferno	Riverside	
Desire	Innovator	RNP	
Dominion	Integrity	Rocket	
Dynamic	Jaguar 3	RZ Ultimate	
Endeavor	Jamboree	Scorpion	

***** Approved Creeping Red Fescue Cultivars**

Aberdeen

Boreal Epic

Cindy Lou

- From January 1 – December 31, the Design-Build Team shall apply an additional 20# of *Sericea Lespedeza* on cut and fill slopes 2:1 or steeper.

Soil Analysis

If vegetation establishment indicates a deficiency in soil nutrients or an incurred pH level is present, the Design-Build Team shall take soil samples and apply additional soil amendments to the affected area and as directed.

Fertilizer

Fertilizer used within the project limits shall be 10-20-20 analysis or a different analysis that provides a 1-2-2 ratio applied at a rate that provides the same amount of plant food as a 10-20-20 analysis and as directed.

Fertilizer used for waste and borrow areas shall be 16-8-8 grade applied at a rate of 500 pounds per acre; or a different analysis that provides a 2-1-1 ratio applied at a rate that provides the same amount of plant food as a 16-8-8 analysis and as directed.

Supplemental Seeding

For all supplemental seeding, the kinds of seed and proportions shall be the same as specified above for *Long Term Stabilization*. The rate of application for supplemental seeding shall be between 25# to 75# per acre. Prior to topdressing, the Design-Build Team shall determine the actual rate per acre for supplemental seeding and submit the supplemental seeding rate and areas to the Department for review and acceptance.

To prevent disturbance of existing vegetation, minimum tillage equipment, consisting of a sod seeder, shall be used to incorporate seed into the soil where degree of slope allows. Where degree of slope prevents the use of a sod seeder, a clodbuster (ball and chain) may be used.

Erosion Control Damages

Damages

The Design-Build Team shall observe and comply with Federal and State Laws, Local Laws, Ordinances, and Regulations; as well as Orders and Decrees of Bodies having any jurisdiction or authority in accordance with Section 107 of the 2018 NCDOT *Standard Specifications for Roads and Structures*.

The Design-Build Team shall take all reasonable precautions to comply with all regulations of all authorities having jurisdiction over public and private land governing the protection of erosion and sedimentation. Any fines, remediation required or charges levied against the Department for failing to comply with all rules and regulations concerning erosion and sediment control, due to the Design-Build Team's negligence, carelessness, or failure to implement the Erosion and Sedimentation Control Plans and Specifications; or failure to maintain an approved Storm Water Pollution Prevention Plan (SWPPP), regardless of absence of neglect, shall be deducted from monies due the Design-Build Team. In addition to said fines, remediation required, or charges levied, any associated engineering costs or actions taken by the Department in order for the Department to comply with rules and regulations, as a result of the Design-Build Team's negligence, carelessness, or failure to implement the Erosion and Sedimentation Control Plans and

Specifications; and / or the SWPPP, regardless of absence of neglect, shall be deducted from the monies due to the Design-Build Team.

F-1.1g. Environmental Permits Scope of Work

General

The Department will has obtained a: US Army Corps of Engineers (USACE) Section 404 Permit, NC Department of Environmental Quality, NCDWR Section 401 Water Quality Certification and Division of Coastal Management General Permit for I-5986C and R-5777D. If modifications to the abovementioned permits are required, the Design- Build Team shall prepare all designs and documents necessary for the Department to obtain permit modifications.

The Department will obtain a: US Army Corps of Engineers (USACE) Section 404 Permit, NC Department of Environmental Quality, NCDWR Section 401 Water Quality Certification, a Division of Coastal Management General Permit for HO-0002A, B & C. It is anticipated that the Department will obtain these permits by August 31, 2021. As stated elsewhere in this RFP the Design-Build Team may begin construction activities prior to obtaining the aforementioned environmental 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. If modifications to the abovementioned permits are required, the Design-Build Team shall prepare all designs and documents necessary for the Department to obtain permit modifications.

The Design-Build Team shall not begin ground-disturbing activities in jurisdictional areas until the permit modifications have been obtained if needed.

The Design-Build Team may begin construction activities prior to obtaining the aforementioned environmental 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 Design-Build Team is encouraged to advance as many construction activities as possible outside jurisdictional resources prior to issuance of the environmental permit modifications. The Design-Build Team shall indicate the specific construction activities that will occur outside jurisdictional resources prior to obtaining the environmental permit modifications and their anticipated start date in the Technical Proposal.

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 EAU - ECAP or the DEO present. A representative from the Design-Build Unit shall be included on all correspondence.

Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall be bound by the terms of all signed planning documents. 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 modification, including but not limited to public involvement, additional design effort, additional construction effort, and / or additional environmental agency coordination and approvals.

It shall be the Design-Build Team's responsibility to acquire information and prepare any needed revised permit drawings that reflect the impacts and minimization efforts. 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 modification. The aforementioned permit impact sheets shall be reviewed and accepted by the Department prior to the permit modification submittal. The Design-Build Team shall be responsible for developing the permit modification for all jurisdictional impacts. At a minimum, the permit application shall consist of the following to the level provided for the original permit:

- Permit drawings
- 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.

If permit modifications are needed, direct coordination between the Design-Build Team, the Design-Build Unit, Resident Engineer, DEO and EAU shall be necessary to ensure proper permit modification application development. Upon completion of the draft permit modification application, the Design-Build Team shall concurrently forward the permit modification application to the Design-Build Unit, Resident Engineer, Division Environmental Officer, Hydraulics Unit and EAU for review and approval. After all revisions are complete, the Department will subsequently forward the permit modification application to the appropriate environmental agencies.

Any temporary construction measures, including de-watering, construction access, etc. shall be addressed in the permit modification 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 EAU.

The Design-Build Team shall describe the construction methods for all structures that impact jurisdictional resources. The temporary impact descriptions (haul roads, utility relocations, work bridges, etc.) shall include restoration plans, schedules and disposal plans.

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 permit modifications 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 modification, the design shall be complete and accepted by the Department.

The Design-Build Team should expect it to take up to 4 months to accurately and adequately complete all designs necessary for the permit modification, submit the permit application to the Department, and obtain permit approvals from the environmental agencies. Environmental agency review time will be approximately 60 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 4-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 4-month period has been exceeded. If time were granted it would be only for that time exceeding the 4-month period. This 4-month period is considered to begin on the Date of Availability, as noted elsewhere in this RFP.

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

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 permanent wetland and surface water impacts, the Department will review the roadway project corridor for potential on-site mitigation opportunities. If no on-site mitigation opportunities are identified, the Department will debit compensatory mitigation for unavoidable permanent impacts to wetlands and surface waters due to the project construction from the NCDOT Debit Ledger assets and / or acquire the compensatory mitigation from the NC Division of Mitigation Services. This amount of mitigation will be based on impacts, as identified in the I-5986C/R-5777D, and HO-0002A, B & C permits provided by the Department.

Any changes proposed by the Design-Build Team to any design or construction detail 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 / or 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 a NCDOT prequalified environmental consultant to conduct a full environmental investigation to include, but not be limited to, Federally Listed Threatened and Endangered Species, wetlands, surface waters, avoidance and minimization in jurisdictional areas, compensatory mitigation, FEMA compliance, and historical, archaeological, and cultural resource surveys in these areas. The environmental consultant shall obtain concurrence through EAU, from the U. S. Fish and Wildlife 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 4-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.

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.

For other commitments, see Project Special Provisions for “Special Requirements for Work in National Forest”.

The MCAS property that lies between Holly Drive and Jackson Drive in Havelock must be avoided. The fiberoptic cable must be installed within NCDOT right-of-way in the grassy median between Mimosa Drive and US Highway 70 west, where there is an existing line of trees and power poles.

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 I-5986C/R-5777D, and HO-0002A, B & C Categorical Exclusion, all permits, and all site visits.

Staging of construction equipment or materials shall not occur within any of the National Register of Historic Places (NRHP) boundaries or potential NRHP eligible tax parcels depicted in the R-5777D, I-5986C and U-XXXX historic architecture and archaeology screening memos. Consultation with SHPO shall be required if changes to the location and method of installation

occur that would impact an NRHP boundary or potential NRHP eligible tax parcel noted in the screening memos.

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 Historic Architecture Group Leader, the NCDOT Archaeology Group Leader and the 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 Design-Build Unit. 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 Mary Pope Furr, NCDOT Historic Architecture Group Leader at (919) 707-6068, Matthew Wilkerson, NCDOT Archaeology Group Leader at (919) 707-6089, or David Stark, PE, NCDOT Priority Project Development Engineer at (919) 707-6605.

F-1.2. O&M Scope of Work

ITS Maintenance General Scope of Services

Maintenance Description

1. The NCDOT Transportation Systems Management and Operations (“TSMO”) Unit - Traffic Systems Operations (“TSO”) is responsible for:
 - a. The operations of the STOC and Regional Traffic Management Centers (TMC).
 - b. Using incident management, Intelligent Transportation Systems (“ITS”), traveler information strategies and signal system timing to support mobility and safety on the statewide roadway network.
2. The devices deployed along the I-95, U.S. 70, and U.S. 74 corridors will be operated by the STOC to support mobility and safety. TSO will provide contract and performance management oversight for this project. NCDOT Divisions 2, 4, 5, 6, 8, 10, 12, and 13 will provide maintenance validation and review.
3. The primary purpose and intent of maintaining the ITS devices along I-95, U.S. 70, and U.S. 74 is to enable effective transportation operations along these corridors. The uptime and availability of each ITS device is the primary focus so NCDOT can effectively operate these corridors.

Device Descriptions and Priority

1. The following ITS devices and supporting infrastructure shall be maintained by the Contractor:
 - a. Cameras and all related and supporting infrastructure including power injectors, cabling, and power supplies
 - b. DMS and all related and supporting infrastructure including the sign itself, sign controller, cabling and power supplies. DMS sign structure maintenance is NOT included in this contract.
 - c. Weigh station cameras and communication connectivity for the weigh station building including a fiber distribution panel and switch in the building. The demarcation point for network maintenance for the weigh station building is at the switch.
 - d. Communication connections for:
 - i. Closed loop traffic signal systems including the fiber distribution panel, fiber to the splice closure, network switch and/or network modem in the cabinet(s). The demarcation point for maintenance is at the switch and/or network modem.
 - ii. Rest areas buildings including a fiber distribution panel and switch in the building. The demarcation point for maintenance is at the switch.
 - iii. Traffic count stations including the fiber distribution panel, fiber to the splice closure, network switch and/or network modem in the cabinet(s). The demarcation point for maintenance is at the switch and/or network modem.

- e. Communication cable infrastructure including:
 - i. Underground conduit (spare and occupied) including bridge conduit systems
 - ii. Aerial fiber in limited circumstances
 - iii. Conduit risers
 - iv. Handholes/junction boxes
 - v. Fiber optic cable
 - vi. Fiber optic splice enclosures
 - vii. Fiber distribution (patch) panels
 - viii. Fiber optic jumper cables
 - f. ITS Device Cabinets and Hub Cabinets including power, generator transfer switch (if applicable), aesthetics, HVAC (if applicable), UPS, solar power unit (if applicable), batteries (if applicable), all cabling within the cabinet, fiber distribution panels within cabinets, conduits entering cabinet, cabinet base, pest control, mowing around the cabinets, graffiti removal, etc.
 - g. Field switches including all switches within ITS device cabinets. Hub switches will not be maintained by the Contractor. The demarcation point for this contractor begins with the SFP which connects to the hub switch.
 - h. Cellular modem communications equipment and supporting hardware used for any ITS devices along the corridor. NC DIT provides the modems, SIM cards, and service. The Contractor will only be responsible for requesting new modems from NC DIT for the appropriate locations, installing them, and monitoring them.
 - i. CV Technology Site including poles, RSU, antennas, pole, power in the cabinet, cabinet fan, all cabling, conduit, fiber distribution panel and fiber to the splice enclosure.
 - j. RWIS including the RWIS controller, sensors, pole, power in the cabinet, cabinet fan, all cabling, conduit, fiber distribution panel and fiber to the splice enclosure.
 - k. The Contractor shall be responsible for handling and on-site storage of all waste generated during O&M activities in full compliance with all federal, state, and local laws.
 - l. The Contractor shall maintain adequate reserve stocks of cabling, racks, assemblies, special parts, and other spares to meet or exceed the performance requirements included in Appendix A.
2. Individual devices will be assigned an asset class which defines the acceptable availability and contract disincentives for pay-for-performance.
- a. The following asset classes are assigned on a per-device basis:
 - i. General
 - ii. Essential
 - iii. Vital
-

- b. NCDOT provides quantities for the number of devices in each asset class in Appendix A as informational purposes only. NCDOT may change these quantities at a later date at their discretion by assigning individual devices to different asset classes.
 - c. This contract does allow for the addition of future devices unaccounted for in the contract at this time. Those devices would be assigned a priority at the time when they are added.
 - d. Compensation and Pay-For-Performance of this specification provides additional details as to how the priority of the device impacts Contractor compensation and the Contractor's cost proposal.
3. The O&M Contractor shall coordinate with the Design-Build Contractor and witness full fiber optic testing as necessary to ensure fiber optic cabling and ITS devices are completely operational and within NCDOT specifications prior to taking over O&M responsibilities.
 4. The O&M Contractor shall comply with all current and future environmental requirements set forth in Applicable Law, technical guidance and policy, and all environmental related approvals required by NCDOT. The O&M Contractor shall be responsible to maintain complete, reliable operation of the fiber optic network and all related Fiber Infrastructure.
 5. The O&M Contractor shall perform all duties, tasks, and all other responsibilities required by this RFP in accordance with ANSI and National Electrical Installation Standards ("NEIS") standard 301 (ANSI/NEIS 301 standards) and recognized industry best practices.

Project Management Requirements

1. The Contractor shall develop an ITS Maintenance Project Management Plan ("PMP"). The PMP shall be developed as a draft and delivered to NCDOT for review and comment. The PMP shall, at a minimum, address the following requirements:
 - a. Performance Monitoring Plan: The Contractor shall monitor its own performance to ensure that the performance criteria and outcomes are achieved. The PMP shall include procedures to ensure that all work meets or exceeds the performance criteria contained within this specification.
 - i. The Contractor must provide a backup dashboard for performance management and maintenance tracking outside of the ITS Work Order Management System ("IWOMS") software. The use and management of this dashboard shall be defined in the Contractor's Performance Management Plan. See ITS Maintenance General Scope of Services.
 - ii. The Contractor shall provide an independent Performance Management dashboard that displays % availability and repair time for each asset on a daily and monthly basis. The dashboard shall also provide cumulative reporting and data displays on a per asset type and per asset class basis on a daily and monthly trend basis.
 - iii. The O&M Contractor shall develop and maintain a library of OEM SOP for all Fiber Infrastructure and ITS assets and tasks included in the RFP
 - b. Quality Control Plan: The Contractor shall develop and implement a Quality Assurance and Quality Control ("QA/QC") Plan that will allow the Contractor to achieve quality

deliverables and work products that meet NCDOT’s needs. The Quality Control Plan shall include the QA/QC process that the Contractor will follow for all work products and deliverables. For example, there should be an individual QA/QC process outlined for PM in the QA/QC Plan.

- c. Staffing Plan: The Contractor shall provide designated and appropriate staff throughout the life of the contract. This staffing will include at least three (3) full time positions which will be dedicated full time positions for ITS maintenance under this contract. These three (3) positions shall be:
 - i. Project Manager
 - ii. ITS Maintenance Lead Technician
 - iii. ITS Maintenance Technician
- d. The PMP shall include a staffing plan that includes staffing levels and an organizational chart depicting the structure, reporting hierarchy, roles, and responsibilities among Contractor staff and subcontractor staff. The contractor shall ensure that any staff replacement meets or exceeds the qualifications set forth in this staffing plan. For the three (3) full-time positions listed above, the Contractor shall submit a letter requesting approval of the proposed employee replacement and NCDOT must approve.
- e. Communications Management: The Contractor shall develop a communications management plan to be included in the PMP that will define the communication requirements for this project and how information will be disseminated. The communication plan shall propose a procedure for communication for the following specific circumstances at a minimum:
 - i. RM diagnosis requests to the project manager.
 - ii. Performance management reporting including the required dashboard.
 - iii. Coordination with STOC and other NCDOT staff regarding maintenance notifications, requests, questions, and updates.
 - iv. Coordination with NC Department of Information Technology for troubleshooting.
 - v. Communication methodology used for IAMS, IWOMS, INMS and backup communication methodology for when those systems are down or unavailable.
- f. Additional Project Management Duties: The Contractor shall include the following additional project management duties in the PMP:
 - i. Document management
 - ii. Human resource management
 - iii. Scope management
 - iv. Contract administration and management
 - v. Inventory control approach

2. The PMP as it relates to O&M shall be delivered in draft to NCDOT as part of the technical submittal for the RFP.

Construction and Maintenance Phasing

1. The Contractor shall accommodate construction and maintenance phasing within this project.
 - a. Upon award of this Contract, the Contractor shall begin preventive, responsive and emergency maintenance services for all existing ITS devices and communication networks along the project corridors and supporting alternate routes.
 - i. The ITS Design specification provides a list of all existing devices that the Contractor must begin maintenance on. NCDOT has assembled a list of sign make and models and believes it to be accurate. However, NCDOT does not guarantee the accuracy of this information and the contractor will be responsible for maintaining any signs not included in this list:

Make	Model	Controller Model
Daktronics	VF-2420-27x60-66-A	VFC-3000
Ledstar	118-27X90-118	CTL-24
Daktronics	OZ-11322-1000TC	VFC-3000
Daktronics	OZ-11336-1000TC	VFC-3000
Daktronics	VF20x027x90-66-a	VFC-3000
Daktronics	VF20x027x90-66-a	VFC-3000
Daktronics	VF20x027x90-66-a	VFC-3000
Daktronics	VF20x027x90-66-a	VFC-3000
Daktronics	VF2020-27X90	VFC-3000
Daktronics	VM-1020-7x35-66-RG	VFC-3000
Daktronics	VM-1020-24x160-20- RGB	VFC-3000
Daktronics	VF-2420-96x208-20- RGB	VFC-3000
Daktronics	VF-2420-96-368-20-RGB	VFC-3000
Daktronics	VF-2020-96x288-20- RGB	VFC-3000
Daktronics	VF-2020-27X90-66-A GIV	VFC-3000
Ledstar	VMS-118-27X90	CTL-24

- ii. The Contractor’s PM Plan shall include an approach and schedule for completing PMs and/or RM on all existing devices within the first 3 months of the project. If RM is required, it shall be completed at the time of the PM.
- iii. Device availability performance and disincentives will not be monitored or assessed until each device has undergone an initial PM process.

- iv. As each device PM is completed, it will begin being tracked for Pay-For-Performance availability and RM disincentives.
 - v. Within 3 months of contract award, all devices will begin being tracked for Pay-For-Performance availability and RM disincentives.
 - vi. For existing cameras being upgraded as part of this project, the Contractor shall upgrade those cameras within the first 3 months of the project. These devices will begin being tracked for Pay-For-Performance availability and RM disincentives immediately following upgrade.
 - vii. The Contractor shall be compensated according to the bid price for daily maintenance until initial PMs are completed.
 - viii. As the Contractor constructs each network segment, installs proposed ITS devices, and replaces existing ITS devices as specified in the ITS Design/Construction specification, the Contractor shall immediately begin performance management on those devices following successful acceptance testing with NCDOT. Performance management includes evaluation of Pay-for-Performance availability and responsive maintenance disincentives. The Contractor shall also add new or replaced infrastructure to the PM schedule immediately following successful acceptance testing with NCDOT.
2. The Contractor shall accommodate construction and maintenance phasing with construction projects external to this contract.
- a. When a separate construction project is on-going along the I-95, U.S. 70, and U.S. 74 or supporting alternate route corridors, the Contractor shall be responsible for maintenance of existing devices within the construction project limits including network infrastructure.
 - b. When a separate construction project must interrupt ITS device connectivity and functionality:
 - i. The construction project will be required to place a temporary ITS device near the existing ITS device and the construction project will maintain the temporary device.
 - ii. Once the temporary device is operational and has passed NCDOT acceptance testing, the existing device will be removed from Pay-for-Performance tracking and will no longer be maintained by the Contractor.
 - iii. Once the final proposed assets and network infrastructure within a construction project are constructed and have passed NCDOT acceptance testing, the infrastructure will undergo a 30-day burn-in period and then be added to the Pay-for-Performance tracking and will be maintained by the Contractor for both preventive and RM. The temporary devices will be removed from Pay-for-Performance tracking and will no longer be the responsibility of the ITS Maintenance Contractor.

Preventive Maintenance

1. PM shall be performed on all infrastructure described in this section, on average, once every 6 months. The PM shall be performed within 5-7 months of the previous PM on the infrastructure component.
2. Hardware warranties shall be managed by the Contractor on NCDOT's behalf.
3. PM shall be performed on all infrastructure of the following types:
 - a. Cameras including Weigh Station Ramp Viewing Cameras
 - i. Contractor to propose camera PM checklist for the camera itself, power in the cabinet, GFCI testing, cabinet cooling components and replaceable filters, all cabling, conduit, fiber distribution panel, UPS, UPS batteries, gasket locks, base sealing, pest control, conduit sealings, solar panel assemblies and fiber to the splice enclosure.
 - ii. Camera PM shall include cleaning (or replacement, if required) of the camera dome and verification of adequate video transmission.
 - iii. Shall include PM of the network switch and/or network modem in the cabinet.
 - b. DMS
 - i. Contractor to propose DMS PM checklist for the DMS sign, cabinet cooling components and replaceable filters, the DMS controller, power to the sign and controller, GFCI testing, all overhead DMS components, all cabling, conduit, fiber distribution panel, UPS, UPS batteries, gasket locks, base sealing, pest control, conduit sealings, and fiber to the splice enclosure.
 - ii. PM checklist to include a visual structural inspection of the DMS structure. Any deficiencies should be reported to NCDOT immediately.
 - iii. Shall include PM of the network switch and/or network modem in the cabinet.
 - c. Weigh station cameras and communication connections.
 - i. Contractor to propose weigh station PM checklist which shall include PM of the fiber distribution panel, fiber to the splice closure, network switch and/or network modem in the cabinet(s) (if applicable) and the building network connection.
 - ii. PM for the Weigh Station components associated with WIM, Tire Anomaly System, Scales, etc., are handled by others.
 - d. Communication connections for:
 - i. Closed loop traffic signal systems
 1. Contractor to propose closed loop traffic signal system communication connection PM checklist which shall include PM of the fiber distribution panel, fiber to the splice closure, network switch and/or network modem in the cabinet(s).
 - ii. Rest areas

1. Contractor to propose rest area communication connection PM checklist which shall include PM of the fiber distribution panel, fiber to the splice closure, network switch and/or network modem in the cabinet(s) (if applicable) and the building network connection.
- iii. Traffic count stations
 1. Contractor to propose rest area communication connection PM checklist which shall include PM of the fiber distribution panel, fiber to the splice closure, network switch and/or network modem in the cabinet(s) (if applicable).
- e. Communication cable infrastructure including:
 - i. Handholes/junction boxes
 1. Contractor to propose PM checklist which shall include PM of junction box lids and boxes (including replacement if necessary), assessment of junction box damage, conduit sealing for both spare and occupied, tracer wire test switch, ground rod and grounding conductor connection, metal conduit bonding if applicable, verification and replacement of electronic marker balls, and delineator markers.
 - ii. Fiber optic cable
 1. Contractor to propose PM testing plan for dark fiber along the project to verify the validity of the fiber every 6 months. The design requires all fibers to be terminated in hubs and to be spliced through at each splice enclosure. The Contractor shall perform bi-directional OTDR tests on spare fibers between each hub during PM to verify fiber validity.
- f. Hub Cabinets
 - i. Contractor to propose Hub Cabinet PM checklist for the cabinet itself, power in the cabinet, cabinet cooling components and replaceable filters, security/door alarm, cabinet HVAC, Uninterruptable power supplies (including battery replacement), all cabling, conduit, fiber distribution panels and fiber to the splice enclosure.
 - ii. Shall not include PM of the hub network switch in the cabinet.
- g. Field switches
 - i. Contractor to propose field switch PM checklist, which will be completed at the same time as PM for the related device connected to each field switch.
 - ii. The field switch PM checklist shall include at a minimum: coordination with NC DIT for determination of latest configuration that should be loaded on each switch, update of switch firmware based on latest NC DIT standard.
- h. CV Technology Sites
 - i. Contractor to propose CV PM checklist, for the RSU, antennas, pole, power in the cabinet, cabinet cooling components and replaceable filters, all cabling, conduit,

fiber distribution panel and fiber to the splice enclosure. The Contractor shall verify message dissemination functionality from STOC to the RSU.

ii. Shall include PM of the network switch and/or network modem in the cabinet.

i. RWIS

i. Contractor to propose RWIS PM checklist, for the RWIS controller, sensors, pole, power in the cabinet, cabinet cooling components and replaceable filters, all cabling, conduit, fiber distribution panel and fiber to the splice enclosure.

ii. Shall include PM of the network switch and/or network modem in the cabinet.

4. Device Quantities and Future Growth

a. The list of existing and proposed devices is provided in the ITS Design Specification.

b. The quantity of infrastructure components is expected to grow at a rate of 8-15% per year after steady state quantities are reached. This growth is not guaranteed and is dependent upon future NCDOT infrastructure needs which are currently undefined.

c. The quantities listed in Appendix Part G – P3: Price Proposal for O&M and Commercialization on the O&M tab, are steady state quantities. Upon initial commencement of the contract, smaller quantities of existing devices will be managed by the O&M contractor initially until other devices are constructed through the Design-Build SOW and by other projects along the I-95, U.S. 70, and U.S. 74 corridors. Over a period of 3-5 years, the devices will reach the steady state quantities listed in Appendix Part G – P3: Price Proposal for O&M and Commercialization.

d. Contractor to provide pricing per individual device per day. This will enable the contract to be extended to add additional device days as needed to incrementally support device growth.

5. Responsibilities of the Contractor and NCDOT

a. The Contractor will be responsible for:

i. PM management and development of a PM Plan. The PM Plan will be subject to review and approval by NCDOT. The PM Plan shall include the following components:

1. Draft Individual PM Checklists

2. Standard Traffic Control Plans for PM

3. PM Schedule

4. Monthly PM Update Meetings with NCDOT Project Manager

ii. Providing traffic control that meets NCDOT standards for all maintenance activities including traffic control time restrictions as required by NCDOT.

iii. Submitting a pro-active device operations plan that provides a detailed schedule for routine inspections/repairs of all infrastructure elements. This plan is subject to approval by NCDOT staff.

- iv. Following NCDOT standards of safety, traffic control, and site access.
 - v. Submitting an accurate record of pro-active maintenance activities using Contractor-provided IWOMS.
- b. NCDOT will be responsible for:
- i. Specifying the location, type, version, firmware version of devices and infrastructure.
 - ii. Monitoring PM schedule, activity log, traffic safety, and routine quality control for contractor maintenance activities.
 - iii. NC Department of Information Technology will be responsible for Hub Switch PM and TMC PM.
 - iv. Monitoring performance of the contractor, payment, and general contract management.
6. Performance Requirements and Payment
- a. Performance requirements, payment, and cost provision are specified in Compensation and Pay-For-Performance of this specification.

Responsive Maintenance

1. RM shall be performed on all infrastructure described in Device Descriptions and Priority.
2. RM shall occur in four phases and shall be consistently managed using the IAMS, IWOMS, and INMS.
 - a. Phase I of RM includes initial notification of a device or network failure which is initially triggered in INMS and logged in INMS, IWOMS, and IAMS. An initial trouble ticket is logged in IWOMS. This phase lasts until the beginning of Phase II.
 - i. The IWOMS will also enable trouble tickets to be opened manually for non-network related maintenance issues. The Contractor will be responsible for opening a trouble ticket when notified of maintenance issues not already logged in the IWOMS.
 - b. Phase II of RM includes initial response of the Contractor to verify that initial diagnosis of the device or network failure has begun. This phase is logged as complete in IWOMS when a detailed report of the diagnosis and a proposed schedule to repair are submitted in IWOMS.
 - c. Phase III: The Contractor proceeds with repair of the asset. This phase is complete when the device or network failure has been resolved and has been logged in IWOMS. The device status is updated in INMS and IAMS.
 - d. Phase IV of the RM begins a 24 hour period of operational testing of the resolved issue, where the device or network failure is being closely monitored by the Contractor and/or NCDOT. Once the issue has been resolved for 24 hours, the RM phase is logged as complete in IWOMS. If the issue fails again within 24 hours, the RM phase starts at Phase I again, but is considered part of the initial trouble ticket in IWOMS for non-performance

tracking. If the device stays operational for 24 hours, Phase IV will not be included in the total time allocated for RM. If the device fails within 24 hours and goes back to Phase I, then Phase IV is included in the total time allocated for RM.

3. The Contractor shall receive non-performance disincentives to their monthly invoice when the total time for all four RM phases exceeds an established time frame for each asset type and class.
 - a. The timeframes vary based on asset class and asset type. See Compensation and Pay-For-Performance.
 - b. See Compensation and Pay-For-Performance for details for non-performance disincentives.
 4. Device downtime and network outages that result in device downtime for many devices will impact the overall % availability for ITS devices which is being tracked as part of ITS Maintenance Performance Management Plan. The % availability may impact Contractor compensation. See Compensation and Pay-For-Performance for details.
 - a. Network outages that impact multiple devices will have a higher impact on % availability of devices.
 5. The Contractor will not be responsible for network outages and downtime that are due to network outages caused by failures in Hub Switch, Core Switch, or Firewalls maintained by NC Department of Information Technology unless these outages are caused by the Contractor.
 6. Device Quantities and Future Growth
 - a. Assets maintained by the Contractor include existing devices within the project limits, proposed devices to be constructed by the Contractor, and an unknown future quantity of devices. Compensation for existing, proposed and future assets is further defined in Compensation and Pay-For-Performance.
 - b. The quantity of infrastructure components is expected to grow at a rate of 8-15% per year after steady state quantities are reached. This growth is not guaranteed and is dependent upon future NCDOT infrastructure needs which are currently undefined.
 - c. The quantities listed in Appendix Part G – P3: Price Proposal for O&M and Commercialization on the O&M tab, are steady state quantities. Upon initial commencement of the contract, smaller quantities of existing devices will be managed by the O&M contractor initially until other devices are constructed through the Design-Build SOW and by other projects along the I-95, U.S. 70, and U.S. 74 corridors. Over a period of 3-5 years, the devices will reach the steady state quantities listed in Appendix Part G – P3: Price Proposal for O&M and Commercialization.
 7. Contractor Compensation
 - a. See Compensation and Pay-For-Performance for details.
 8. Responsibilities of the Contractor and NCDOT
 - a. The Contractor will be responsible for:
-

- i. Submitting a RM plan that provides a detailed procedure and checklist for troubleshooting each ITS device type and network outage scenario.
 - ii. Facilitation of Monthly PM Update Meetings with NCDOT Project Manager
 - iii. Following NCDOT standards of safety, traffic control, and site access.
 - iv. Providing traffic control that meets NCDOT standards for all maintenance activities including traffic control time restrictions as required by NCDOT.
 - v. Submitting an accurate record of RM activities using IWOMS.
 - vi. Updating IAMS with updated asset information within 5 business days of repair and/or replacement of infrastructure.
 - vii. Updating INMS with updated IP address or SNMP information within 24 hours of repair and/or replacement of infrastructure.
- b. NCDOT will be responsible for:
- i. Managing the list of assets to be maintained by the Contractor and designating the asset class for each asset.
 - ii. NCDOT Division - Monitoring activity log, traffic safety, and routine quality control for contractor maintenance activities.
 - iii. NC Department of Information Technology - hub switch RM and core switch RM.
 - iv. NCDOT Traffic Systems Operations - Monitoring performance of the contractor, payment, and general contract management.

Emergency Maintenance

1. The Contractor shall perform Emergency maintenance work as requested by NCDOT. Emergency maintenance work applies to assets that are not maintained under the Pay-For-Performance Clause. Emergency maintenance work is defined as:
 - a. Repairs to any ITS asset or ITS asset structure (camera poles, DMS sign structures, RWIS structures, CV poles) as deemed immediately necessary by NCDOT Structures
 - b. Vehicle collision repairs to ITS assets.
 - c. Tree and/or vegetation trimming for trees and/or vegetation that occludes camera vision to the roadway and/or assets.
 - d. Tree removal for trees that occlude a camera's vision to the roadway and/or assets.
 - e. At NCDOT's discretion, any damage considered to be outside the original scope of ITS Maintenance.
 - f. Lightning damage is excluded from Emergency Maintenance work.
 - g. Repairs to any asset necessitated by a Force Majeure event.
2. NCDOT may issue a separate Emergency Task Order for the repair and replacement of critical assets under this Contract. The Contractor shall provide unit prices for various emergency

maintenance work that may occur under this Contract. These unit prices shall be inclusive of traffic control. The Contractor shall provide unit prices for the following:

- a. Camera tree trimming
- b. Camera tree removal
- c. DMS Replacement
- d. Cabinet Replacement
- e. CMS Troubleshooting and Repair

NC811 Underground Location Services

1. The North Carolina Underground Damage Prevention Act, Article 8 of Chapter 87 of the North Carolina General Statutes (“UDPA”), requires all utility designees to provide the location and description of all underground facilities, which may be damaged as a result of an excavation. The NCDOT is notified of these requests through the NC 811 system.
 2. The Contractor shall provide the personnel, materials, equipment, supplies, training, traffic control, and supervision necessary for 811 locating services for all fiber optic and electrical underground utilities (Contractor is responsible for electrical utilities 811 locating between the power service meter and the ITS assets, the power company will be responsible for 811 locates for meter service and power distribution) within the right-of-way for I-95, U.S. 70, and U.S. 74 within the project limits.
 - a. Per North Carolina General Statute 87-121, the Contractor shall provide to the Excavator (a third party company) the horizontal location and description of all the operator’s facilities in the area where the proposed excavation or demolition is to occur. The location shall be marked by stakes, soluble paint, flags, or any combination thereof, as appropriate, depending upon the conditions in the area of the proposed excavation or demolition.
 - b. The Contractor shall adhere to North Carolina General Statute 87-121 and the American Public Works Association (“APWA”) Uniform Color Code for marking. The dimension of the facility shall be indicated at least every 25 feet in the area of the proposed excavation or demolition if the width of the facility is greater than four inches.
 - c. The Contractor shall locate each individual facility when multiple facilities are in the area of the proposed excavation or demolition.
 - d. The Contractor shall provide traffic control (if required) and follow all NCDOT safety guidelines for 811 locates.
 - e. The Contractor shall comply with all applicable safety regulations and wear appropriate personal protective equipment (“PPE”) while performing work. In the event the Contractor’s non-compliance with Occupational Safety and Health Administration (“OSHA”) regulations results in a fine against NCDOT, the Contractor shall reimburse NCDOT for such a fine and any other costs relating to the fine.
 - f. All physical locates shall be in accordance with the Underground Utility Safety and Damage Prevention Act.
-

2. General Description: The contractor shall configure, operate, and maintain the IAMS for the corridors specified in this contract. The IAMS shall be an integrated productivity tool and database that helps manage all asset types being maintained under this contract. The IAMS has the following features, which will be configured and maintained by the Contractor for all assets within this project:
 - a. Geographic mapping with the exact location of all ITS Assets
 - b. Georeferenced databases that provide configurable fields for each device and enable device types to have related databases with complementary devices. For example, a camera may have a field Ethernet switch installed in its cabinet, and thus the two would be related.
 - c. Asset status tracking
 - d. Detailed fiber optic cable asset information (the IAMS may use separate software for fiber asset management and standard asset management)
 3. The Contractor shall utilize IAMS to provide monthly fiber GIS shapefile outputs for updating NCDOT 811 tracking.
 4. The IAMS will :
 - a. Provide simple adding, exchanging and deleting of assets.
 - b. Provide point, linear, and polygon features as assets.
 - c. Designate the physical location (latitude and longitude) of assets.
 - d. Maintain a spare asset database for each ITS component.
 - e. Provide database storage to connect MicroStation and PDF plans to specific features and shall provide links to connect MicroStation and PDF plans in linked file storage locations. The IAMS shall provide database storage to connect asset images to individual features within the geodatabase.
 - f. Provide fiber allocation tracking, where the system automatically identifies all cables/fibers being used for a particular network connection using a simple query. The GIS map interface shall display the path of any two-fiber communication channel throughout the system.
 - g. Hosted by NCDOT but with data being maintained by the Contractor.
 5. ITS Assets and Data Fields: The following ITS assets and data fields shall be configured, and maintained by the contractor in the IAMS software:
 - a. Cameras (including weigh station cameras) with the following data fields:
 - i. Camera ID, Date of Installation, Model Number, Firmware Version, Latitude, Longitude, Power Type, Communication Type, Date of Last PM, Status
 - ii. Related Switch ID
 - iii. Related Modem ID
-

- iv. Power Injector ID, Date of Installation, Model Number, Status
 - b. DMS with the following data fields:
 - i. DMS ID, Date of Installation, Model Number, Latitude, Longitude, Communication Type, Date of Last PM, Status
 - ii. DMS Controller ID, Date of Installation, Model Number, Firmware Version, Date of Last PM, Status
 - iii. Related Switch ID
 - iv. Related Modem ID
 - v. Communication Channel ID
 - c. CMS with the following data fields (at this point there are no CMS in this contract):
 - i. CMS ID, Date Purchased, Date Placed in Current Location, Model Number, Latitude, Longitude, Date of Last PM, Status
 - ii. DMS Controller ID, Date of Installation, Model Number, Firmware Version, Date of Last PM, Status
 - iii. Modem ID
 - d. Closed Loop Traffic Signal Communication Connections with the following data fields:
 - i. Connected Signal ID, Date of Connection, Latitude, Longitude, Communication Type, Date of Last PM, Status,
 - ii. Related Switch ID
 - iii. Related Modem ID
 - e. Weigh Station and Rest Area, or Traffic Count Station Communication Connections with the following data fields:
 - i. Connected Facility ID, Facility Access Contact, Date of Connection, Latitude, Longitude, Communication Type, Date of Last PM, Status
 - ii. Related Switch ID
 - f. Communication Conduit with the following data fields:
 - i. Each communication conduit shall have a unique ID for each continuous conduit section of a certain installation type.
 - ii. Conduit ID, Color, Owner or Lessee, Type, Size, Quantity, Installation Type, Material, Total Fiber Cables, Total Fibers, Total Ethernet Cables, Date of Installation, Related TIP Project, Plans, Repair Dates, Status
 - iii. Related Cable IDs (Many-to Many Relationship Table)
 - g. Communication Cables with the following data fields:
 - i. Each communication cable shall have a unique ID for each continuous section of cable between terminations and splice closures.
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- ii. Cable ID, Status, Type, Owner, Fiber Count, Fiber Material, Date of Installation, Related TIP Project, Repair Dates
 - iii. Each cable ID shall be internally linked to a database within the IAMS that documents the allocation of each individual fiber within each individual cable ID.
 - iv. Related Conduit IDs (Many to Many Relationship Table)
 - v. Related Splice Closure IDs
 - vi. Related Panel IDs.
- h. Handholes/Junction Boxes with the following data fields:
- i. Junction Box ID, Status, Communication or Electrical Designation, Type, Size, Owner, Date of Installation, Related TIP Project, Repair Dates, Latitude, Longitude
 - ii. Related Conduit IDs (Many to Many Relationship Table)
 - iii. Related Cable IDs
 - iv. Related Splice Closure IDs
- i. Fiber Optic Splice Closures with the following data fields:
- i. Splice ID, Status, Closure Make/Model, Tray Make/Model, Existing Cassettes, Spare Cassette Slots, Existing Cables, Spare Cable Slots, Date of Installation, Related TIP Project, Repair Dates, link to splice diagram, Latitude, Longitude
 - ii. Splice Diagram
 - iii. Related Cable IDs
 - iv. Related Junction Box ID
 - v. Related Cabinet ID, if applicable
- j. Field Network Switches with the following data fields:
- i. Switch ID, Communication Channel ID, Status, Make, Model, Ports in Use, Available Ports, Firmware Version, Make/Model of SFP in Port 1, Make/Model of SFP in Port 2, SFP 1 Install Date, SFP 2 Install Date, Date Switch of Installation, Related TIP Project, Repair Dates , Latitude, Longitude
 - ii. Related Cabinet ID
 - iii. Related Switch ID
 - iv. Related connected device IDs
 - v. Related Hub Switch IDs
- k. Cabinets with the following data fields:
- i. Cabinet ID, Status, Type, Date of Installation, Related TIP Project, Repair Dates, Latitude, Longitude
 - ii. Related Cable IDs

- iii. Related device IDs internal to the cabinet
 - iv. Related device ID's externally connected to the cabinet
 - l. CV Technology Sites with the following data fields:
 - i. CV RSU ID, Status, Make, Model, Firmware Version, Date of Installation, Date of Repair, Latitude, Longitude
 - ii. CV Antenna ID, Status, Make, Model Firmware Version, Date of Installation, Date of Repair
 - iii. Related Switch ID
 - iv. Related Cabinet ID
 - v. Related Modem ID
 - m. RWIS with the following data fields:
 - i. RWIS ID, Status, Make, Model, Date of Installation, Latitude, Longitude
 - ii. For up to 6 components:
 - 1. RWIS Component ID, Type, Status , Make, Model, Date of Installation, Date of Repair
 - iii. Related Switch ID
 - iv. Related Cabinet ID
 - v. Related Modem ID
 - 6. ITS Asset Configuration: The Contractor shall perform the initial configuration of the IAMS by adding all existing and proposed devices within the design technical scope.
 - a. All devices included in the ITS maintenance scope of work shall be configured in the IAMS.
 - b. The Contractor shall propose fields to be populated based on their proposed maintenance plan.
 - 7. ITS Asset Maintenance: The Contractor shall maintain and regularly update all data in the IAMS throughout the term of the maintenance contract.
 - a. IAMS status information will be used to evaluate the Contractor for performance criteria and therefore must be updated regularly.
 - b. The Contractor shall log the date and time of changes to the IAMS within the individual feature databases.
 - c. Contractor % availability performance metrics shall consider device availability in IAMS, the IWOMS, and the INMS.
 - 8. Submittal Requirements: The Contractor shall propose an IAMS Plan for configuration and maintenance of the IAMS.
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Work Order Management System

1. NCDOT will provide the Contractor access to a NCDOT-owned IWOMS
 2. The Contractor must provide a backup dashboard for performance management and maintenance tracking outside of the IWOMS software. The use and management of this dashboard shall be defined in the Contractor's Performance Management Plan. See ITS Maintenance General Scope of Services.
 3. General Description: The contractor shall configure, operate, and maintain an IWOMS. The IWOMS shall monitor and record all scheduled, requested, and performed maintenance services for this contract. The IWOMS has the following features, which will be configured and maintained by the Contractor for this project:
 - a. Receive both manual trouble tickets and electronically generated trouble tickets through integration with INMS. NCDOT staff, including STOC operators will have access to create trouble tickets.
 - b. Logging of all preventive, responsive, and emergency maintenance services with details of work performed and time and date logs.
 - c. If available, integration with IAMS for a database of all maintained ITS components and their current status. If integration is unavailable, the Contractor shall develop a plan for how data is manually managed and updated between the two systems.
 - d. Asset status tracking identical to IAMS
 - e. Designation of device asset type and criticality including either general, essential or vital criticality.
 - f. Provide detailed performance tracking in a dashboard that accurately evaluates the performance of the contractor in accordance with the performance metrics required in this contract for all maintenance activities.
 - g. Track all spare parts inventories for the maintenance contractor.
 - h. Log the date, time, cost, and technician of all asset replacements.
 - i. Track work order history and provide reporting on that data for the life of the system.
 - j. Track assets sent for repair.
 4. PM IWOMS features:
 - a. Track and log all scheduled PM activities with date and time.
 - b. Log all inputs and modifications on a user basis.
 - c. Track the amount of time (in days) that has passed since the most recent PM on a device.
 - d. Multiple configurable alerts per device that enable Contractor and NCDOT staff to be notified if PM's have not been completed within certain timeframes.
 5. The Contractor shall configure and maintain the following Responsive and Emergency Maintenance data features in IWOMS:
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- a. Track and log all responsive service calls with date and time.
 - b. The IWOMS may undergo development to receive service calls automatically through integration with the INMS. If this integration is unavailable at the time of the contract, the Contractor shall propose a manual plan for how to reconcile the logged date/time of a device going down in the INOMS with the IWOMS service call.
 - c. Log the date and time when the Contractor technician initially responds to review a service call.
 - d. Log the date and time when a formal diagnosis has been made of the issue that caused the service call.
 - e. Document the details of the issue that caused the service call, the recommended repair proposed by the Contractor technician, and the cost of the repair recommended by the Contractor technician.
 - f. Log the date and time when device repair has been completed by the Contractor Technician.
 - g. Log the date and time when device repair has been validated by NCDOT.
 - h. Have multiple configurable alerts per device that enable Contractor and NCDOT staff to be notified as the RM changes status from response phase, diagnosis phase, and repair phase.
6. ITS Asset Configuration: The Contractor shall perform the initial configuration of data within the IWOMS by adding all existing and proposed devices as defined in the design technical scope.
- a. All assets included in the ITS maintenance scope of work shall be configured in the IWOMS.
 - b. The Contractor shall propose fields (in addition to the fields required in these specifications) to be populated based on their proposed maintenance plan.
7. ITS Asset Maintenance: The Contractor shall maintain and regularly update all data in the IWOMS throughout the term of the maintenance contract.
- a. IWOMS status information will be used to evaluate the Contractor for performance criteria and therefore must be updated regularly.
8. Submittal Requirements: The Contractor shall propose an IWOMS Plan for this project that meets the requirements of this section for configuration and maintenance of ITS assets.

INMS Requirements

1. NCDOT will provide the Contractor access to a NCDOT-owned INMS
 2. General Description: The contractor shall configure, operate, and maintain the data within an INMS. The INMS has the following features, which will be configured and maintained by the Contractor for all assets within this project:
 - a. Logical mapping all ITS Assets with an IP address and all network links on a map interface.
-

- b. Integrated with the IWOMS and the IAMS to provide integrated status data for each device to each system. The Contractor shall propose an alternate plan for updating the status data of each device between systems in the case that integration is unavailable.
 - c. Real-time ping-sweeps of all devices throughout the network and display whether each device is up or down in real-time.
 - d. Multiple configurable alarms per device that enable Contractor and NCDOT staff to be notified whenever a device loses connectivity to the network. This alarm shall also be integrated or coordinated with the IWOMS such that the logged date and time of device downtime is logged in the IWOMS.
 - e. Provide SNMP tracking that shows the status of each communication port in the network.
 - f. Multiple configurable alarms per port that enable Contractor and NCDOT staff to be notified whenever a port status changes on the network. The alarms shall be configurable based on port status change, port status type, device type, port #, connected device type, and port type. This alarm shall also be integrated with the IWOMS such that the logged date and time of network downtime is logged in the IWOMS.
 - g. Track bandwidth utilization across all network links.
 - h. Have advanced alerting features that help reduce the flood of unnecessary network alerts based on configurable trigger conditions.
 - i. Performance analysis functionality where real-time metrics can be compared with historic metrics for performance evaluation.
3. General Requirements:
 - a. The Contractor shall be provided remote access to the INMS by NCDOT through a secure portal.
 - b. The Contractor may request additional INMS features that enable efficient monitoring of the network for review by NCDOT. All requests are subject to NC DIT approval.
 4. INMS Configuration: The Contractor shall perform the initial configuration of the INMS by adding all existing and proposed devices as defined in the design technical scope.
 - a. All IP addressable devices included in the ITS maintenance scope of work shall be configured in the INMS.
 - b. All field switch ports (whether connected to a device or not) shall be configured in the INMS.
 - c. The Contractor may propose additional data fields and information to be populated in the INMS based on their proposed maintenance plan.
 5. INMS Maintenance: The Contractor shall maintain and regularly update all data in the INMS throughout the term of the maintenance contract.
 - a. The INMS shall log all changes to INMS configurations by users of the software.
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6. Submittal Requirements: The Contractor shall propose an INMS Plan for configuration and maintenance of the INMS.

Compensation and Pay-For-Performance

1. The Contractor shall provide an O&M price proposal Appendix Part G – P3: Price Proposal for O&M and Commercialization. The Contractor shall provide a daily nominal (i.e. year of expenditure) O&M unit price for the period of construction that will apply throughout the construction period. O&M quantities during this timeframe have been developed based on NCDOT’s best estimate of the Contractor’s installation schedule to enable like for like comparisons among cost proposals. The installation schedule and quantities may change post award but the bid price per device type per year shall remain fixed until the first re-evaluation event, as described in “ITS Maintenance Services Re-Evaluation” further below.
 2. The Contractor will enter the Pay-For-Performance (“PFP”) period for ITS Maintenance for individual infrastructure components under the following conditions:
 - a. For existing ITS assets, the Contractor will enter the PFP period after completion of the first PM service for a particular asset.
 - b. For ITS assets being constructed by the Contractor, the Contractor will enter the PFP upon completion of system acceptance testing by NCDOT for a particular asset.
 - c. For ITS asset being constructed by others, the Contractor will enter the PFP upon completion of system acceptance testing by NCDOT for a particular asset plus a 30 day burn-in period.
 3. Assets will be maintained at the fixed unit prices per asset class as provided by the Contractor’s Pay-For-Performance Cost Sheet (Appendix Part G – P3: Price Proposal for O&M and Commercialization).
 4. NCDOT’s goal is for each asset within the IAMS to be operating at or above the base availability defined in Tables 4-6 for the defined asset classes. To assist in achieving this goal, NCDOT shall assess performance incentives and disincentives according to the formulas described in this section.
 5. Although NCDOT will continue to perform daily monitoring, the Contractor is required to:
 - a. Provide a Performance Management dashboard that displays % availability and repair time for each asset on a daily and monthly basis. The dashboard shall also provide cumulative reporting and data displays on a per asset type and per asset class basis on a daily and monthly trend basis.
 - b. Monitor the operation of each asset per this specification and per the Contractor’s Performance Management Plan as reviewed and agreed upon by NCDOT. The Contractor shall verify and report the operational performance of each asset.
 - c. The Contractor shall generate monthly monitoring reports showing the daily percent availability of each asset. This reporting and asset monitoring will be the basis upon which incentives and disincentives will be determined under this contract – also known as Pay-For-Performance.
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Preventive Maintenance

1. The Contractor shall perform PM as specified in Preventative Maintenance scope of work of this specification.
2. PM labor and material costs are incidental to the fixed unit daily prices per asset class provided in the Contractor’s Pay-For-Performance Cost Sheet (Appendix Part G – P3: Price Proposal for O&M and Commercialization).
3. Temporary traffic control costs for PM are incidental to the fixed unit daily prices per asset class provided in the Contractor’s Pay-For-Performance Cost Sheet (Appendix Part G – P3: Price Proposal for O&M and Commercialization).
4. The Contractor shall manage any product warranties as part of PM on NCDOT’s behalf.
5. PM includes periodic replacement for electronic devices that have reached their maximum life span. The Contractor shall replace each asset listed in Table 1 below prior to the asset reaching its maximum life span. Devices not listed in Table 1 (such as DMS) do not require periodic replacement.

Table 1: Maximum Asset Life Cycle	
Asset	Maximum Life Span
Camera and Power over Ethernet Injectors	7 Years
UPS	7 Years
UPS Batteries	2 Years
Field Switches	7 Years
Connected Vehicle RSUs and Antennas	5 years

Responsive Maintenance

1. The Contractor shall perform RM as specified in Responsive Maintenance of this specification.
2. RM labor and material costs are incidental to the fixed unit daily prices per asset class provided in the Contractor’s Pay-For-Performance Cost Proposal Sheet (Appendix Part G – P3: Price Proposal for O&M and Commercialization). RM labor and material costs for equipment repair are incidental for all equipment components included in the ITS Asset Maintenance General Scope Section.
3. Temporary traffic control costs for RM are incidental to the fixed unit daily prices per asset class provided in the Contractor’s Pay-For-Performance Cost Sheet (Appendix Part G – P3: Price Proposal for O&M and Commercialization).
4. RM includes response to trouble tickets as discussed in Responsive Maintenance.
5. RM also includes full-device replacement labor and materials for some assets due to maintenance issues and lightening damage. Replacement of these assets are incidental to the fixed unit daily prices per asset class provided in the Contractor’s Pay-For-Performance Cost Sheet (Appendix Part G – P3: Price Proposal for O&M and Commercialization). Asset replacements incidental to RM include:

- a. Cameras, supporting power over Ethernet injectors, and related cabling and power sources.
- b. UPS controllers, batteries, related cabling and power sources.
- c. Cabinet filters, fans, HVAC systems, and related cabling and power sources.
- d. Field switches, fiber optic transceiver modules and power sources
- e. Connected vehicle roadside units, antennas, related cabling and power sources
- f. Fiber distribution units
- g. Fiber optic splice closures and fiber optic splices
- h. Conduit and cable infrastructure repairs including junction boxes, risers, all conduit, all fiber optic cabling, all Ethernet cabling and fiber distribution panels.

Emergency Maintenance

1. The Contractor shall perform emergency maintenance as specified in Emergency Maintenance scope of work of this specification.
2. Emergency maintenance is not included as part of the Pay-For-Performance portion of this contract. The Contractor shall propose unit prices for potential task orders for ITS emergency maintenance in Table 2.
3. Traffic control for emergency maintenance is incidental to each unit item cost provided in Table 2.

Table 2: Emergency Maintenance Line Item Costs		
Emergency Maintenance Task	Unit	Cost
Camera/DMS tree trimming	Per Asset	
Camera/DMS tree removal	Per Asset	
DMS Replacement	1 DMS including structure	
Cabinet Replacement due to Collision	1 Cabinet including necessary fiber repairs or replacement	
Deployment of Emergency Generators	Per Asset	
CMS Troubleshooting and Repair	Per Instance	

NC 811 Locate Services

1. The Contractor shall perform NC 811 Locate services as specified in NC811 Underground Location Services. NC 811 Locate labor and material costs are incidental to the fixed unit daily prices per asset class provided in Appendix Part G – P3: Price Proposal for O&M and Commercialization.

Formulas for Performance Payments

1. The following asset statuses are used to calculate performance payments and non-performance deductions:
 - a. Operational (O): Operational assets must meet the operation criteria listed in Definition of Operational and Demarcation Points of Assets below. Operational status positively impacts the % availability for each asset in computation for pay-for-performance measures.
 - b. Down (D): Down status is used to classify assets that are not fully functional according to Definition of Operational and Demarcation Points of Assets below and are the responsibility of the Contractor to repair or replace. If an asset is marked as Down, there must be a work order in the IWOMS detailing the problem. Down status negatively impacts the % availability for each asset in computation for pay-for-performance measures.
 - c. Transition (T): Transition status indicates an asset that is in the process of being turned over to the Contractor but has not yet been officially handed over. This includes assets in a 30-day burn period. Maintenance responsibility for these devices are outside the scope of the Contractor. Assets will be changed from transition to “operational” when the Contractor assumes maintenance responsibility. Transition status has no impact on the % availability for each asset in computation for pay-for-performance measures.
 - d. Decommissioned (DC): Decommissioned status identifies assets that are no longer included within the scope of this ITS Maintenance contract. These assets may have been removed during a construction project, the Asset ID may have been changed, or the asset may have been removed due to an accident. Decommissioned status has no impact on the % availability for each asset in computation for pay-for-performance measures.
 - e. Waiting (W): Waiting status applies to assets that have failures beyond the demarcation point, such as a hub switch failure. Waiting assets are paid. If the asset was in a Down status prior to one of the conditions stated it should be moved to a Waiting status. The LD clock will be suspended upon the change of status to Waiting. Work will be performed by the Offeror to make the asset operational to the extent possible. This work may be inspected in the field by Department personnel to verify. Waiting status has no impact on the % availability for each asset in computation for pay-for-performance measures.
2. The following equations are used to calculate the percent availability of the assets:
 1. Total Assets = O + D + T + W
 2. Total Maintained Assets = O + D + W
 3. Total Operational Assets = O + W
 4. % Availability = Total Operational Assets / Total Maintained Assets
3. The Contractor shall calculate the monthly ITS Maintenance Pay-for-Performance cost based on accumulative daily asset performance. The costs shall be substantiated and approved by NCDOT’s PM each month. The actual daily base price per asset class will be calculated by multiplying the daily base price for an individual asset class by the performance payment percentage based on percent availability and asset classification as detailed in Tables 4-6

below. Percent availability accuracy shall be measured by rounding to the nearest hour of downtime at a minimum although greater accuracy is acceptable to NCDOT.

Table 4: General Asset Class Performance Payment based on % Availability						
Asset Type	≤ 80%	≤ 85%	< 93%	≥ 93%	≥ 95%	≥ 97%
Cameras	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
DMS	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Hubs	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
CV	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
RWIS	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Signal Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Rest Area Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Traffic Count Station Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Weigh Station Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid

Table 5: Essential Asset Class Performance Payment based on % Availability						
Asset Type	≤ 85%	≤ 90%	< 95%	≥ 95%	≥ 97%	≥ 98%
Cameras	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
DMS	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid

Hubs	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
CV	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
RWIS	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Signal Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Rest Area Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Traffic Count Station Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Weigh Station Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid

Table 6: Vital Asset Class Performance Payment based on % Availability						
Asset Type	≤ 90%	≤ 93%	< 97%	≥ 97%	≥ 98%	≥ 99%
Cameras	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
DMS	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Hubs	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
CV	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
RWIS	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Signal Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid

Rest Area Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Traffic Count Station Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid
Weigh Station Comm	0.60 * Bid	0.70 * Bid	0.80 * Bid	Bid	1.03 * Bid	1.05 * Bid

Non-Performance Disincentives

1. NCDOT shall enforce non-performance disincentives for each asset type and class each day the Contractor fails to repair an asset according to the allowable repair times per asset class and asset classification. If Contractor exceeds the allowable repair time, the following equation is used to calculate the non-performance disincentive per asset classification for each day the asset is down after the allowable repair time:

- a. Non-Performance Disincentive = (Bid * T * M) + P, where:
 - i. T = Allowable repair time for asset class and classification in 24-hour calendar days
 - ii. M = Multiplier per asset class per asset classification
 - iii. P = Non-performance disincentive for the previous calendar day.
- b. The requirements for the non-performance disincentives are detailed in Table 7 below:

Table 7: Non-Performance Disincentives						
Asset Class	General		Essential		Vital	
Asset Type	Allowable Repair Time (T)	Multiplier (M)	Allowable Repair Time (T)	Multiplier (M)	Allowable Repair Time (T)	Multiplier (M)
Hubs	2	2	1	4	0.5	28
All Others	14	1	7	2	2	7

- c. Contractor bids per asset type and asset class must be reasonable to ensure contract disincentives are effective. If the contractor's combined overall bid price is less than 20% of the engineer's estimate, then the engineer's estimate (reduced by 20%) for each asset type and asset class will be used to enforce non-performance disincentives.

d. Non-performance disincentive example A:

- i. A DMS with an asset class of essential is down for 17 days and the daily bid amount for an essential DMS was \$1.00.
 1. $T = 7$ days (according to Table 7 for essential asset class)
 2. $M = 2$ (according to Table 7 for essential asset class)
 3. Disincentive per day over T days = $\$1.00 \times 7 \times 2 = \14.00
 4. Days over $T = 17 - 7 = 10$
 5. Total Disincentive = $10 \times \$14.00 = \140.00

e. Non-performance disincentive example B:

- i. A Hub with an asset class of vital is down for 2.5 days and the daily bid amount for a vital hub was \$100.00.
- ii. $T = 0.5$ days (Table 7)
- iii. $M = 28$ (Table 7)
- iv. Disincentive per day after 0.5 days = $\$100.00 \times 0.5 \times 28 = \$1,400$
- v. Days over $T = 2.5 - 0.5 = 2$
- vi. Total Disincentive = $\$1,400 \times 2 = \$2,800$

2. In addition to asset-based non-performance disincentives for each asset type and asset class, NCDOT shall enforce non-performance disincentives for each day the Contractor fails to repair fiber infrastructure according to the allowable repair times set forth below:

- a. Trunk Line Fiber Damage: Trunk line fiber damage shall be repaired within 48 hours. For each day thereafter, the contractor shall be charged \$1000 per day.
- b. Device Line Fiber Damage: Device line fiber damage shall be repaired within 96 hours. For each day thereafter, the contractor shall be charged \$500 per day.
- c. Preventive Maintenance Fiber Repair: The Contractor shall consistently perform OTDR tests on dark fiber within both the Trunk Line and Device Line fiber cables. When the OTDR tests show fiber losses have increased by 10 dbm (from initial construction testing) along any stretch of fiber from point to point, the contractor shall schedule repair of the fiber cable or termination point within 30 days. For each day thereafter, the contractor shall be charged \$250 per day.

Performance-Based Non-Compliance and Termination

1. The Department at their sole discretion, may require a “Noncompliance Remedial Plan” when O&M performance is non-compliant as triggered by the non-compliance point system described below.
 - a. Non-Compliant Performance:

- i. The Department will use a points system to define non-compliant performance on the part of the contractor. If the contractor exceeds 9 points at any time during the contracted period, the Department may trigger a Noncompliance Remedial Plan”.
- ii. Noncompliance performance point accrual: The Department will use Table 8 to determine when and how many points the Contractor accrues for non-compliant performance:

Table 8: Noncompliance Performance Points	
Unsatisfactory Performance Description	Points
Monthly % availability for ANY general asset type remains below 85% for two months in a row	2
Monthly % availability for ANY essential asset type remains below 90% for two months in a row	2
Monthly % availability for ANY vital asset type remains below 93% for two months in a row	2
Monthly % availability for ANY general asset type remains below 85% for three months in a row	3
Monthly % availability for ANY essential asset type remains below 90% for three months in a row	3
Monthly % availability for ANY vital asset type remains below 93% for three months in a row	3
Monthly % availability for ANY general asset type remains below 85% for four months in a row	3
Monthly % availability for ANY essential asset type remains below 90% for four months in a row	3
Monthly % availability for ANY vital asset type remains below 93% for four months in a row	3
More than 25% of assets in any asset class exceed allowable repair time in 1 year.	3
More than 50% of assets in any asset class exceed allowable repair time in 1 year.	5
More than 75% of assets in any asset class exceed allowable repair time in 1 year.	8
Two PM cycles are not provided for 100% of devices within 1 year	2
PM Quality Reviews Score an Average of 8 or less within 1 year	2

- iii. Satisfactory performance points: The Department will use Table 9 to determine when and how many points the Contractor may remove from their tally of noncompliance performance points during times of satisfactory performance:

Table 9: Satisfactory Performance Points	
Scenario for Reduction of Performance Points	Points
Contractor does not accrue unsatisfactory performance points for 1 year	2
Contractor does not accrue unsatisfactory performance points for 2 years	4
Contractor does not accrue unsatisfactory performance points for 3 years	8
Monthly % availability for all general assets are above 95% for 2 months and Monthly % availability for all essential assets are above 97% for two months and Monthly % availability for all vital assets are above 98% for three months in a row.	1
Monthly % availability for all general assets are above 95% for 2 months and Monthly % availability for all essential assets are above 97% for two months and Monthly % availability for all vital assets are above 98% for four months in a row.	1
Monthly % availability for all general assets are above 95% for 2 months and Monthly % availability for all essential assets are above 97% for two months and Monthly % availability for all vital assets are above 98% for five months in a row.	2
Monthly % availability for all general assets are above 95% for 2 months and Monthly % availability for all essential assets are above 97% for two months and Monthly % availability for all vital assets are above 98% for six months in a row.	2

- 2. Without prejudice to any other rights the Department may have under this Agreement, if a Noncompliance Remedial Plan Trigger occurs, the Contractor shall within fourteen (14) days of such occurrence submit to the Department a remedial plan (“Noncompliance Remedial Plan”) for the Department’s approval.
- 3. A Noncompliance Remedial Plan must set out specific actions and an associated schedule to be followed by the Contractor to improve its performance and reduce the number and frequency of Noncompliance Events occurring in the future. Such actions may include, without limitation:

- a. changes in organizational and management structure;
 - b. revising and restating management plans and procedures;
 - c. improvements to quality control practices;
 - d. increased monitoring and inspections;
 - e. changes in Key Personnel and other important personnel;
 - f. replacement of Contractors; and
 - g. other reasonable measures.
4. The Contractor shall implement any approved Noncompliance Remedial Plan in accordance with its terms.
 5. After being placed on a Noncompliance Remedial Plan, if the contractor is unable to improve performance in accordance with department expectations by reducing the non-performance points below 10 points within 6 months and below 5 points over 2 years, the Department may terminate the contract at their sole discretion. For the avoidance of doubt, contract termination means termination of the Operations, Maintenance and Commercialization Agreement (in the event that Track 1 is the Preferred Procurement Track) or termination of the Comprehensive Agreement (in the event that Track 2 is the Preferred Procurement Track).

Definition of Operational and Demarcation Points of Assets

1. The operational definitions and demarcation points defined in this section apply to NCDOT's assets as they relate to Pay-for-Performance.
 2. Cameras:
 - a. A Camera is considered "Operational" for daily status purposes when:
 - i. The camera is communicating with the backbone network;
 - ii. Usable video is present at the demarcation point; and
 - iii. Pan/tilt/zoom (PTZ) control is functional from the demarcation point.
 - b. Demarcation:
 - i. For fiber-connected assets, the demarcation point is at the field-side port of the NC DIT managed hub switch.
 - ii. For cellular modem connected assets, the demarcation point is at the field-side connection to the cellular modem, but the contractor must ensure the cellular modem must have an active connection to the service provider.
 3. DMS:
 - a. A DMS is considered "Operational" for daily status purposes when:
 - i. The sign is communicating with the backbone network;
 - ii. The sign responds to commands from the demarcation point;
-

- iii. 95% or more of sign display pixels are operating properly, and the acceptable level of failed pixels do not render the display message illegible; and
 - iv. The brightness of the sign is correct for the ambient light present, based on readings of the photocell system.
- b. Demarcation:
- i. For fiber-connected assets, the demarcation point is at the field-side port of the NC DIT managed hub switch.
 - ii. For cellular modem connected assets, the demarcation point is at the field-side connection to the cellular modem, but the contractor must ensure the cellular modem must have an active connection to the service provider.
4. Hubs
- a. A Hub is considered “Operational” for daily status purposes when:
- i. UPS is providing conditioned power to the hub switch;
 - ii. HVAC is operating within environmental monitoring limits;
 - iii. Doors, roof, and walls are free of damage and graffiti;
 - iv. Grounds are kept free of tall grass, limbs, and debris
5. CV
- a. A Connected Vehicle System is considered “Operational” for daily status purposes when:
- i. The RSU is communicating with the backbone network;
 - ii. The RSU has full capabilities and responds to commands from the demarcation point;
- b. Demarcation:
- i. For fiber-connected assets, the demarcation point is at the field-side port of the NC DIT managed hub switch.
 - ii. For cellular modem connected assets, the demarcation point is at the field-side connection to the cellular modem, but the contractor must ensure the cellular modem must have an active connection to the service provider.
6. RWIS
- a. A RWIS is considered “Operational” for daily status purposes when:
- i. The RWIS has connectivity to the cloud-based software application and full operational capabilities
- b. Demarcation:
- i. Since the RWIS software is cloud-based, there is no demarcation for ITS Maintenance Services.
7. Signals, Weigh Stations, Rest Areas, and Traffic Count Stations
-

- a. A signal, weigh station, rest area, or traffic count station is considered “Operational” for daily status purposes when:
 - i. The field switch in the signal cabinet, weigh station building, or rest area is communicating with the backbone network.
- b. Demarcation:
 - i. The upstream demarcation point is at the field-side port of the NC DIT managed hub switch.
 - ii. The downstream demarcation point is anything connected to the field switch downlink ports in the first cabinet of the closed loop signal system or Traffic Count Station. The downstream demarcation point is anything connected to the field switch downlink ports on the field switch in a rest area or weigh station building.

ITS Maintenance Services Re-Evaluation

As a result of aligning a long-term O&M services (i.e. ITS Maintenance Services) and commercialization contract, there is a need to enable flexibility for the Developer and the NCDOT with respect to the scope and price of O&M services throughout the contract term. This need is based on several elements:

- ITS elements may become technologically obsolete over the contract term. New technology may become available and may require O&M services. Re-evaluation of O&M services in 5-year increments will enable NCDOT to remove O&M services for obsolete technology while adding O&M for new technology. For example: Dynamic Message Signs may become obsolete as automated and connected vehicle technology is further adopted.
- NCDOT is unable to predict the changes in device quantities over the entire contract term. With increases in quantities, both the Developer and NCDOT may be subject to changes in cost. For example, if over a 10 year period, NCDOT determines that implementation of cameras every half-mile along each of the corridors is appropriate, this would drastically increase the amount of field staff, camera PMs, camera RMs, fiber optic network maintenance, and general maintenance management through the IAMS, IWOMS, and INMS.

In order to achieve this flexibility, as part of the O&M contract mechanism, the Department has provided for a “re-evaluation” that will be conducted every 5 years. There are three components to the ITS Maintenance Services re-evaluation:

- ITS Maintenance Services price re-evaluation
- ITS Maintenance Services re-procurement
- ITS Maintenance Services scope re-evaluation

The descriptions of each of the above terms are provided below.

ITS Maintenance Services Price Re-Evaluation and Re-Procurement

At each ITS Maintenance price re-evaluation event, price re-evaluation is completed first, and if the Department and the Developer cannot agree on the outcome, re-procurement is conducted.

Re-procurement will not entail re-procuring the Developer, but rather re-procuring the ITS Maintenance sub-contractor (sub-contracted to the Developer to perform the ITS Maintenance Services). If the ITS Maintenance sub-contractor is the same entity as the Developer, then re-procurement means that the Developer will be instructed to employ a new ITS Maintenance sub-contractor that is competitively procured.

The price re-evaluation procedure, conducted every 5 years, is as follows:

- The Developer proposes a cost to NCDOT for ITS Maintenance Services for 5 years.
- The Developer then compares its cost proposal to prevailing market costs. NCDOT anticipates that the most effective method of cost comparison will be achieved through a competitive bid by the Developer such that at least 3 bids are received.
- The Department and the Developer will begin planning 6 months ahead of the price re-evaluation date in order to allow sufficient time to complete the price re-evaluation procedure.
- If the mean market cost is less than 95% of the Developer's proposed costs, there will be an adjustment to the ITS Maintenance Services price, to the mean market cost. Outlier bids that are within +/- 20% of the mean market cost will not be factored into the mean market cost calculation. This change in price will be reflected in the ITS Maintenance compensation and pay-for-performance regime and will include a formulaic adjustment to incentivize the Developer to control its costs and manage its performance.
- If the mean market cost is between 95%-100% of the Developer's proposed price, the proposed price for O&M services may remain as-proposed.
- If the mean market cost is greater than the Developer's proposed price, the proposed price for O&M services will remain as-proposed. This means that the Developer is the most efficient provider in the market.
- The Department has the right to inspect the Developer's and ITS Maintenance sub-contractor's cost information to confirm cost details. Full transparency of cost information is needed for price re-evaluation to function effectively.
- If the Department and the Developer cannot agree on the price adjustment or if the Department is not satisfied that there has been a robust price re-evaluation procedure, then re-procurement will be initiated.

ITS Maintenance Services Scope Re-Evaluation

Over the contract term, the scope of ITS Maintenance Services will also be re-evaluated every 5 years. The ITS Maintenance Services scope re-evaluation will include¹² the addition and/or removal of components of scope of services.

¹² It is anticipated that the addition and/or removal of up to 25% of a quantity of an asset class (e.g. DMS) will not trigger a scope re-evaluation.

In the event of the Department’s decision to remove¹³ components of the ITS Maintenance scope of services, the Developer will be notified 12 months before a scheduled ITS Maintenance re-evaluation in order to allow sufficient time for the Developer to implement the change appropriately. This change in scope will be reflected in the ITS Maintenance compensation and pay-for-performance regime and will include a formulaic adjustment to incentivize the Developer to control its costs and manage its performance.

In the event of the Department’s decision to add¹⁴ components of the ITS Maintenance scope of services, the Developer will be notified 6 months before a scheduled ITS Maintenance re-evaluation in order to allow sufficient time for the Developer to implement the change appropriately. This change in scope will be reflected in the ITS Maintenance compensation and pay-for-performance regime and will include a formulaic adjustment to incentivize the Developer to control its costs and manage its performance.

The price contractualized for the addition of components to the ITS Maintenance scope of services will be subject to the ITS Maintenance Services price re-evaluation procedure, conducted when new scope elements are added. If the Department and the Developer cannot agree on the price or if the Department is not satisfied that there has been a robust price re-evaluation procedure, then re-procurement will be initiated.

¹⁴ With respect to the addition of components of scope of services only, at any point over the contract term, the Department may add components of scope of services subject to a 6 month notice period, and subject to the ITS Maintenance Services price re-evaluation procedure.

F-1.3. Commercialization Scope of Work

The Proposer will have the right to install, operate, and maintain additional conduit(s), fiber strands, and related communications infrastructure and components for commercial uses for the length of the contract term.

The Proposer will be responsible for all activities associated with commercialization (i.e. NCDOT is not responsible for any contractual administration with respect to third-party commercial entities).

Assets Installed in the DB Scope of Work for Commercialization

As part of the DB Scope of Work, the Department will be installing three conduits with two conduits housing fiber-optic cables for NCDOT's use. The third conduit, without fiber-optic cable, may be used for commercialization. Additional conduit and fiber-optic cables may be installed by the P3 Entity for commercialization. All additional commercialization conduits and fiber-optic cables installed in excess of the requirements stated in the DB Scope of Work are subject to the Location and Ownership of Commercialization of Assets provisions in the Comprehensive Agreement Terms (Appendix Part E – P3: P3 Comprehensive Agreement Terms).

F-1.4. P3 Information Submittal

F-1.4a. Acknowledgement of the Comprehensive Agreement Terms Review (See Appendix Part F – P3: Acknowledgement of Comprehensive Agreement Terms Review)

Proposers must acknowledge that they have reviewed the Comprehensive Agreement Terms for the Project and identify any changes or specific modifications in writing that the Proposer considers essential for entering into a Contract Agreement with the Department for this Project. The Department reserves the right to consider and accept, in its sole and absolute discretion, any requested changes to the Comprehensive Agreement Terms.

F-1.4b. Transmittal Letter

A duly authorized official of the Proposer must execute and submit a Transmittal Letter. The Transmittal Letter must include, but is not limited to, the following:

1. Proposer's Procurement Track
2. Proposer's understanding of the Department's P3 requirements
3. Proposer's plan to maximize value for the Department
4. Proposer's proposed upfront payment to the Department at the contract execution date and proposed annual revenue share over the life of the contract
5. Proposer's preferred approach to phasing the P3 scope of work
6. Proposer's approach to managing interfacing with other highway construction contracts

F-1.4c. Table of Contents

Include a clear identification of the material by section and by page number.

F-1.4d. Executive Summary

Proposer must summarize its understanding of the work to be performed and make a commitment to perform the work necessary. This section should summarize the key points of the Submittal. The Executive Summary shall be written in a non-technical style and shall contain sufficient information for the TRC members to become familiar with the Proposer's ability to satisfy the requirements of the RFP.

F-1.4e. Prime and Subcontractor Overviews

Proposer must provide a brief history and description of its business organization and its expertise in providing P3 services and experience. The description must include the location of offices and the number and types of executive and professional personnel, engineers, technicians, specialists, consultants or other relevant professional staff in each office, consultants or other relevant professional staff in each office. Proposer must also discuss its firm's presence in and commitment to the State of North Carolina and include a discussion of the specific expertise and services that distinguish its firm.

If one proposes to subcontract any portion of the work described in its response, the subcontracted firm or firms must be identified in this section. The role of the firm or firms should be explained along with a description of the specific expertise and services that the firm or firms contribute to

the overall value of the proposal. Furthermore, the Proposer should provide an organizational chart which sets forth the Proposer's structure, teaming arrangements and reporting requirements.

F-1.5f. Key P3 Personnel

With respect to the O&M Scope of Work (Part F-1.2), Proposer shall provide:

- The names, proposed roles, background and experience, current professional licenses and certifications, office location and availability of the personnel that would perform the scope of work.
- Identify the primary person(s) who will be responsible for managing the relationship with the Department throughout the contract term.
- Detailed resumes (indicating overall experience, professional registrations, and any specific experience relevant to the nature and scope of the Project) for each of the key O&M personnel of the proposed team (limit each resume to two (2) pages).
- A minimum of two (2) references each for the key O&M personnel. The references, in each case, must be from projects on which the key O&M personnel was involved during the past five years. References shall be provided by previous clients with whom the key OMC personnel have worked, and shall include the reference's name, position, company or agency, and current contact details (including current address, e-mail address, and telephone number). Proposers are requested to verify the accuracy of the reference's contact details, and are advised that if the contact details are not correct, the Department may elect to exclude the experience represented by such reference in determining the key OMC personnel's qualifications and experience.
- An organizational chart of the key O&M personnel, the relationship between their respective roles, and their previous experience (if any) of working together in such roles. Briefly describe the relevance of each key O&M personnel's experience to this Project and why such experience will provide value to the Department. The organizational chart shall indicate the primary point(s) of contact who will work closely with the Department.
- A description of the Proposer's approach to ensuring that required qualified resources are available to perform the scope of work throughout the contract term. A table/chart indicating estimated availability of designated key O&M personnel and other resources to work on this Project shall be included. While the Department recognizes the impact of personnel availability and scheduling conflicts upon Proposers, Proposers are urged to designate and submit only those individuals they reasonably believe will be available for, and intend to assign to work in, the key O&M personnel role(s).

With respect to the Commercialization Scope of Work (Part F-1.3), Proposer shall provide:

- The names, proposed role(s), background and experience, and availability of the personnel that would perform the scope of work.
- Detailed resumes (indicating overall experience, professional registrations, and any specific experience relevant to the nature and scope of the Project) for each of the key Commercialization personnel of the proposed team (limit each resume to two (2) pages).

- Identify the primary person(s) who will be responsible for managing the relationship with the Department throughout the contract term.
- A minimum of two (2) references each for the other key Commercialization personnel. The references, in each case, must be from projects on which the key Commercialization personnel was involved during the past five years. References shall be provided by previous clients with whom the key Commercialization personnel have worked, and shall include the reference's name, position, company or agency, and current contact details (including current address, e-mail address, and telephone number). Proposers are requested to verify the accuracy of the reference's contact details, and are advised that if the contact details are not correct, the Department may elect to exclude the experience represented by such reference in determining the key Commercialization personnel's qualifications and experience.
- An organizational chart of the key Commercialization personnel, including the relationship between their respective roles, and their previous experience (if any) of working together in such roles. Proposer should briefly describe the relevance of each key Commercialization personnel's experience to this Project and why such experience will provide value to the Department. The organization chart shall indicate the primary point(s) of contact who will work closely with the Department.

F-1.5. O&M Services Submittal

F-1.5a. Approach to Services

Proposers must describe in detail the approach for O&M Services to be performed as defined in the O&M Scope of Work (Part F-1.2). The approach section shall present the methodology that the Proposer is planning to follow for each O&M service, provide a description of all required service deliverables/outputs. The Proposer shall provide process flow charts showing how interactions and work coordination with the Department shall take place. The Department encourages innovation in service delivery if substantiated and proven to be effective. Any such innovation shall be highlighted by the Proposer in their approach to O&M Services.

F-1.5b. Relevant Experience

Proposers shall provide a narrative statement regarding O&M Services experience and expertise as it relates to O&M Scope of Work (Part F-1.2). Additionally, the Proposer shall include a statement regarding your understanding of the O&M Services as outlined in the O&M Scope of Work (Part F-1.2) and your ability to provide O&M Services in accordance with the same.

Proposer shall describe the Proposer's experience in the following areas:

1. Experience in providing O&M Services that are comparable to services sought by the Department to other clients, especially other governmental entities and / or similar public/private sector transportation organizations and/or private sector telecommunication firms;
2. Business practices that enable the Proposer to perform the required O&M Services and related tasks in an efficient, timely and expeditious manner; and

3. Any other specialized or innovative O&M Services the Proposer may offer to the Department.

Proposer shall describe at least three (3) and no more than five (5) relevant reference projects performed within the past ten (10) years that are similar in size, complexity, and services sought by the Department for this Project. The reference projects should demonstrate the firm’s experience repairing and providing corrective maintenance for fiber optic cable and related infrastructure.

For the purpose of this RFP, any experience listed as a relevant qualification shall be those in which the Proposer directly participated in the O&M Services – for required information, refer to table below.

Reference Project # 1: Project Name	
Client / Entity Name	
Period of Services Provided	
O&M Services Provided	Describe services provided, including repairing and corrective maintenance for fiber optic cable and related infrastructure; and experience in operating and maintaining a Fiber Management System
Project’s Performance to date	Key performance measures
Project Reference	Provide the name of the client entity, including the name, address, and telephone number of the responsible official of the client, company, or agency who may be contacted.

Proposer shall provide a list of three clients for which its firm has performed similar work, as described in this RFP, within the past five (5) years. Projects referred to should be identified and the name of the client entity shown, including the name, address, and telephone number of the responsible official of the client, company, or agency who may be contacted.

F-1.6. Commercialization Services Submittal

F-1.6a. Approach to Services

Proposer must describe its approach to providing Commercialization services as described in Commercialization Scope of Work (Part F 1.3) of the RFP, for the Commercialization Assets.

The Commercialization Services approach should demonstrate not only the Proposer’s understanding of commercialization, but also key considerations customized to North Carolina’s

geographic region and the market space in which the network will operate. The narrative shall clearly outline the following component factors in the Proposer’s approach, separately for each of the Commercialization Services. For each Commercialization Services, the Proposer shall outline the following:

F-1.6b. Commercialization Market Size

Proposer’s view on the network’s addressable market with specific references to customer types, customer counts, locations of potential customers, potential commercial contract types and length, pricing, demand drivers, end customer use cases, and competition.

F-1.6c. Proposer’s Action Plan

Proposer should describe the plans to market to and acquire customers in each identified commercialization activity utilizing the Commercialization Assets covering the entire network throughout the Contract Term. At a minimum, the action plan should address the following sub-factors:

- a. Proposer’s marketing action plan during the DB phase (i.e. “Pre-Market Commercialization”), ramp-up phase, and once the network reaches commercial maturity.
- b. Proposer’s specific plans for addressing various customer segments, including how it would address market entry barriers and existing competition (if Proposer is a newer entrant to the market space within which the network will operate), or how it would leverage its existing customer bases and/or assets to generate commercial utilization for the network.
- c. To the extent possible, Proposer should provide a resource-based narrative around how components of its commercialization plan shall leverage the Fiber Infrastructure provided for the Project, in terms of lengths (fiber-miles), geographical sections needed, and strand count for each Commercialization Services intended to be included in the Proposer’s action plan.

F-1.6d. Commercialization Services O&M Plan

Proposer shall provide a high-level view on any additional incremental operating or maintenance costs or investments that it expects to incur in servicing its commercial customers, which may include the hiring of employees, the development of new assets, or any other ongoing costs as it relates to setting up profitable Commercialization Services throughout the length the Contract.

F-1.6e. Commercialization Expansion Plans

Proposer should describe any views it may have on potential network expansion or lateral investment opportunities that the Proposer may view as commercially and financially viable, including key metrics around any additional R/W needed, potential resources required from the Department (if any), and potential impacts on the Department;

Proposer should provide any available verifiable evidence to substantiate its views as outlined in the approach to commercialization narrative, including any secured customer contracts, letter of interest from potential customers, any demonstrable customer demand for the network from the

Proposer’s existing customer base, or any other quantifiable evidence. Customer contracts and other forms of tangible evidence, such as letters of interest, shall be provided as attachments to P3 Information Submittal Requirements and can be marked as confidential information if need be. The reasonability of the commercialization approach will be determined based on the Department’s sole discretion, considering market precedents, existing market conditions, the Department’s estimates, tangible evidence supporting the Proposer’s approach, and the level of the Proposer’s due diligence conducted to date.

F-1.6f. Coordination with the Department

Proposer shall describe its proposed approach for coordination, tracking and sharing of information such as, on-going asset performance metrics, Commercialization Services contracts and revenues, and plans for developing new Commercial Assets (i.e. laterals, towers, etc.) with the Department on a regular interval. Proposer shall also outline what information and coordination it will require from the Department.

F-1.6g. Relevant Experience

Proposer shall provide a narrative statement regarding the Proposer’s commercialization experience and expertise as it relates to Base Case Financial Model (Part F-1.8) of this RFP.

Proposer should describe at least two (2) and no more than five (5) relevant reference projects performed by the Proposer’s team within the past ten years that are similar in size, complexity, and services sought by the Department for this Project. The reference projects should demonstrate the firm’s direct experience with providing broadband commercialization services for revenue generation as required in the RFP. Only information provided within this Submittal will be evaluated against criteria set out in of the RFP.

In addition to the narrative, with respect to each relevant project or experience included in the Proposal, the Proposer shall include relevant information about projects/entities for which the services were provided – for required information, refer to table below.

Reference Project # 1: Project Name	
Client / Entity Name	
Period of Services Provided	
Categories of Services Provided	Include all services that apply: <ul style="list-style-type: none"> ● Dark Fiber Services ● Lit Services ● Cellular Connected Vehicle Sites Wireless Services ● Other _____

Reference Project # 1: Project Name	
Summary of Services Provided	Descriptions of the Commercialization Services provided and the role of the Proposer. If O&M Services were provided along with Commercialization Services, please describe here.
Project's Performance to date	Key performance measures, including revenue sources and total amount of revenues generated / under contract
Revenue Sharing	Description of revenues shared with project sponsor (e.g. upfront, revenue share over time, committed revenue over time, etc.) and amounts
Project Reference	Provide the name of the client entity, including the name, address, and telephone number of the responsible official of the client, company, or agency who may be contacted.

F-1.7. P3 Price Proposal Submittal

Proposers shall submit a DB price as instructed in Appendix Part A – Final Request for Proposals, Design-Build Project. In addition, Proposers shall submit using the template provided as part of Appendix Part G – P3: Price Proposal for O&M and Commercialization of this RFP. Proposers shall pay special attention to additional instructions provided in the Price Proposal and ensure that no changes to the format/template are made to the Price Proposal without express written approval by the Department. Any error(s) / omission(s) in the Price Proposal shall be brought to the Department's attention in a timely manner so that the Department can provide guidance to the Proposers.

Proposer must complete all applicable tabs/sheets in Appendix Part G – P3: Price Proposal for O&M and Commercialization per the directions provided. Any costs not provided in the Price Proposal will be assumed as no charge to the Department.

The Department will reimburse the selected Proposer for work satisfactorily performed after execution of a written Contract and the start of the Contract Term, in accordance with Contract requirements, and only after the Department has issued a notice to proceed.

F-1.8. Base Case Financial Model Submittal

Proposers shall furnish the Base Case Financial Model to provide supporting assumptions to its projections provided in the Price Proposal in response P3 Price Proposal Submittal (Part F-1.7). While the model mechanics will be at the Proposer's discretion, it should clearly outline the Proposer's calculations used to build out the Price Proposal, including build-up (bottom up and/or top down) of the commercialization revenue calculations and rationale used. The Base Case Financial Model shall be provided as a dynamic Microsoft Excel file, with clearly marked inputs and outputs.

The Base Case Financial Model must provide supporting calculations for the following inputs in the Price Proposal:

- Revenues from Commercial Activities
- O&M Costs from Commercial Activities
- Net Commercialization Cash Flows

The Base Case Financial Model must include the projected capital expenditures needed for the generation of Revenues from Commercial Activities. The Department reserves the sole discretion to assess the reasonability of the Proposer's due diligence conducted and observable evidence for the purpose of evaluating the Proposal.

F-1.9. P3 Evaluation Criteria

F-1.9a. P3 Proposal Evaluation

Qualified P3 Proposals will be evaluated according to the Proposer's P3 Technical Proposal and P3 Price Proposal and assigned a score out of 100 points. The highest score will determine the Best P3 Proposal.

The P3 Proposer's Technical Proposal will be evaluated out of 10 points according to the evaluation criteria in Part F-1.9b, in order to derive the Proposer's P3 Technical Proposal. The Proposer's P3 Technical Proposal (10 points) includes the Proposer's DB Technical Proposal (5 points) and OMC Technical Proposal (5 points).

The P3 Proposer's Price Proposal will be evaluated out of 90 points relative to other qualified P3 Price Proposals, according to the formula below, in order to derive the Proposer's P3 Price Proposal Score:

- If the P3 Price Proposal is the lowest price out of all qualified P3 Proposals:
Score = 90 points
- If the P3 Price Proposal is not the lowest price out of all qualified P3 Proposals:
Score = (Lowest Price) / (P3 Price Proposal) x 90 points

The P3 Price Proposal is the sum of the following:

- Add: The P3 Proposer's DB Price Proposal
- Add: NPV¹⁵ over the contract term of the price of the O&M scope of work
- Subtract: The proposed Guaranteed Upfront Payment to the Department
- Subtract: The NPV¹⁶ over the contract term of the proposed Annual Guaranteed Revenue Share
- Subtract: The NPV¹⁷ over the contract term of the proposed Annual Speculative Net Cash Flow Share

¹⁵ The discount rate to be used will be 2.82% p.a..

¹⁶ The discount rate to be used will be 2.82% p.a..

¹⁷ The discount rate to be used will be 14.00% p.a..

The Proposer’s P3 Technical Proposal Score (out of ten points) and the Proposer’s P3 Price Proposal Score (out of 90 points) will then be combined to calculate the Proposer’s P3 Proposal Score. The Proposer with the highest P3 Proposal Score will be the Best P3 Proposal.

The State Contract Officer will provide each Proposer with the Proposer’s P3 Technical Proposal Score, P3 Price Proposal Score, and P3 Proposal Score when the Department makes a Preferred Proposer and Preferred Procurement Track announcement.

Proposers must take note of the instructions in Appendix Part G – P3: Price Proposal for O&M and Commercialization. In order to maximize value, the Department’s financial objective is to close any funding gap that may exist using the Guaranteed Upfront Payment, and to cover its annual O&M expense (i.e., the O&M Price Proposal) over the term of the contract, with the Annual Guaranteed Revenue Share.

F-1.9b. Technical Proposal and Evaluation Criteria – DB Portion of P3 Proposals

Decisions based on cost alone will not establish the design standards for the Project. DB Technical Proposals shall address the technical elements of the design and construction of the Project. The Technical Review Committee will consider the understanding of the Project, the anticipated problems and the solutions to those problems, in addition to other evaluation criteria identified herein.

The P3 Team’s DB Technical Proposal shall be developed using narratives, tables, charts, plots, drawings and sketches as appropriate. The purpose of the DB Technical Proposal is to document the P3 Team's understanding of the Project, demonstrate the P3 Team’s capabilities to complete the Project, document their selection of appropriate design criteria and state their approach and schedule for completing all design and construction activities.

The review of design plans by the Department is not intended to reflect a reviewer’s personal preferences, but rather to ensure that all contract requirements are met, sound engineering judgment is exercised by the P3 Team, and that the P3 Team adheres to all referenced documents, including but not limited to, design standards, codes, memos and manuals. As such, the Award of the P3 contract does not in any way imply that the NCDOT accepts the details of the DB Technical Proposal submitted by the P3 Team.

The Technical Proposal will be evaluated in each of the following major categories:

EVALUATION FACTORS	POINTS
1. Management	1
2. Responsiveness to Request for Proposal	1.5
3. Schedule and Milestones	1.5
4. Maintenance of Traffic and Safety Plan	1

TECHNICAL PROPOSAL EVALUATION CRITERIA

1. Management - 1 point

Provide a comprehensive Organizational Chart that identifies the design, quality and construction management, and the relationships with subconsultants / subcontractors. The Organizational Chart shall identify all firms and personnel changes (additions, substitutions, deletions) to the Design-Build Team since submittal of the Statement of Qualifications.

Design-Build Team Management

- Describe the Design-Build Team’s concept of design management and identify key positions and subordinate organizational units.
- Describe how the various design disciplines will be coordinated, including how designs developed by different firms and offices will be integrated / consistent.
- Describe how design personnel will interface with the construction personnel.
- List projects, including description and similarity to the subject project that the Design-Build Team’s designer(s) have developed Transportation Management Plans and ITS Plans.
- Describe the Design-Build Team’s concept of the project construction management organization and how it interrelates with the other elements of the Design-Build Team’s organization for the project.
- Describe the work categories that the Design-Build Team anticipates will be performed by the Design-Build Team’s own direct labor force and those categories that will be performed by subcontractors.

Quality Management

- Describe how the Design-Build Team will comply with the design and construction quality control requirements. Specifically, include a narrative that describes the Design-Build Team’s understanding of the Department’s quality control philosophy and how the Design-Build Team will implement it for this project.
- Describe any significant design and / or construction quality control issues experienced in the last ten years and how those issues will be addressed for this project.

2. Responsiveness to RFP – 1.5 points

Natural Environmental Responsibility

- Describe the Design-Build Team’s approach to addressing environmental concerns within the project boundaries.
- Describe the Design-Build Team’s understanding of the overall approach to permitting and the Team’s comfort level with obtaining permit modifications if the Team’s design requires. Identify efforts to minimize impacts on wetlands, streams, riparian buffers

and other environmentally sensitive areas. Describe any temporary impacts and associated minimization approaches.

- Identify methods of construction in wetlands, streams and riparian buffers.
- Describe all project / construction related NOV's received by any team member within the last five years on projects in the United States and the disposition of each listed NOV.
- Describe the Design-Build Team's approach to Sedimentation and Erosion Control for the project.

Design Features

- Provide a detail of a typical installation along the roadway and on structures to include any special design features or construction techniques needed.
- Identify proposed deviations to the preliminary design provided by the Department, not required herein.
- Describe the Design-Build Team's approach to avoid and minimize impacts to existing utilities within the existing right of way. In addition, describe the Teams approach to minimize or prevent future relocations.

3. Schedule and Milestones – 1.5 points

- Provide a brief narrative description of the Design-Build Team's proposed plan for performing construction on the project. The description shall include at least the following:
 - Indicate if, and how, the Design-Build Team intends to divide the project into work segments to enable optimum construction performance.
 - Describe the Design-Build Team's plans and procedures to ensure timely deliveries of materials to achieve the project schedule.
 - Describe the Design-Build Team's approach to coordinating with active construction projects along both the I-95, U.S. 70, and U.S. 74 corridor.
- Provide a detailed schedule for the project including both design and construction activities. The schedule shall show the sequence and continuity of operations, as well as the month of delivery of usable segments of the project.
- The schedule shall also include the Design-Build Team's final completion date and, if proposed, their substantial completion date. **These dates shall be clearly indicated on the Project Schedule and labeled "Final Completion Date" and "Substantial Completion Date"**.

4. Maintenance of Traffic and Safety Plan - 1 point

Maintenance of Traffic

- Provide a TMPC.
- Describe any traffic control requirements that will be used for each construction phase.
- Describe how traffic will be maintained as appropriate and describe the Design-Build Team’s understanding of any time restrictions noted in the RFP.
- Describe the Design-Build Team’s approach to site access and material staging, including material delivery to the project site.
- Specifically describe how business, school and residential access will be maintained along non-controlled access locations.
- If a temporary portable barrier system will be utilized, provide the type and why it is needed.
- Address if there will be a need to use law enforcement officers and describe how and where they will be used.
- Identify a Traffic Control Supervisor and briefly describe their qualifications for this role.

Safety Plan

- Describe the safety considerations specific to the project.
- Discuss the Design-Build Team's overall approach to safety.
- Describe any proposed improvements that will be made prior to or during construction that will enhance the safety of the work force and / or travelling public both during and after the project construction.

F-1.9c. Technical Evaluation Criteria – OMC Portion of P3 Proposals

The OMC Technical Proposal will be evaluated in each of the following major categories:

	TECHNICAL EVALUATION FACTORS	POINTS
1.	Project Approach	3
2.	Proposer and Personnel Qualifications and Experience	2

OMC Technical Proposal Evaluation Criteria

1. Project Approach – 3 points

Proposer’s approach to perform and manage O&M services required for the Project, with emphasis on the following factors:

- Proposer’s understanding of the Department’s objectives for the Project.
- Proposer’s approach to ensuring that adequate materials, equipment, and resources available to perform the work required for this Project.

- Soundness of proposed approach, methodology, and deliverables for conducting O&M services as it relates to the requirements discussed in O&M Scope of Work (Part F-1.2) of the RFP.
- Extent to which Proposer’s approach for O&M services is substantiated by the Good Industry Practices and standards.
- Quality and completeness of the Proposer’s approach for O&M services.
- Proposer’s approach to maintain close coordination with the Department and other contractors throughout the length of the Project.
- Responsiveness, organization, and clarity of Proposal.

Proposer’s approach to market, management and performance of Commercialization services required for the Project, with emphasis on the following factors:

- Proposer’s understanding of the Department’s objectives for the Commercialization of the project route.
- Soundness of proposed approach and methodology for providing Commercialization services.
- Extent to which Proposer’s approach for Commercialization services is substantiated by tangible evidence or observable market trends.
- Proposer’s approach to maintain close coordination with the Department and other contractors throughout the length of the Project.
- Responsiveness, organization, and clarity of Proposal.

2. Proposer and Personnel Qualifications and Experience – 2 points

Proposer’s relevant experience and expertise in providing O&M services for projects of a similar size and scope, with emphasis on the following factors:

- Proposer’s relevant experience and expertise in conducting O&M as it relates to the O&M scope of work
- Proposer’s qualifications, experience and competency of key O&M personnel

Proposer’s relevant experience and expertise in providing Commercialization services for projects of a similar size and scope, with emphasis on the following factors:

- Proposer’s relevant experience and expertise as it relates to the Commercialization scope of work

Proposer’s qualifications, experience and competency of key Commercialization personnel

APPENDICES

The following appendices are included as part of the RFP. Each appendix is marked with a cover sheet, followed by the appendix itself. Appendix Part D and Part G have been included as part of overall RFP document and as Microsoft Excel files.

Appendix Part A – Final Request for Proposals, Design-Build Project

Appendix Part B – OMC: Operations, Maintenance and Commercialization Agreement Terms

Appendix Part C – OMC: Acknowledgement of Operations, Maintenance and Commercialization Agreement Terms Review

Appendix Part D – OMC: Price Proposal for O&M and Commercialization

Appendix Part E – P3: Comprehensive Agreement Terms

Appendix Part F – P3: Acknowledgement of Comprehensive Agreement Terms Review

Appendix Part G – P3: Price Proposal for O&M and Commercialization

Appendix Part H – DB: Form of Bid Bond

Appendix Part I – OMC: Form of Bid Bond

Appendix Part J – P3: Form of Bid Bond

Appendix Part A – Final Request for Proposals, Design- Build Project

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

FINAL REQUEST FOR PROPOSALS



DESIGN-BUILD PROJECT

**TIP R-5777D, I-5986C
& HO-0002A, B & C**

February 5, 2021



VOID FOR BIDDING

DATE AND TIME OF PROPOSAL SUBMISSION: **March 12, 2021** at 4:00 pm EST

DATE AND TIME OF PREFERRED PROCUREMENT TRACK AND PREFERRED PROPOSER
ANNOUNCEMENT: March 26, 2021 at 2:00 pm EST

CONTRACT ID: C204556

WBS ELEMENT NO. 44648.3.5, 47532.3.4, 49456.3.2, 49456.3.3 & 49456.3.4

FEDERAL-AID NO. 0070235, 0095071, 0074233, 0074234 & 0074235

COUNTIES: Northampton, Halifax, Nash, Wilson, Wake, Johnston, Harnett, Cumberland, Robeson, Wayne, Jones, Lenoir, Craven, Carteret, Brunswick, Columbus, Scotland, Richmond, Anson, Union, Mecklenburg, Gaston, Cleveland, Rutherford, Polk, Henderson & Buncombe

ROUTE NO. I-95, US 70 (future I-42) & US 74

MILES: 600

LOCATION: I-95 (SC border-to-VA border), US 70 from I-40 to the Morehead City Port & US 74 from I-40 near Wilmington to Asheville

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 PREFERRED PROCUREMENT TRACK AND PREFERRED PROPOSER ANNOUNCEMENT, REGARDLESS OF FUNDING SOURCES.

BID BOND OR BID DEPOSIT **REQUIRED**

**PROPOSAL FORM FOR THE CONSTRUCTION OF CONTRACT NO. C204556
IN MULTIPLE COUNTIES, NORTH CAROLINA**

Date _____ 20 _____

**DEPARTMENT OF TRANSPORTATION,
RALEIGH, NORTH CAROLINA**

The Design-Build Team herein acknowledges that it has carefully examined the location of the proposed work to be known as Contract No. **C204556**; has carefully examined the Final Request for Proposals (RFP) and all addendums thereto, specifications, special provisions, the form of contract, and the forms of contract payment bond and contract performance bonds, which are acknowledged to be part of the Contract; and thoroughly understands the stipulations, requirements and provisions. The undersigned Design-Build Team agrees to be bound upon their execution of the Contract and including any subsequent award to them by the Secretary of Transportation in accordance with this Contract to provide the necessary contract payment bond and contract performance bond within fourteen calendar days after the written notice of award is received by them.

The undersigned Design-Build Team further agrees to provide all necessary materials, machinery, implements, appliances, tools, labor, and other means of construction, except as otherwise noted, to perform all the work and required labor to design, construct and complete all the work necessary for State Highway Contract No. **C204556** in Northampton, Halifax, Nash, Wilson, Johnston, Harnett, Cumberland, Robeson, Wake, Wayne, Jones, Lenoir, Craven, Carteret, Brunswick, Columbus, Scotland, Richmond, Anson, Union, Mecklenburg, Gaston, Cleveland, Rutherford, Polk, Henderson and Buncombe Counties by no later than the date(s) specified in the Final RFP or Technical Proposal, whichever is earlier, and in accordance with the requirements of the Engineer, the Final RFP and Addenda thereto, the 2018 *Standard Specifications for Roads and Structures*, specifications prepared by the Department, the Technical Proposal prepared by the Design-Build Team, at the lump sum price(s) bid by the Design-Build Team in their Price Proposal.

The Design-Build Team shall provide signed and sealed documents prepared by the Design-Build Team, which specifications and plans show the details covering this project and adhere to the items noted above.

The Design-Build Team acknowledges that project documents furnished by the Department are preliminary and provided solely to assist the Design-Build Team in the development of the project design. Unless otherwise noted herein, the Department does not warrant or guarantee the sufficiency or accuracy of any information furnished by the Department.

The Department does not warrant or guarantee the sufficiency or accuracy of any investigations made, nor the interpretations made or opinions of the Department as to the type of materials and conditions to be encountered at the project site. The Design-Build Team is advised to make such independent investigations, as they deem necessary to satisfy their self as to conditions to be encountered on this project. The Design-Build Team shall have no claim for additional compensation or for an extension of contract time for any reason resulting from the actual conditions encountered at the site differing from those indicated in any of the information or

documents furnished by the Department except as may be allowed under the provisions of the Standard Specifications.

Although the Department has furnished preliminary designs for this project, unless otherwise noted herein, the Design-Build Team shall assume full responsibility, including liability, for the project design, including the use of portions of the Department design, modification of such design, or other designs as may be submitted by the Design-Build Team.

The Design-Build Team shall be fully and totally responsible for the accuracy and completeness of all work performed under this contract, and shall indemnify and hold the Department harmless for any additional costs and all claims against the Department or the State which may arise due to errors or omissions of the Department in furnishing the preliminary project designs and information, and of the Design-Build Team in performing the work.

The published volume entitled *North Carolina Department of Transportation, Raleigh, Standard Specifications for Roads and Structures*, January 2018, as well as, all design manuals, policy and procedures manuals, and AASHTO publications and guidelines referenced in the Request For Proposals, with all amendments and supplements thereto, are by reference, incorporated and made part of this contract; that, except as herein modified, all the design, construction and Construction Engineering Inspection included in this contract is to be done in accordance with the documents noted above and under the direction of the Engineer.

If the Design-Build Proposal is accepted and the award is made, the Technical Proposal submitted by the Design-Build Team is by reference, incorporated and made part of this contract. The contract is valid only when signed either by the Contract Officer or such other person as may be designated by the Secretary to sign for the Department of Transportation. The conditions and provisions herein cannot be changed except by written approval as allowed by the Request for Proposals.

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

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PROPOSAL FORMS - ITEMIZED SHEET, ETC.

Itemized Proposal Sheet (TAN SHEET)

Listing of DBE Subcontractors

Execution of Bid, Non-Collusion Affidavit, Debarment Certification and Gift Ban
Certification

Signature Sheet

***** PROJECT SPECIAL PROVISIONS *******CONTRACT TIME AND LIQUIDATED DAMAGES**

(7-12-07)

DB1 G04A

The date of availability for this contract is July 31, 2021, except that the Design-Build Team shall only begin ground disturbing activities as allowed by this Request for Proposals (RFP). The Design-Build Team shall consider this factor in determining the proposed completion date for this project.

The completion date for this contract is defined as the date proposed in the Technical Proposal by the proposer who is awarded the project. The completion date thus proposed shall not be later than October 1, 2026.

When observation periods are required by the special provisions, they are not a part of the work to be completed by the completion date and / or intermediate contract times. Should an observation period extend beyond the Final Completion Date proposed by the Design-Build Team in the Technical Proposal, the performance and payment bonds shall remain in full force and effect until the observation period has been completed and the work accepted by the Department.

The liquidated damages for this contract are **Four Thousand Dollars (\$4,000.00)** per calendar day.

INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES

The completion date for I-95 and US 70 portion of the project shall be completed no later than October 1, 2023.

The Liquidated Damages for failure to complete this portion of work Four Thousand Dollars (\$4,000.00) per calendar day.

INTERMEDIATE CONTRACT TIME NUMBER 2 THRU 7 AND LIQUIDATED DAMAGES

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

Liquidated Damages for Intermediate Contract Time #2 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on I-95, I-40, I-85, I-485, I-26 and US-70 from I-40 to NC-581, including all ramps and loops, are \$2,500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #3 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on US-70 east of NC-581, including all ramps and loops, are \$500.00 per hour or any portion thereof.

Liquidated Damages for Intermediate Contract Time #4 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on US-74, US-74 Bypass, & US-74 Alternate (Mecklenburg, Union, Gaston, Cleveland, and Brunswick Counties), including all ramps and loops, are \$500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #5 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on US-74 (other Counties), including all ramps and loops, are \$500.00 per hour or any portion thereof.

Liquidated Damages for Intermediate Contract Time #6 for the above lane narrowing, lane closure, holiday and special event time restrictions on all -Y- Line Roads with AADTs between 8,000 and 20,000 are \$500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #7 for the above lane narrowing, lane closure, holiday and special event time restrictions on all -Y- Line Roads with AADTs greater than 20,000, NC-146, and NC-280 are \$1250.00 per 15-minute period or any portion thereof.

INTERMEDIATE CONTRACT TIME NUMBER 8 AND LIQUIDATED DAMAGES FOR FAILURE TO REPAIR A DAMAGED NCDOT ITS FIBER OPTIC COMMUNICATIONS CABLE AND RESTORE COMMUNICATION

The Design-Build Team shall repair all existing fiber optic communication cables damaged during construction. The Design-Build Team shall immediately report damages to the Engineer and the NCDOT Resident Engineer. The Design-Build Team shall repair all damages within twenty-four (24) hours at no cost to the Department. The Design-Build Team shall bring all affected ITS fiber optic communication cables back online within the same twenty-four (24) hours. A “damaged” ITS fiber optic communications cable is defined as any fiber optic communications cable that is determined damaged due to an accidental or unscheduled outage event.

The Liquidated Damages for failure to repair a damaged NCDOT ITS fiber optic communications cable and restore communications within twenty-four (24) hours are Five Hundred Dollars (\$ 500.00) per hour, or any portion thereof.

INTERMEDIATE CONTRACT TIME NUMBERS 9 AND 10 AND LIQUIDATED DAMAGES FOR FAILURE TO REESTABLISH ITS FIBER OPTIC COMMUNICATIONS

During construction, the Design-Build Team shall coordinate any disruption in ITS fiber optic communications with the Engineer and the NCDOT Resident Engineer. The Design-Build Team shall notify the Engineer and the NCDOT Resident Engineer a minimum of seven (7) calendar days prior to all proposed disruptions in service. A minimum of twenty one (21) calendar days prior to any disruption in ITS fiber optic communications, the Design-Build Team shall develop and provide a plan for the Department’s approval that defines 1) an anticipated disruption timeframe and 2) a plan of action for reestablishing ITS communications within four (4) hours.

ICT #9

The Liquidated Damages for failure to reestablish ITS fiber optic communications within four (4) hours are Two Thousand Five Hundred Dollars (\$ 2,500.00) per day, or any portion thereof.

ICT #10

The Liquidated Damages for failure to provide a plan that defines 1) an anticipated ITS fiber optic communications disruption timeframe and 2) a plan of action for reestablishing ITS communications a minimum of twenty one (21) calendar days prior to a proposed disruption in service are Ten Thousand Dollars (\$ 10,000.00) per failure.

INTERMEDIATE CONTRACT TIME NUMBERS 11 THRU 13 AND LIQUIDATED DAMAGES FOR DEVICE DOWNTIME TO SWITCH OVER A DEVICE REPLACEMENT

The Design-Build Team shall minimize existing device downtime when switching over a device replacement. The Design-Build Team shall notify the NCDOT Resident Engineer, and the appropriate ITS O&M Contact based upon which Division the device replacement is to occur, a minimum of seven (7) calendar days prior to any proposed disruptions in service.

The Design-Build Team shall complete the replacement of any device within twenty-four (24) hours, such that service has been reestablished and the affected device is back online.

ICT #11

The Liquidated Damages for failure to provide notification a minimum of seven (7) calendar days prior to any disruption in service are Two Thousand Five Hundred Dollars (\$ 2,500.00) per device replacement.

ICT #12

The Liquidated Damages for failure to complete the replacement of any device within twenty-four (24) hours are Five Hundred Dollars (\$ 500.00) per hour, or any portion thereof.

ICT #13

The Liquidated Damages for failure to maintain any Camera not yet transitioned to the OMC contractor such that its downtime exceeds 7 days, are One Thousand Dollars (\$1000.00) per day, or any portion thereof. If the device cannot be repaired within 7 days, the contractor may install a portable camera with connection to the STOC as a suitable replacement to avoid incurring liquidated damages.

PAYOUT SCHEDULE

(11-16-09)

DB1 G13

No later than 12:00 o'clock noon on the sixth day after the Preferred Procurement Track and Preferred Proposer Announcement, the Preferred Proposer shall submit a proposed Anticipated Monthly Payout Schedule to the office of the State Contract Officer. The information shall be submitted in a sealed package with the outer wrapping clearly marked "Anticipated Monthly

Payout Schedule” along with the Design-Build Team name and the contract number. The Anticipated Monthly Payout Schedule will be used by the Department to establish the monthly funding levels for this project. The Anticipated Monthly Payout Schedule shall parallel, and agree with, the project schedule the Design-Build Team submits as a part of their Technical Proposal. The schedule shall include a monthly percentage breakdown (in terms of the total contract amount percentages) of the work anticipated to be completed. The schedule shall begin with the Date of Availability and end with the Actual Completion Date proposed by the Design-Build Team. If the Payout Schedule is not submitted as stated herein, the Technical and Price Proposals will be considered irregular by the Department, and the bid may be rejected.

Submit updates of the Anticipated Monthly Payout Schedule on March 15, June 15, September 15, and December 15 of each calendar year until project acceptance. Submit all updates to the Resident Engineer with a copy to the State Construction Engineer at 1 South Wilmington St, 1543 Mail Service Center, Raleigh, NC 27699-1543.

MOBILIZATION

(8-28-17)

DB1 G15A

Revise the 2018 *Standard Specifications for Roads and Structures* as follows:

Page 8-1, Subarticle 800-2, MEASUREMENT AND PAYMENT

Delete this subarticle in its entirety and replace with the following:

800-2 MEASUREMENT AND PAYMENT

Five percent of the “Total Amount of Bid for Entire Project” shall be considered the lump sum amount for Mobilization. Partial payments for Mobilization will be made beginning with the first partial pay estimate paid on the contract. Payment will be made at the rate of 40 percent of the lump sum amount calculated for Mobilization. The remaining 60 percent will be paid with the second partial pay.

SEQUENCE AND SCHEDULE RESTRICTIONS

The Design-Build Team shall begin the construction with the installation of HUB 8 (I-95/US 70 Interchange). HUB 8 will have a backup network circuit installed by DIT as stated in the ITS Scope of Work. The HUB construction segments denoted in the table below were developed to ensure NCDOT has the ability to test the fiber connections and ensure regeneration is accounted for between HUBS. The Design-Build Team shall at a minimum construct a HUB to construction segment in its entirety and indicate in the Design-Build Team’s Schedule the order in which these segments will be constructed.

NCDOT’s construction sequencing was developed starting at HUB 8 and working outward to allow the Department to adequately perform system testing and acceptance. The table below is for consideration in the development of the Design-Build Team’s construction sequencing and there are no restrictions on the Design-Build to follow the order of the NCDOT’s construction sequencing as denoted below:

NCDOT CONSTRUCTION SEQUENCING	HUB CONSTRUCTION SEGMENTS	LOCATION
1	HUB 8 to HUB 9	I-95 @ US 264
2	HUB 9 to HUB 10	I-95 @ US 64
3	HUB 10 to HUB 11	NC 561, I-95 Exit 173
4	HUB 11 to HUB 13	VA Border
5	HUB 8 to HUB 15	US 70 @ I-795
6	HUB 15 to HUB 16	Harvey Parkway MM 380
7	HUB 16 to HUB 17	US 70 @ NC 41
8	HUB 17 to HUB 18	US 70 @ Glenburnie Rd. East of New Bern
9	HUB 18 to HUB 19	US 70 @ Slocum Rd. North of Havelock
10	HUB 19 to HUB 20	US 70 @ NC Port MM 455
11	HUB 8 to HUB 6	I-95 @ US 70 to I-95 @ US 421
12	HUB 6 to HUB 5	I-95 @ BUS I-95
13	HUB 5 to HUB 4	I-95 @ Future I-295
14	HUB 4 to HUB 3	US 301, I-95 Exit 2
15	HUB 3 to HUB 1	SC Border
16	HUB 8 to HUB 14	US 70 Bypass @ I-40

The table below is for consideration in the development of the Design-Build Team's construction sequencing along US 74 and there are no restrictions on the Design-Build to follow the order of the NCDOT's construction sequencing as denoted below:

NCDOT CONSTRUCTION SEQUENCING	HUB CONSTRUCTION SEGMENTS	LOCATION
1	HUB 21 to HUB 22	US 74 at I-140
2	HUB 22 to HUB 23	US 74 at NC 211 (Bolton)
3	HUB 23 to HUB 2	US 74 at US 76 (West of Whiteville)
4	HUB 2 to HUB 24	I-95 at US 74/I-74
5	HUB 24 to HUB 25	US 74 at US 15/501 (Laurinburg)
6	HUB 25 to HUB 26	US 74 at US 1 (Rockingham)
7	HUB 26 to HUB 27	US 74 at US 52 (Wadesboro)
8	HUB 29 (Existing node 20) to HUB 30	I-485 at I-77

9	HUB 30 (Existing HUB 6) to 31	3300' North of I-485/I-85 Interchange
10	HUB 31 to HUB 32	US 74 at I-85 (Bessemer City)
11	HUB 32 to HUB 33	US 74 at US 74 BYP (Shelby)
12	HUB 33 to HUB 34	US 74 at US 221 (Forest City)
13	HUB 34 to HUB 35	US 74 at I-26 (Columbus)
14	HUB 35 to HUB 36	I-26 at US 64 (Hendersonville)

The Design-Build Team shall provide a construction sequence which shall minimize and avoid relocation of fiber to the greatest extent possible in coordination with adjacent construction projects as denoted elsewhere in the RFP, reference Project Special Provisions Cooperation between Contractors.

SPECIAL REQUIREMENTS FOR WORK IN NATIONAL FORESTS

(7-1-95)

DB1 G40 (Rev.)

In addition to other requirements in this RFP with respect to clearing, erosion control, protection of environment, etc., comply with the following requirements:

- (A) Comply with the portions of these Special Requirements, entitled "Fire Plan", Clearing Plan" and "Landscape and Erosion Control Plan".
- (B) No trees shall be removed until the Forest Service gives approval. Merchantable trees will be marked by the Forest Service. After approval, the Design-Build Team will be responsible for cutting any trees in conflict with the project. If the Forest Service chooses not to dispose of the cut merchantable trees themselves or by others, the trees will become the property of the Design-Build Team.
- (C) Comply with the following recommendations of the State Fish and Game Department and Forest Service for wildlife and fish management:
 - (1) Take all necessary precautions to avoid damage to fish habitat and exercise every reasonable precaution to prevent muddying or silting live streams.
 - (2) Do not deposit material removed from the roadway or channel changes in live streams or into the streams or stream channel where it would be washed away by high stream flows.
 - (3) Do not haul materials, including logs, brush, and debris, by fording live streams. Instead, provide temporary bridges or other structures for this purpose.
- (D) Dispose of waste material resulting from slides during construction and surplus material at locations approved by the Forest Supervisor. Submit a plan showing the proposed method of disposal at the time approval is requested.

- (E) Treat sections of existing road to be abandoned as a result of the proposed new construction, as designated by the Forest Supervisor, to restore them to their natural state. The necessary treatment will be determined during a joint review between the Forest Service and the State and may include ripping of roadbed, removal of drainage structure, and opening drainage channels. Plans and specifications as mutually deemed appropriate to accomplish the objective will become a part of this stipulation.
- (F) Permanently monument the right of way prior to completion of construction in accordance with State requirements for such right of way, but in any event the minimum requirements will be to place permanent monuments at the intersection of right of way with all property lines, section lines, and at intervals of not more than 1,000 feet along the right-of-way limits.
- (G) Re-establish or restore public land monuments disturbed or destroyed by construction, reconstruction, or maintenance according to instructions of the Bureau of Land Management, Department of the Interior. Do not damage, destroy, or obliterate other land monuments and property corners or witness markers without the prior permission of the Regional Forester. Relocate or re-establish these land monuments, property corners, and witness markers in accordance with standards satisfactory to the Regional Forester.
- (H) The US Forest Service will require a separate permit for operation of the commercial fiber optic line within National Forest System lands and NCDOT's right-of-way. The Design-Build Team is responsible for preparing a proposal for this permit and the Department will submit and be the authorized party, if approved.

The permit is subject to a land use fee, which will be paid for by the OMC or P3 Contractor. The annual land use fee is determined based on a linear right-of-way fee scale and is adjusted annually based on inflation. The 2021 fee would be approximately \$400-\$500 and should be expected to go up incrementally over the term of the permit.
- (I) The Contractor will not be allowed to have material storage or staging on the National Forest System lands.

Fire Protection Plan

During the period of construction, perform both independently and in cooperation with the Forest Service everything that is reasonable and practical to prevent and suppress forest fires on the easement area and in its immediate vicinity. Include provisions in all subcontracts for the construction of the road requiring subcontractors and their respective employees to do likewise. The Design-Build Teams and subcontractors, shall conform to, but not be limited to, the following Fire Plan:

- (A) Take immediate independent or cooperative action to control and extinguish any fire, regardless of cause, within the easement area and its vicinity.

- (B) Maintain at readily available sites one or more boxes of firefighting tools to be furnished by the Forest Service for forest fire fighting purposes only.
- (C) Perform debris burning only in the center of the right of way, and only after a strip 20 feet wide around each pile is cleared to mineral soil.
- (D) Keep fires compact by chunking in the larger material as it burns. If piles are too close together or burn hot, light every second or third pile; allow these to cool down before firing the others. On slopes start burning at the top and work down. Confine fires to piles at all times.
- (E) Do not leave fires unattended.
- (F) Discontinue burning upon notification by the District Forest Ranger or his representative that fire danger is such that there is abnormal risk.
- (G) Whenever a fire escapes, notify the District Ranger immediately even if the fire is suppressed without Forest Service assistance.
- (H) The Design-Build Team or subcontractor responsible will bear the costs, including Forest Service direct costs and value of resources damages, incurred by the Forest Service in controlling and extinguishing any fire on or threatening National Forest lands which they or their employees caused with or without negligence in connection with construction operations.
- (I) Contact the District Ranger 24 hours in advance of burning.

Clearing Plan

Conform to the following clearing plan:

- (A) Dispose of unmerchantable materials including tops, branches, etc., by piling and burning as directed by the Forest Service or used in brush barriers. Alternate methods of disposal, including any of the following methods or combinations of methods (lop and scatter, chip, remove, pile only), shall be approved in advance by the Forest Service.
- (B) The maximum clearing and grubbing limits are to be as shown on the plans except that cutting of hazard trees outside these limits may be done with approval from the Forest Service. Confine construction machinery within the clearing limits.

Landscape and Erosion Control Plan

The erosion control plan will be designed and implemented to prevent visible sediment, as defined by NC DENR regulations, from reaching any defined stream channel.

Conform to, but not be limited to, the following Landscape and Erosion Control Plan.

- (A) Prevent visible sediment from entering any stream channel. If an erosion control practice must be sited in a channel, it shall stop further down-channel transport of visible sediment.
- (B) Bear responsibility for the prevention and control of soil erosion and gullyng on the right of way and lands adjacent thereto resulting from the construction or maintenance of the road. Revegetate with grass (not Love Grass) or herbaceous plants all ground where the soil has been exposed. Accomplish revegetation within 20 working days following final grading.
- (C) Round the ends of cut sections and the tops of back slopes.
- (D) Vegetate all front and back slopes by liming, fertilizing, mulching and seeding; including any waste area. Mulch critical areas if they are to be exposed greater than 5 working days of probable inclement weather during seasons when seeding is impracticable. Critical areas include all bare soils within 100 feet (slope distance) of perennial and intermittent streams. Mulch these as soon as practical and after final seeding.
- (E) Maintain all erosion control practices in a timely manner to prevent visible sediment from entering any stream channel, until such time that the final revegetation stabilizes the site and prevents erosion and off-site movement of sediment.

EXECUTION OF BID, NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION

(1/24/13)

DB1 G52

The Proposer's attention is directed to the various sheets in the Request for Proposals which are to be signed by the Proposer. A list of these sheets is shown below. The signature sheets are located behind the Itemized Proposal Sheet in this Request for Proposal. The NCDOT bid bond form is available on-line at:

<https://connect.ncdot.gov/letting/Pages/Design-Build-Resources.aspx>

or by contacting the Records and Documents office at 919-707-6900.

1. Applicable Signature Sheets: 1, 2, 3, 4, 5, or 6 (Bid)
2. Bid Bond dated the day of Technical and Price Proposal submission

The Proposer shall certify to the best of his knowledge all subcontractors, material suppliers and vendors utilized herein current status concerning suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency, in accordance with the "Debarment Certification" located behind the *Execution of Bid Non-Collusion Affidavit, Debarment Certification and Gift Ban Certification* signature sheets in this RFP. Execution of the bid signature sheets in conjunction with any applicable statements concerning exceptions, when such statements

have been made on the "Debarment Certification", constitutes the Proposer's certification of "status" under penalty of perjury under the laws of the United States.

SUBMISSION OF DESIGN-BUILD PROPOSAL

(9-1-11) (Rev. 8-30-17)

DB1 G55A

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

1. The Proposer shall be prequalified with the Department prior to submitting a Design-Build Proposal.
2. The Proposer shall deliver the Design-Build Proposal to the place indicated, and prior to the time indicated in the Instructions to Proposers.
3. The Design-Build Proposal documents shall be signed by an authorized employee of the Proposer.
4. The Design-Build Proposal shall be accompanied by Bid surety in the form of a Bid Bond or Bid Deposit, dated the day of Price Proposal submission.
5. If Disadvantaged Business Enterprises (DBE) goals are established for this contract, the Proposer shall complete the form Listing of DBE Subcontractors contained elsewhere in this RFP in accordance with the *Disadvantaged Business Enterprises Project Special Provision* found elsewhere in this RFP.
6. The Design-Build Proposal shall address all the requirements as specified in this Request for Proposals.

In addition to the above requirements, failure to comply with any of the requirements of Article 102-8 of the Standard Special Provisions, Division One (found elsewhere in this RFP), Article 102-9 of the 2018 *Standard Specifications for Roads and Structures*, or Article 102-10 of the 2018 *Standard Specifications for Roads and Structures* and as amended in the Standard Special Provisions, Division One (found elsewhere in this RFP) may result in a Design-Build Proposal being rejected.

CONFIDENTIAL QUESTIONS

(1-5-07)

DB1 G56B

The Design-Build Team will be permitted to ask confidential questions of the Department, which neither the question nor answer will be shared with other proposing teams. For the purpose of this provision, "confidential question" is defined as a private inquiry containing information whose disclosure could alert others to certain details of doing business in a particular manner. The Department will determine if the question is considered a confidential question.

- I. Confidential questions arising prior to issuance of the Final Request for Proposals will be allowed at the External RFP review with the individual teams.

The Department will answer the confidential question verbally at the meeting if possible. If not answered verbally during the meeting, the Department will answer the confidential question by subtle changes in the Final Request for Proposals, which will clarify the scope by either allowing or disallowing the request. The revision will be made in such a manner as to not disclose the confidential question.

- II. After the issuance of the Final Request for Proposals, confidential questions may be asked by requesting a meeting with the Contract Officer. The request shall be in writing and provide sufficient detail to evaluate the magnitude of the request. Questions shall be of such magnitude as to warrant a special meeting. Minor questions will not be acknowledged or answered.

After evaluation, the Contract Officer will respond to the question in writing to the Design-Build Team only. Other teams will not be notified of the question or answer.

SCHEDULE OF ESTIMATED COMPLETION PROGRESS

(9-1-11) (Rev. 8/31/17)

DB1 G58

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

<u>Fiscal Year</u>	<u>Progress (% of Dollar Value)</u>
2022 (07/01/21 - 06/30/22)	28% of Total Amount Bid
2023 (07/01/22 - 06/30/23)	26% of Total Amount Bid
2024 (07/01/23 - 06/30/24)	21% of Total Amount Bid
2025 (07/01/24 - 06/30/25)	13% of Total Amount Bid
2026 (07/01/25 - 06/30/26)	10% of Total Amount Bid
2027 (07/01/26 - 06/30/27)	2% of Total Amount Bid

In accordance with Article 108-2 of the 2018 *Standard Specifications for Roads and Structures*, the Design-Build Team shall also furnish its own progress schedule. Any acceleration of the progress as shown by the Design-Build Team's progress schedule over the progress as shown above shall be subject to the approval of the Engineer.

DISADVANTAGED BUSINESS ENTERPRISE

(10-16-07) (Rev. 1-18-19)

102-15(J)

SP1 G61

DB1 G061

Description

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

Definitions

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

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

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

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

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

Goal Confirmation Letter - Written documentation from the Department to the Proposer confirming the Design-Build Team's approved, committed DBE participation along with a listing of the committed DBE firms.

Manufacturer - A firm that operates or maintains a factory or establishment that produces on the premises, the materials or supplies obtained by the Design-Build Team.

Regular Dealer - A firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold to the public in the usual course of business. A regular dealer engages in, as its principal business and in its own name, the purchase and sale or lease of the products in question. A regular dealer in such bulk items as steel, cement, gravel, stone, and petroleum products need not keep such products in stock, if it owns and operates distribution equipment for the products. Brokers and packagers are not regarded as manufacturers or regular dealers within the meaning of this section.

Replacement / Substitution - A full or partial reduction in the amount of work subcontracted to a committed (or an approved substitute) DBE firm.

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

United States Department of Transportation (USDOT) - Federal agency responsible for issuing regulations (49 CFR Part 26) and official guidance for the DBE program.

Forms and Websites Referenced in this Provision

DBE Payment Tracking System - On-line system in which the Design-Build Team enters the payments made to DBE subcontractors who have performed work on the project.

<https://apps.dot.state.nc.us/Vendor/PaymentTracking/>

DBE-IS Subcontractor Payment Information - Form for reporting the payments made to all DBE firms working on the project.

<https://connect.ncdot.gov/business/Turnpike/Documents/Form%20DBE-IS%20Subcontractor%20Payment%20Information.pdf>

RF-1 DBE Replacement Request Form - Form for replacing a committed DBE.

<http://connect.ncdot.gov/projects/construction/Construction%20Forms/DBE%20MBE%20WBE%20Replacement%20Request%20Form.pdf>

SAF Subcontract Approval Form - Form required for approval to sublet the contract.

<http://connect.ncdot.gov/projects/construction/Construction%20Forms/Subcontract%20Approval%20Form%20Rev.%202012.zip>

JC-1 Joint Check Notification Form - Form and procedures for joint check notification. The form acts as a written joint check agreement among the parties providing full and prompt disclosure of the expected use of joint checks.

<http://connect.ncdot.gov/projects/construction/Construction%20Forms/Joint%20Check%20Notification%20Form.pdf>

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Letter of Intent - Form signed by the Contractor and the DBE subcontractor, manufacturer or regular dealer that affirms that a portion of said contract is going to be performed by the signed DBE for the estimated amount (based on quantities and unit prices) listed at the time of bid.

<http://connect.ncdot.gov/letting/LetCentral/Letter%20of%20Intent%20to%20Perform%20as%20a%20Subcontractor.pdf>

Listing of DBE Subcontractors Form - Form for entering DBE subcontractors on a project that will meet this DBE goal contained elsewhere in this RFP.

[http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/08%20DBE%20Subcontractors%20\(Federal\).docx](http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/08%20DBE%20Subcontractors%20(Federal).docx)

Subcontractor Quote Comparison Sheet - Spreadsheet for showing all subcontractor quotes in the work areas where DBEs quoted on the project. This sheet is submitted with good faith effort packages.

<http://connect.ncdot.gov/business/SmallBusiness/Documents/DBE%20Subcontractor%20Quote%20Comparison%20Example.xls>

DBE Goal

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

Disadvantaged Business Enterprises: 4%

- (A) *If the DBE goal is more than zero*, the Design-Build Team shall exercise all necessary and reasonable steps to ensure that DBEs participate in at least the percent of the contract as set forth above as the DBE goal.
- (B) *If the DBE goal is zero*, the Design-Build Team shall make an effort to recruit and use DBEs during the performance of the contract. Any DBE participation obtained shall be reported to the Department.

This goal is to be met through utilization of highway construction contractors and / or right of way acquisition firms. Utilization of DBE firms performing design, other preconstruction services, or Construction Engineering and Inspection are not included in this goal.

Directory of Transportation Firms (Directory)

Real-time information is available about firms doing business with the Department and firms that are certified through NCUCP in the Directory of Transportation Firms. Only firms identified in the Directory as DBE certified shall be used to meet the DBE goal. The Directory can be found at the following link.

<https://www.ebs.nc.gov/VendorDirectory/default.html>

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

Listing of DBE Subcontractors

At the time of bid, Proposers shall submit all DBE participation that they anticipate using during the life of the contract. Only those identified to meet the DBE goal will be considered committed, even though the listing shall include both committed DBE subcontractors and additional DBE subcontractors. Additional DBE subcontractor participation submitted at the time of bid will be used toward the Department's overall race-neutral goal. Only those firms with current DBE certification at the time of Preferred Procurement Track and Preferred Proposer Announcement will be acceptable for listing in the Proposer's submittal of DBE participation. The Design-Build Team shall indicate the following required information:

- (1) *If the DBE goal is more than zero,*
 - (a) Proposers, at the time the Price Proposal is submitted, shall submit a listing of DBE participation, including the names and addresses on *Listing of DBE Subcontractors* contained elsewhere in the contract documents in order for the Price Proposal to be considered responsive. Proposers shall indicate the total dollar value of the DBE participation for the contract.
 - (b) If Proposers have no DBE participation, they shall indicate this on the *Listing of DBE Subcontractors* by entering the word "None" or the number "0." This form shall be completed in its entirety. **Blank forms will not be deemed to represent zero participation.** Price Proposals submitted that do not have DBE participation indicated on the appropriate form will not be considered by the Department for award and the proposal will be rejected.
 - (c) The Proposer shall be responsible for ensuring that the DBE is certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the Preferred Procurement Track and Preferred Proposer Announcement, that DBE's participation will not count towards achieving the corresponding goal.
- (2) *If the DBE goal is zero,* entries on the *Listing of DBE Subcontractors* are not required for the zero goal, however any DBE participation that is achieved during the project shall be reported in accordance with requirements contained elsewhere in this special provision.

DBE Prime Contractor

When a certified DBE firm proposes on a contract that contains a DBE goal, the DBE firm is responsible for meeting the goal or making good faith efforts to meet the goal, just like any other proposer. In most cases, a DBE proposer on a contract will meet the DBE goal by virtue of the work it performs on the contract with its own forces. However, all the work that is performed by the DBE proposer and any other DBE subcontractors will count toward the DBE goal. The DBE proposer shall list itself along with any DBE subcontractors, if any, in order to receive credit toward the DBE goal.

For example, if the DBE goal is 45.0% and the DBE proposer will only perform 40.0% of the contract work, the prime will list itself at 40.0%, and the additional 5.0% shall be obtained through additional DBE participation with DBE subcontractors or documented through a good faith effort.

DBE Prime Contractors shall also follow Sections A and B listed under *Listing of DBE Subcontractor* just as a non-DBE proposer would.

Written Documentation – Letter of Intent

The Proposer shall submit written documentation for each DBE that will be used to meet the DBE goal of the contract, indicating the Proposer's commitment to use the DBE in the contract. This documentation shall be submitted on the Department's form titled *Letter of Intent*.

The documentation shall be received in the office of the State Contractor Utilization Engineer or at DBE@ncdot.gov no later than 10:00 a.m. on the sixth calendar day following opening of Price Proposals, unless the sixth day falls on an official state holiday. In that situation, it is due in the office of the State Contractor Utilization Engineer no later than 10:00 a.m. on the next official state business day.

If the Proposer fails to submit the Letter of Intent from each committed DBE to be used toward the DBE goal, or if the form is incomplete (i.e. both signatures are not present), the DBE participation will not count toward meeting the DBE goal. If the lack of this participation drops the commitment below the DBE goal, the Design-Build Team shall submit evidence of good faith efforts, completed in its entirety, to the State Contractor Utilization Engineer or DBE@ncdot.gov no later than 10:00 a.m. on the eighth calendar day following opening of the Price Proposals, unless the eighth day falls on an official state holiday. In that situation, it is due in the office of the State Contractor Utilization Engineer no later than 10:00 a.m. on the next official state business day.

Submission of Good Faith Effort

If the Proposer fails to meet or exceed the DBE goal the Proposer with the apparent adjusted low price shall submit to the Department documentation of adequate good faith efforts made to reach the DBE goal.

A hard copy and an electronic copy of this information shall be received in the office of the State Contractor Utilization Engineer or at DBE@ncdot.gov no later than 10:00 a.m. on the sixth calendar day following opening of the Price Proposals unless the sixth day falls on an official state holiday. In that situation, it is due in the office of the State Contractor Utilization Engineer no later than 10:00 a.m. on the next official state business day. If the Design-Build Team cannot send the information electronically, then one complete set and five copies of this information shall be received under the same time constraints above.

Note: Where the information submitted includes repetitious solicitation letters, it will be acceptable to submit a representative letter along with a distribution list of the firms that were solicited.

Documentation of DBE quotations shall be a part of the good faith effort submittal. This documentation may include written subcontractor quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

Consideration of Good Faith Effort for Projects with DBE Goals More Than Zero

Adequate good faith efforts mean that the Proposer took all necessary and reasonable steps to achieve the goal which, by their scope, intensity, and appropriateness, could reasonably be expected to obtain sufficient DBE participation. Adequate good faith efforts also mean that the Proposer actively and aggressively sought DBE participation. Mere *pro forma* efforts are not considered good faith efforts.

The Department will consider the quality, quantity, and intensity of the different kinds of efforts a Proposer has made. Listed below are examples of the types of actions a proposer will take in making a good faith effort to meet the goal and are not intended to be exclusive or exhaustive, nor is it intended to be a mandatory checklist.

- (A) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising, written notices, use of verifiable electronic means through the use of the NCDOT Directory of Transportation Firms) the interest of all certified DBEs who have the capability to perform the work of the contract. The Proposer must solicit this interest within at least ten days prior to the opening of the Price Proposals to allow the DBEs to respond to the solicitation. Solicitation shall provide the opportunity to DBEs within the Division and surrounding Divisions where the project is located. The Proposer must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.
- (B) Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved.
 - (1) Where appropriate, break out contract work items into economically feasible units to facilitate DBE participation, even when the Prime Contractor might otherwise prefer to perform these work items with its own forces.
 - (2) Negotiate with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be sublet includes potential for DBE participation (2nd and 3rd tier subcontractors).
- (C) Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (D) (1) Negotiating in good faith with interested DBEs. It is the Proposer's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available

DBE subcontractors and suppliers, to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.

- (2) A proposer using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a proposer's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a Prime Contractor to perform the work of a contract with its own organization does not relieve the Proposer of the responsibility to make good faith efforts. Proposing Design-Build Teams are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.
- (E) Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The Proposer's standing within its industry, membership in specific groups, organizations, or associates and political or social affiliations (for example, union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the Proposer's efforts to meet the project goal.
- (F) Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or proposer.
- (G) Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- (H) Effectively using the services of available minority / women community organizations; minority / women contractors' groups; Federal, State, and local minority / women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs. Contact within seven days from the Price Proposals opening the Business Opportunity and Work Force Development Unit at BOWD@ncdot.gov to give notification of the Proposer's inability to get DBE quotes.
- (I) Any other evidence that the Proposer submits which shows that the Proposer has made reasonable good faith efforts to meet the DBE goal.

In addition, the Department may take into account the following:

- (1) Whether the Proposer's documentation reflects a clear and realistic plan for achieving the DBE goal.
- (2) The Proposer's past performance in meeting the DBE goals.

- (3) The performance of other proposers in meeting the DBE goal. For example, when the Proposer with the apparent adjusted low price fails to meet the DBE goal, but others meet it, you may reasonably raise the question of whether, with additional reasonable efforts the Proposer with the apparent adjusted low price could have met the goal. If the Proposer with the apparent adjusted low price fails to meet the DBE goal, but meets or exceeds the average DBE participation obtained by other proposers, the Department may view this, in conjunction with other factors, as evidence of the Proposer with the apparent adjusted low price having made a good faith effort.

If the Department does not award the contract to the Proposer with the apparent adjusted low price, the Department reserves the right to award the contract to the Proposer with the next apparent adjusted low price that can satisfy the Department that the DBE goal can be met or that an adequate good faith effort has been made to meet the DBE goal.

Non-Good Faith Appeal

The State Prequalification Engineer will notify the Design-Build Team verbally and in writing of non-good faith. A Design-Build Team may appeal a determination of non-good faith made by the Goal Compliance Committee. If a Design-Build Team wishes to appeal the determination made by the Committee, they shall provide written notification to the State Prequalification Engineer or at DBE@ncdot.gov. The appeal shall be made within two business days of notification of the determination of non-good faith.

Counting DBE Participation Toward Meeting DBE Goal

(A) Participation

The total dollar value of the participation by a committed DBE will be counted toward the contract goal requirement. The total dollar value of participation by a committed DBE will be based upon the value of work actually performed by the DBE and the actual payments to DBE firms by the Design-Build Team.

(B) Joint Checks

Prior notification of joint check use shall be required when counting DBE participation for services or purchases that involves the use of a joint check. Notification shall be through submission of Form JC-1 (*Joint Check Notification Form*) and the use of joint checks shall be in accordance with the Department's Joint Check Procedures.

(C) Subcontracts (Non-Trucking)

A DBE may enter into subcontracts. Work that a DBE subcontracts to another DBE firm may be counted toward the contract goal requirement. Work that a DBE subcontracts to a non-DBE firm does not count toward the contract goal requirement. If a DBE contractor or subcontractor subcontracts a significantly greater portion of the work of the contract than would be expected on the basis of standard industry practices, it shall be presumed

that the DBE is not performing a commercially useful function. The DBE may present evidence to rebut this presumption to the Department. The Department's decision on the rebuttal of this presumption is subject to review by the Federal Highway Administration but is not administratively appealable to USDOT.

(D) Joint Venture

When a DBE performs as a participant in a joint venture, the Design-Build Team may count toward its contract goal requirement a portion of the total value of participation with the DBE in the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the DBE performs with its forces.

(E) Suppliers

A Design-Build Team may count toward its DBE requirement 60.0 percent of its expenditures for materials and supplies required to complete the contract and obtained from a DBE regular dealer and 100.0 percent of such expenditures from a DBE manufacturer.

(F) Manufacturers and Regular Dealers

A Design-Build Team may count toward its DBE requirement the following expenditures to DBE firms that are not manufacturers or regular dealers:

- (1) The fees or commissions charged by a DBE firm for providing a *bona fide* service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, provided the fees or commissions are determined to be reasonable and not excessive as compared with fees and commissions customarily allowed for similar services.
- (2) With respect to materials or supplies purchased from a DBE, which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site (but not the cost of the materials and supplies themselves), provided the fees are determined to be reasonable and not excessive as compared with fees customarily allowed for similar services.

Commercially Useful Function

(A) DBE Utilization

The Design-Build Team may count toward its contract goal requirement only expenditures to DBEs that perform a commercially useful function in the work of a contract. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing,

managing, and supervising the work involved. To perform a commercially useful function, the DBE shall also be responsible with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, the Department will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and any other relevant factors.

(B) DBE Utilization in Trucking

The following factors will be used to determine if a DBE trucking firm is performing a commercially useful function:

- (1) The DBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there shall not be a contrived arrangement for the purpose of meeting DBE goals.
- (2) The DBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
- (3) The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
- (4) The DBE may subcontract the work to another DBE firm, including an owner-operator who is certified as a DBE. The DBE who subcontracts work to another DBE receives credit for the total value of the transportation services the subcontracted DBE provides on the contract.
- (5) The DBE may also subcontract the work to a non-DBE firm, including from an owner-operator. The DBE who subcontracts the work to a non-DBE is entitled to credit for the total value of transportation services provided by the non-DBE subcontractor not to exceed the value of transportation services provided by DBE-owned trucks on the contract. Additional participation by non-DBE subcontractors receives credit only for the fee or commission it receives as a result of the subcontract arrangement. The value of services performed under subcontract agreements between the DBE and the Design-Build Team will not count towards the DBE contract requirement.
- (6) A DBE may lease truck(s) from an established equipment leasing business open to the general public. The lease must indicate that the DBE has exclusive use of and control over the truck. This requirement does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. This type of lease may count toward the DBE's credit as long as the driver is under the DBE's payroll.

- (7) Subcontracted / leased trucks shall clearly display on the dashboard the name of the DBE that they are subcontracted / leased to and their own company name if it is not identified on the truck itself. Magnetic door signs are not permitted.

DBE Replacement

When a Design-Build Team has relied on a commitment to a DBE subcontractor (or an approved substitute DBE subcontractor) to meet all or part of a contract goal requirement, the Design-Build Team shall not terminate the DBE for convenience. This includes, but is not limited to, instances in which the Design-Build Team seeks to perform the work of the terminated subcontractor with another DBE subcontractor, a non-DBE subcontractor, or with the Contractor's own forces or those of an affiliate.

The Design-Build Team must give notice in writing both by certified mail and e-mail to the DBE subcontractor, with a copy to the Engineer of its intent to request to terminate and / or substitute, and the reason for the request. The Design-Build Team must give the DBE subcontractor five (5) business days to respond to the Design-Build Team's notice of intent to request termination and / or substitution. If the DBE subcontractor objects to the intended termination / substitution, the DBE, within five (5) business days, must advise the Design-Build Team and the Department of the reasons why the action should not be approved. The five-day notice period shall begin on the next business day after written notice is provided to the DBE subcontractor.

A committed DBE subcontractor may only be terminated after receiving the Department's written approval based upon a finding of good cause for the proposed termination and / or substitution. For purposes of this section, good cause shall include the following circumstances:

- (a) The listed DBE subcontractor fails or refuses to execute a written contract.
- (b) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Prime Contractor.
- (c) The listed DBE subcontractor fails or refuses to meet the Prime Contractor's reasonable, nondiscriminatory bond requirements.
- (d) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness.
- (e) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR Parts 180, 215 and 1,200 or applicable state law.
- (f) The listed DBE subcontractor is not a responsible contractor.

- (g) The listed DBE voluntarily withdraws from the project and provides written notice of withdrawal.
- (h) The listed DBE is ineligible to receive DBE credit for the type of work required.
- (i) A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract.
- (j) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Prime Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Prime Contractor can self-perform the work for which the DBE contractor was engaged or so that the Prime Contractor can substitute another DBE or non-DBE contractor after contract award.

The Design-Build Team shall comply with the following for replacement of a committed DBE:

(A) Performance Related Replacement

When a committed DBE is terminated for good cause as stated above, an additional DBE that was submitted at the time of bid may be used to fulfill the DBE commitment. A good faith effort will only be required for removing a committed DBE if there were no additional DBEs submitted at the time of bid to cover the same amount of work as the DBE that was terminated.

If a replacement DBE is not found that can perform at least the same amount of work as the terminated DBE, the Design-Build Team shall submit a good faith effort documenting the steps taken. Such documentation shall include, but not be limited to, the following:

- (1) Copies of written notification to DBEs that their interest is solicited in contracting the work defaulted by the previous DBE or in subcontracting other items of work in the contract.
- (2) Efforts to negotiate with DBEs for specific subbids including, at a minimum:
 - (a) The names, addresses, and telephone numbers of DBEs who were contacted.
 - (b) A description of the information provided to DBEs regarding the plans and specifications for portions of the work to be performed.
- (3) A list of reasons why DBE quotes were not accepted.
- (4) Efforts made to assist the DBEs contacted, if needed, in obtaining bonding or insurance required by the Design-Build Team.

(B) Decertification Replacement

- (1) When a committed DBE is decertified by the Department after the SAF (*Subcontract Approval Form*) has been received by the Department, the Department will not require the Design-Build Team to solicit replacement DBE participation equal to the remaining work to be performed by the decertified firm. The participation equal to the remaining work performed by the decertified firm will count toward the contract goal requirement.
- (2) When a committed DBE is decertified prior to the Department receiving the SAF (*Subcontract Approval Form*) for the named DBE firm, the Design-Build Team shall take all necessary and reasonable steps to replace the DBE subcontractor with another DBE subcontractor to perform at least the same amount of work to meet the DBE goal requirement. If a DBE firm is not found to do the same amount of work, a good faith effort must be submitted to NCDOT (See A herein for required documentation).

All requests for replacement of a committed DBE firm shall be submitted to the Engineer for approval on Form RF-1 (DBE Replacement Request). If the Prime Contractor or any affiliated companies within the Design-Build Team fails to follow this procedure they may be disqualified from further bidding for a period of up to six months.

Changes in the Work

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

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

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

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

Reports and Documentation

A SAF (*Subcontract Approval Form*) shall be submitted for all work which is to be performed by a DBE subcontractor. The Department reserves the right to require copies of actual subcontract agreements involving DBE subcontractors.

When using transportation services to meet the contract commitment, the Design-Build Team shall submit a proposed trucking plan in addition to the SAF. The plan shall be submitted prior to beginning construction on the project. The plan shall include the names of all trucking firms proposed for use, their certification type(s), the number of trucks owned by the firm, as well as the individual truck identification numbers, and the line item(s) being performed.

Within 30 calendar days of entering into an agreement with a DBE for materials, supplies or services, not otherwise documented by the SAF as specified above, the Design-Build Team shall furnish the Engineer a copy of the agreement. The documentation shall also indicate the percentage (60.0% or 100.0%) of expenditures claimed for DBE credit.

Reporting Disadvantaged Business Enterprise Participation

The Design-Build Team shall provide the Engineer with an accounting of payments made to all DBE firms, including material suppliers and contractors at all levels (prime, subcontractor, or second tier subcontractor). This accounting shall be furnished to the Engineer for any given month by the end of the following month. Failure to submit this information accordingly may result in the following action:

- (A) Withholding of money due in the next partial pay estimate; or
- (B) Removal of an approved Prime Contractor or other affiliated companies within the Design-Build Team from the prequalified bidders' list or the removal of other entities from the approved subcontractors list.

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

Failure on the part of the Design-Build Team to submit the required information in the time frame specified may result in the disqualification of that Prime Contractor and any affiliate companies within the Design-Build Team from further bidding until the required information is submitted.

Failure on the part of any subcontractor to submit the required information in the time frame specified may result in the disqualification of that Prime Contractor or any affiliate companies within the Design-Build Team from being approved for work on future NCDOT projects until the required information is submitted.

Design-Build Teams reporting transportation services provided by non-DBE lessees shall evaluate the value of services provided during the month of the reporting period only.

At any time, the Engineer can request written verification of subcontractor payments.

The Design-Build Team shall report the accounting of payments through the Department's DBE Payment Tracking System.

Failure to Meet Contract Requirements

Failure to meet contract requirements in accordance with Subarticle 102-15(J) of the 2018 *Standard Specifications for Roads and Structures* may be cause to disqualify the Prime Contractor or any affiliated companies within the Design-Build Team from further bidding for a specified length of time.

SPECIAL NOTICE TO BIDDERS

(2-19-13) (Rev. 9-7-17)

DB1 G71

All work adjacent to the live tracks shall be coordinated with the Norfolk Southern Railway (NSR) Roadway Worker In Charge, as defined later in the *Protection of Railroad Interest* Project Special Provision found elsewhere in this RFP. As a result of safety requirements for passing trains, there will be intermittent delays requiring all equipment within 25' of the operating tracks to stop work until authorized to proceed by the Railroad. This will result in intermittent delays to the Design-Build Team's operations. The Design-Build Team needs to account for this in preparing their bid. The Design-Build Team shall have no claims whatsoever against the Railroad or the Department for any delays or additional cost incurred for the delays or any changes to the information above.

PROTECTION OF RAILWAY INTEREST (NS/NCRR)

Under the terms of these provisions, the North Carolina Department of Transportation shall hereinafter be called "Department", the North Carolina Railroad (NCRR) Company shall hereinafter be called "Company" and the Norfolk Southern Railway (NS) Company shall hereinafter be called "Railroad".

1. AUTHORITY OF COMPANY ENGINEER, RAILROAD ENGINEER AND DEPARTMENT ENGINEER:

The Railroad and their authorized representative shall have final authority in all matters affecting the safe maintenance of railroad traffic including the adequacy of the foundations and structures supporting the railroad tracks. For Projects impacting the Railroad, the Railroad's Engineer, hereinafter referred to as "Railroad Engineer", will serve as the authorized representative of the Railroad.

The Company and their authorized representative shall have final authority in all matters for Projects impacting the Company's property, which lie entirely beyond 25 feet from the tracks and do not impact the railroad tracks. The Company's Engineer, hereinafter referred to as "Company Engineer", will serve as the authorized representative of the Company.

The authorized representative of the North Carolina Department of Transportation hereinafter referred to as the “Department Engineer”, shall have authority over all other matters as prescribed herein and in the Project Specifications, Special Provisions, and the plans.

The Department’s Prime Contractor, hereinafter referred to as “Contractor” shall be responsible for completing any and all work in accordance with the terms prescribed herein and in the Project Specifications.

2. NOTICE OF STARTING WORK:

A. The Contractor shall not commence any work on the Company’s corridor until he has complied with the following conditions:

1. Signed and received a fully executed copy of the required North Carolina Railroad Company Right of Entry Agreement.
2. Given the Railroad written notice in electronic format to the Railroad Engineer, with a copy to the Company Engineer, and with copy to the Department Engineer, at least ten days in advance of the date he proposes to begin work on Company’s corridor.
3. Obtained written approval from the Company and Railroad of Railroad Protective Liability Insurance coverage as required by paragraph 14 herein. It should be noted that the Railroad and Company does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad and Company must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.
4. Obtained Railroad’s Flagging Services as required by paragraph 7 herein.
5. Obtained written authorization from the Railroad to begin work on Company’s corridor, such authorization to include an outline of specific conditions with which the Contractor must comply. Contractor is responsible for completing the “Norfolk Southern Checklist for Construction”
6. Furnished a schedule for all work within the Company’s corridor as required by paragraph 7.B.1. to the Company and Railroad.

B. The Railroad’s written authorization to proceed with the work shall include the names, addresses, and telephone numbers of the Railroad’s representatives who are to be notified as hereinafter required. Where more than one representative is designated, the area of responsibility of each representative will be specified.

3. INTERFERENCE WITH RAILROAD OPERATIONS:

A. The Contractor shall so arrange and conduct his work that there will be no interference with Railroad’s operations, including train, signal, telephone and telegraphic services, or damage to the property of the Company or Railroad or to poles, wires, and other facilities of tenants on the Company’s corridor. Whenever work is liable to affect the operations or safety of trains, the method of doing such work shall first be submitted to the Railroad Engineer for approval, but such approval shall not relieve the Contractor from liability. Any work to be performed by the Contractor which requires

flagging service or inspection service shall be deferred by the Contractor until the flagging service or inspection service required by the Railroad is available at the job site.

- B. Whenever work within Company's corridor is of such a nature that impediment to Railroad's operations such as use of runaround tracks or necessity for reduced speed is unavoidable, the Contractor shall schedule and conduct his operations so that such impediment is reduced to the absolute minimum.
- C. Should conditions arising from, or in connection with the work, require that immediate and unusual provisions be made to protect operations and property of the Railroad and Company, the Contractor shall make such provisions. If in the judgment of the Railroad Engineer, or in his absence, the Railroad's Division Engineer, such provisions are insufficient, either may require or provide such provisions as he deems necessary. In any event, such unusual provisions shall be at the Contractor's expense and without cost to the Company, the Railroad or the Department.
- D. "One Call" Services do not locate buried Railroad utilities. The contractor shall contact the Railroad's representative 2 days in advance of work at those places where excavation, pile driving, or heavy loads may damage the Railroad's underground facilities. Upon request from the Contractor or Department, Railroad forces will locate and paint mark or flag the Railroad's underground facilities. The Contractor shall avoid excavation or other disturbances of these facilities. If disturbance or excavation is required near a buried Railroad facility, the contractor shall coordinate with the Railroad to have the facility potholed manually with careful hand excavation. The facility shall be protected by the Contractor during the course of the disturbance under the supervision and direction of the Railroad's representative.

4. TRACK CLEARANCES:

- A. The minimum track clearances to be maintained by the Contractor during construction are shown on the Project Plans. If temporary clearances are not shown on the project plans, the following criteria shall govern the use of falsework and formwork above or adjacent to operated tracks.
 - 1. A minimum vertical clearance of 22'-0" above top of highest rail shall be maintained at all times.
 - 2. A minimum horizontal clearance of 13'-0" from centerline of tangent track or 14'-0" from centerline of curved track shall be maintained at all times. Additional horizontal clearance may be required in special cases to be safe for operating conditions. This additional clearance will be as determined by the Railroad Engineer.
 - 3. All proposed temporary clearances which are less than those listed above must be submitted to Railroad Engineer for approval prior to construction and must also be authorized by the regulatory body of the State if less than the legally prescribed clearances.
 - 4. The temporary clearance requirements noted above shall also apply to all other physical obstructions including, but not limited to: stockpiled materials, parked equipment, placement or driving of piles, and bracing or other construction supports.

- B. Before undertaking any work within Company corridor, and before placing any obstruction over any track, the Contractor shall:
1. Notify the Railroad's representative at least 72 hours in advance of the work.
 2. Receive assurance from the Railroad's representative that arrangements have been made for flagging service as may be necessary.
 3. Receive permission from the Railroad's representative to proceed with the work.
 4. Ascertain that the Company Engineer and the Department's Engineer have received copies of notice to the Railroad and of the Railroad's response thereto.

5. CONSTRUCTION PROCEDURES:

A. General:

1. Construction work and operations by the Contractor on Company's corridor and property shall be:
 - a. Subject to the inspection and approval of the Railroad Engineer or their designated Construction Engineering Representative.
 - b. In accordance with the Railroad's written outline of specific conditions.
 - c. In accordance with the Railroad's general rules, regulations and requirements including those relating to safety, fall protection and personal protective equipment.
 - d. In accordance with these Special Provisions.
2. Submittal Requirements
 - a. The Contractor shall submit all construction related correspondence and submittals electronically to the Railroad Engineer and the Company Engineer.
 - b. The Contractor shall allow a minimum of 30 days for the Railroad's, and Company's if required, review and response.
 - c. All work in the vicinity of the Company's or Railroad's corridor and property that has the potential to affect the Railroad's train operations or disturb the Company's or Railroad's Property must be submitted and approved by the Railroad, and Company if required, prior to work being performed.
 - d. All submittals and calculations must be signed and sealed by a registered engineer licensed in the State of North Carolina.
 - e. All submittals shall first be approved by the Department's Engineer and the Railroad Engineer, but such approval shall not relieve the Contractor from liability.
 - f. For all construction projects, the following submittals, but not limited to those listed below, shall be provided for review and approval when applicable:
 - (1) General Means and Methods
 - (2) Ballast Protection

- (3) Construction Excavation & Shoring
 - (4) Pipe, Culvert, & Tunnel Installations
 - (5) Demolition Procedure
 - (6) Erection & Hoisting Procedure
 - (7) Debris Shielding or Containment
 - (8) Blasting
 - (9) Formwork for the bridge deck, diaphragms, overhang brackets, and protective platforms
 - (10) Bent Cap Falsework. A lift plan will be required if the contractor want to move the falsework over the tracks.
- g. For Undergrade Bridges (Bridges carrying the Railroad) the following submittals in addition to those listed above shall be provided for review and approval:
- (1) Shop Drawings
 - (2) Bearing Shop Drawings and Material Certifications
 - (3) Concrete Mix Design
 - (4) Structural Steel, Rebar, and/or Strand Certifications
 - (5) 28 day Cylinder Test for Concrete Strength
 - (6) Waterproofing Material Certification
 - (7) Test Reports for Fracture Critical Members
 - (8) Foundation Construction Reports
- Fabrication may not begin until the Railroad has approved the required shop drawings.
- h. The Contractor shall include in all submissions a detailed narrative indicating the progression of work with the anticipated timeframe to complete each task. Work will not be permitted to commence until the Contractor has provided the Railroad with a satisfactory plan that the project will be undertaken without scheduling, performance or safety related issues. Submission shall also provide a listing of the anticipated equipment to be used, the location of all equipment to be used and insure a contingency plan of action is in place should a primary piece of equipment malfunction.

B. Ballast Protection

1. The Contractor shall submit the proposed ballast protection system detailing the specific filter fabric and anchorage system to be used during all construction activities.

2. The ballast protection is to extend 25' beyond the proposed limit of work, be installed at the start of the project and be continuously maintained to prevent all contaminants from entering the ballast section of all tracks for the entire duration of the project.

C. Excavation:

1. The subgrade of an operated track shall be maintained with edge of berm at least 10'-0" from centerline of track and not more than 24-inches below top of rail. Contractor will not be required to make existing section meet this specification if substandard, in which case existing section will be maintained.
2. Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Company's corridor.

D. Excavation for Structures and Shoring Protection:

1. The Contractor will be required to take special precaution and care in connection with excavating and shoring pits, and in driving piles or sheeting for footings adjacent to tracks to provide adequate lateral support for the tracks and the loads which they carry, without disturbance of track alignment and surface, and to avoid obstructing track clearances with working equipment, tools or other material. The Contractor will be required to follow the following guidelines for shoring design if a Railroad approved shoring system is not included in the contract plans or an alternate system is proposed.
2. All plans and calculations for shoring shall be prepared, signed, and sealed by a Registered Professional Engineer licensed in the State of North Carolina, in accordance with Norfolk Southern's Overhead Grade Separation Design Criteria, subsection H.1.6.E-Construction Excavation (Refer to Norfolk Southern Public Projects Manual Appendix H). The Registered Professional Engineer will be responsible for the accuracy for all controlling dimensions as well as the selection of soil design values which will accurately reflect the actual field conditions.
3. The Contractor shall provide a detailed installation and removal plan of the shoring components. Any component that will be installed via the use of a crane or any other lifting device shall be subject to the guidelines outlined in section 5.G of these provisions.
4. The Contractor shall be required to survey the track(s) and railroad embankment and provide a cross section of the proposed excavation in relation to the tracks.
5. Calculations for the proposed shoring should include deflection calculations. The maximum deflection for excavations within 18'-0" of the centerline of the nearest track shall be 3/8". For all other cases, the max deflection shall not exceed 1/2".
6. Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Company's corridor.
7. The front face of shoring located to the closest NS track for all shoring set-ups located in Zone 2 as shown on NS Typical Drawing No. 4 – Shoring Requirements (Refer to Norfolk Southern Public Projects Manual Appendix I) shall remain in place and be cut off 2'-0" below the final ground elevation. The remaining shoring in Zone

2 and all shoring in Zone 1 may be removed and all voids must be backfilled with flowable fill.

E. Pipe, Culvert, & Tunnel Installations

1. Pipe, Culvert, & Tunnel Installations shall be in accordance with the appropriate Norfolk Southern Design Specification as noted below:
 - a. For Open Cut Method refer to Norfolk Southern Public Projects Manual Appendix H.4.6.
 - b. For Jack and Bore Method refer to Norfolk Southern Public Projects Manual Appendix H.4.7.
 - c. For Tunneling Method refer to Norfolk Southern Public Projects Manual Appendix H.4.8.
2. All closed pipeline systems shall be installed in accordance North Carolina Railroad Company's Form NCR 102 - Specifications for Pipeline Occupancy of North Carolina Railroad Property.

F. Wire Line Installations

1. All wireline systems shall be installed in accordance North Carolina Railroad Company's Form NCR 101 - Specifications for Wire, Conduit and Cable Occupations of North Carolina Railroad Property.

G. Demolition Procedures

1. General
 - a. Demolition plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) the Company's corridor; and in all situations where cranes will be situated on, over, or adjacent to the Company's corridor and within a distance of the boom length plus 15'-0" from the centerline of track.
 - b. Railroad tracks and other Company and Railroad property must be protected from damage during the procedure.
 - c. A pre-demolition meeting shall be conducted with the Department, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the demolition procedure.
 - d. The Railroad Engineer or his designated representative must be present at the site during the entire demolition procedure period.
 - e. Existing, obsolete, bridge piers shall be removed to a sufficient depth below grade to enable restoration of the existing/proposed track ditch, but in no case less than 2'-0" below final grade.
2. Submittal Requirements
 - a. In addition to the submittal requirements outlined in Section 5.A.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer:

- (1) A plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or disposal locations shown. The location of all tracks and other Company and Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.
 - (2) Rating sheets showing cranes or lifting devices to be adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been “built-in” to the crane charts are not to be considered when determining the 150% factor of safety.
 - (3) Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the existing structure showing complete and sufficient details with supporting data for the demolition the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations.
 - (4) The Contractor shall provide a sketch of all rigging components from the crane’s hook block to the beam. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been “built-in” to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Department and the Railroad.
 - (5) A complete demolition procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.
 - (6) Design and supporting calculations for the temporary support of components, including but not limited to the stability of the superstructure during the temporary condition, temporary girder tie-downs and falsework.
3. Overhead Demolition Debris Shield
- a. The demolition debris shield shall be installed prior to the demolition of the bridge deck or other relevant portions of the superstructure over the track area to catch all falling debris.
 - b. The demolition debris shield shall provide a minimum vertical clearance as specified in Section 4.A.1 of these provisions or maintain the existing vertical clearance if the existing clearance is less than that specified in Section 4.A.1.
 - c. The Contractor shall include the demolition debris shield installation/removal means and methods as part of the proposed Demolition procedure submission.
 - d. The Contractor shall submit the demolition debris shield design and supporting calculations for approval by the Railroad Engineer.

- e. The demolition debris shield shall have a minimum design load of 50 pounds per square foot plus the weight of the equipment, debris, personnel, and other loads to be carried.
 - f. The Contractor shall include the proposed bridge deck removal procedure in its demolition means and methods and shall verify that the size and quantity of the demolition debris generated by the procedure does not exceed the shield design loads.
 - g. The Contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Railroad Engineer.
4. Vertical Demolition Debris Shield
- a. A vertical demolition debris shield may be required for substructure removals in close proximity to the Company's track and other facilities, as determined by the Railroad Engineer.

H. Erection & Hoisting Procedures

1. General

- a. Erection plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) the Company's corridor; and in all situations where cranes will be situated on, over, or adjacent to the Company's corridor and within a distance of the boom length plus 15'-0" from the centerline of track.
- b. Railroad tracks and other Company and Railroad property must be protected from damage during the erection procedure.
- c. A pre-erection meeting shall be conducted with the Department, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the erection procedure.
- d. The Railroad Engineer or his designated representative must be present at the site during the entire erection procedure period.
- e. For field splices located over Company property, a minimum of 50% of the holes for each connection shall be filled with bolts or pins prior to releasing the crane. A minimum of 50% of the holes filled shall be filled with bolts. All bolts must be appropriately tightened. Any changes to previously approved field splice locations must be submitted to the Railroad for review and approval. Refer to Norfolk Southern's Overhead Grade Separation Design Criteria for additional splice details (Norfolk Southern Public Projects Manual Appendix H.1, Section 4.A.3.).

2. Submittal Requirements

- a. In addition the submittal requirements outlined in Section 5.A.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer:

- (1) As-built beam seat elevations - All as-built bridge seats and top of rail elevations shall be furnished to the Railroad Engineer for review and verification at least 30 days in advance of the erection, to ensure that minimum vertical clearances as approved in the plans will be achieved.
- (2) A plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or staging locations shown. The location of all tracks and other Railroad and Company facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.
- (3) Rating sheets showing cranes or lifting devices to be adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been “built-in” to the crane charts are not to be considered when determining the 150% factor of safety.
- (4) Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the proposed structure showing complete and sufficient details with supporting data for the erection of the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of a North Carolina Registered Professional Engineer submitting the procedure and calculations.
- (5) The Contractor shall provide a sketch of all rigging components from the crane’s hook block to the beam. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been “built-in” to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Department and the Railroad.
- (6) A complete erection procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.
- (7) Design and supporting calculations for the temporary support of components, including but not limited to temporary girder tie-downs and falsework.

I. Blasting:

1. The Contractor shall obtain advance approval of the Railroad Engineer and the Department Engineer for use of explosives on or adjacent to Company or Railroad property. The request for permission to use explosives shall include a detailed blasting plan. If permission for use of explosives is granted, the Contractor will be required to comply with the following:
 - a. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Contractor and a licensed blaster.

- b. Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way radios.
 - c. No blasting shall be done without the presence of the Railroad Engineer or his authorized representative. At least 72 hours advance notice to the person designated in the Railroad's notice of authorization to proceed (see paragraph 2.B) will be required to arrange for the presence of an authorized Railroad representative and such flagging as the Railroad may require.
 - d. Have at the job site adequate equipment, labor and materials and allow sufficient time to clean up debris resulting from the blasting without delay to trains, as well as correcting at his expense any track misalignment or other damage to Railroad property resulting from the blasting as directed by the Railway's authorized representative. If his actions result in delay of trains, the Contractor shall bear the entire cost thereof.
 - e. The blasting Contractor shall have a copy of the approved blasting plan on hand while on the site.
 - f. Explosive materials or loaded holes shall not be left unattended at the blast site.
 - g. A seismograph shall be placed on the track shoulder adjacent to each blast which will govern the peak particle velocity of two inches per second. Measurement shall also be taken on the ground adjacent to structures as designated by a qualified and independent blasting consultant. The Railroad reserves the option to direct the placement of additional seismographs at structures or other locations of concern, without regard to scaled distance.
 - h. After each blast, the blasting Contractor shall provide a copy of their drill log and blast report, which includes number of holes, depth of holes, and number of decks, type and pounds of explosives used per deck.
 - i. The Railroad may require top of rail elevations and track centers taken before, during and after the blasting and excavation operation to check for any track misalignment resulting from the Contractor's activities.
2. The Railroad representative will:
 - a. Determine approximate location of trains and advise the Contractor the appropriate amount of time available for the blasting operation and clean up.
 - b. Have the authority to order discontinuance of blasting if, in his opinion, blasting is too hazardous or is not in accord with these special provisions.
 3. The Contractor must hire, at no expense to the Railroad or the Company, a qualified and independent blasting consultant to oversee the use of explosives. The blasting consultant will:
 - a. Review the Contractor's proposed drilling and loading patterns, and with the blasting consultant's personnel and instruments, monitor the blasting operations.
 - b. Confirm that the minimum amounts of explosives are used to remove the rock.

- c. Be empowered to intercede if he concludes that the Contractor's blasting operations are endangering the Railroad.
 - d. Submit a letter acknowledging that he has been engaged to oversee the entire blasting operation and that he approves of the blasting plan.
 - e. Furnish copies of all vibration readings to the Railroad representative immediately after each blast. The representative will sign and date the seismograph tapes after each shot to verify the readings are for that specific shot.
 - f. Advise the Railroad representative as to the safety of the operation and notify him of any modifications to the blasting operation as the work progresses.
4. The request for permission to use explosives on the Company's corridor shall include a blasting proposal providing the following details:
- a. A drawing which shows the proposed blasting area, location of nearest hole and distance to Railway structures, all with reference to the centerline of track.
 - b. Hole diameter.
 - c. Hole spacing and pattern.
 - d. Maximum depth of hole.
 - e. Maximum number of decks per hole.
 - f. Maximum pounds of explosives per hole.
 - g. Maximum pounds of explosives per delay.
 - h. Maximum number of holes per detonation.
 - i. Type of detonator and explosives to be used. (Electronic detonating devices will not be permitted). Diameter of explosives if different from hole diameter.
 - j. Approximate dates and time of day when the explosives are to be detonated.
 - k. Type of flyrock protection.
 - l. Type and patterns of audible warning and all clear signals to be used before and after each blast.
 - m. A copy of the blasting license and qualifications of the person directly in charge of the blasting operation, including their name, address and telephone number.
 - n. A copy of the Department's permit granting permission to blast on the site.
 - o. A letter from the blasting consultant acknowledging that he has been engaged to oversee the entire blasting operation and that he approves of the blasting plan.
 - p. In addition to the insurance requirements outlined in Paragraph 14 of these Provisions, A certificate of insurance from the Contractor's insurer stating the amount of coverage for XCU (Explosive Collapse and Underground Hazard) insurance and that XCU Insurance is in force for this project.
 - q. A copy of the borings and Geotechnical information or report.
- J. Track Monitoring

1. At the direction of the Railroad Engineer, any activity that has the potential to disturb the Railroad track structure may require the Contractor to submit a detailed track monitoring program for approval by the Railroad Engineer.
2. The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. Railroad reserves the right to modify the survey locations and monitoring frequency as necessary during the project.
3. The survey data shall be collected in accordance with the approved frequency and immediately furnished to the Railroad Engineer for analysis.
4. If any movement has occurred as determined by the Railroad Engineer, the Railroad will be immediately notified. Railroad, at its sole discretion, shall have the right to immediately require all Contractor operations to be ceased and determine what corrective action is required. Any corrective action required by the Railroad or performed by the Railroad including the monitoring of corrective action of the Contractor will be at project expense.

K. Maintenance of Railroad and Company Facilities:

1. The Contractor will be required to maintain all ditches and drainage structures free of silt or other obstructions which may result from his operations and provide and maintain any erosion control measures as required. The Contractor will promptly repair eroded areas within the Company's corridor and repair any other damage to the property of the Railroad, Company or its tenants.
2. If, in the course of construction, it may be necessary to block a ditch, pipe or other drainage facility, temporary pipes, ditches or other drainage facilities shall be installed to maintain adequate drainage, as approved by the Railroad Engineer. Upon completion of the work, the temporary facilities shall be removed and the permanent facilities restored.
3. All such maintenance and repair of damages due to the Contractor's operations shall be done at the Contractor's expense.

L. Storage of Materials and Equipment:

1. Materials and equipment shall not be stored where they will interfere with Railroad operations, nor on the Company's corridor or property without first having obtained permission from the Company Engineer and Railroad Engineer, and such permission will be with the understanding that the Company and Railroad will not be liable for damage to such material and equipment from any cause and that the Company Engineer or Railroad Engineer may move or require the Contractor to move, at the Contractor's expense, such material and equipment.
2. All grading or construction machinery that is left parked near the track unattended by a watchman shall be effectively immobilized so that it cannot be moved by unauthorized persons. The Contractor shall protect, defend, indemnify and save Company and Railroad, and any associated, controlled or affiliated corporation, harmless from and against all losses, costs, expenses, claim or liability for loss or

damage to property or the loss of life or personal injury, arising out of or incident to the Contractor's failure to immobilize grading or construction machinery.

M. Cleanup:

1. Upon completion of the work, the Contractor shall remove from within the limits of the Company's corridor and property, all machinery, equipment, surplus materials, falsework, rubbish or temporary buildings of the Contractor, and leave said corridor and property in a neat condition satisfactory to the Company Engineer and Railroad Engineer or their authorized representatives.

6. DAMAGES:

- A. The Contractor shall assume all liability for any and all damages to his work, employees, servants, equipment and materials caused by Railroad traffic.
- B. Any cost incurred by the Company or Railroad for repairing damages to its property or to property of its tenants, caused by or resulting from the operations of the Contractor, shall be paid directly to the Company or Railroad by the Contractor.

7. FLAGGING SERVICES:

A. Requirements:

1. Flagging services will not be provided until the Contractor's insurance has been reviewed & approved by the Company and Railroad.
2. Under the terms of the agreement between the Department, the Company and the Railroad, the Railroad has sole authority to determine the need for flagging required to protect its operations. In general, the requirements of such services will be whenever the Contractor's personnel or equipment are or are likely to be, working on the Company's corridor, or across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a Railroad structure or the Railroad roadbed or surface and alignment of any track to such extent that the movement of trains must be controlled by flagging.
3. Normally, the Railroad will assign one flagman to a project; but in some cases, more than one may be necessary, such as yard limits where three (3) flagmen may be required. However, if the Contractor works within distances that violate instructions given by the Railroad's authorized representative or performs work that has not been scheduled with the Railroad's authorized representative, a flagman or flagmen may be required full time until the project has been completed. Should such violations or unscheduled, unauthorized work by the Contractor result in full time flagging being required by the Railroad, the additional cost of such flagging above normal flagging cost shall be deducted from the final payment by the Department to the Contractor as provided in Article 109-9 of the Standard Specifications. Neither Department nor Company nor Railroad will be liable for damages resulting from unscheduled or unauthorized work.
4. For Projects exceeding 30 days of construction, Contractor shall provide the flagmen a small work area with a desk/counter and chair within the field/site trailer, including the use of bathroom facilities, where the flagman can check in/out with the Project, as well as to the flagman's home terminal. The work area should provide access to two

(2) electrical outlets for recharging radio(s), and a laptop computer; and have the ability to print off needed documentation and orders as needed at the field/site trailer. This should aid in maximizing the flagman's time and efficiency on the Project.

B. Scheduling and Notification:

1. The Contractor's work requiring Railroad flagging should be scheduled to limit the presence of a flagman at the site to a maximum of 50 hours per week. The Contractor shall receive Railroad approval of work schedules requiring a flagman's presence in excess of 40 hours per week.
2. Not later than the time that approval is initially requested to begin work on Company's corridor, Contractor shall furnish to the Railroad, the Company and the Department a schedule for all work required to complete the portion of the project within the Company's corridor and arrange for a job site meeting between the Contractor, the Department, and the Railroad's authorized representative. Flagman or Flagmen may not be provided until the job site meeting has been conducted and the Contractor's work scheduled.
3. The Contractor will be required to give the Railroad representative at least 10 working days of advance written notice of intent to begin work within the Company's corridor in accordance with this special provision. Once begun, when such work is then suspended at any time, or for any reason, the Contractor will be required to give the Railroad representative at least 3 working days of advance notice before resuming work on Company corridor. Such notices shall include sufficient details of the proposed work to enable the Railroad representative to determine if flagging will be required. If such notice is in writing, the Contractor shall furnish the Engineer a copy; if notice is given verbally, it shall be confirmed in writing with copy to the Engineer. If flagging is required, no work shall be undertaken until the flagman, or flagmen are present at the job site. It may take up to 30 days to obtain flagging initially from the Railroad. When flagging begins, the flagman is usually assigned by the Railroad to work at the project site on a continual basis until no longer needed and cannot be called for on a spot basis. If flagging becomes unnecessary and is suspended, it may take up to 30 days to again obtain from the Railroad. Due to Railroad labor agreements, it is necessary to give 5 working days notice before flagging service may be discontinued and responsibility for payment stopped.
4. If, after the flagman is assigned to the project site, an emergency arises that requires the flagman's presence elsewhere, then the Contractor shall delay work on Company corridor until such time as the flagman is again available. Any additional costs resulting from such delay shall be borne by the Contractor and not the Department, the Company or the Railroad.

C. Payment:

1. The Department will be responsible for paying the Railroad directly for any and all costs of flagging which may be required to accomplish the construction. The Contractor shall reimburse the Railroad for any costs of the flagging which is required for the benefit of the Contractor.

2. The estimated cost of flagging is the current rate per day based on a 10-hour work day. This cost includes the base pay for the flagman, overhead, and includes a per diem charge for travel expenses, meals and lodging. The charge to the Department by the Railroad will be the actual cost based on the rate of pay for the Railroad's employees who are available for flagging service at the time the service is required.
3. Work by a flagman in excess of 8 hours per day or 40 hours per week, but not more than 12 hours a day will result in overtime pay at 1 and 1/2 times the appropriate rate. Work by a flagman in excess of 12 hours per day will result in overtime at 2 times the appropriate rate. If work is performed on a holiday, the flagging rate is 2 and 1/2 times the normal rate.
4. Railroad work involved in preparing and handling bills will also be charged to the Department. Charges to the Department by the Railroad shall be in accordance with applicable provisions of Subchapter B, Part 140, Subpart I and Subchapter G, Part 646, Subpart B of the Federal-Aid Policy Guide issued by the Federal Highway Administration on December 9, 1991, including all current amendments. Flagging costs are subject to change. The above estimates of flagging costs are provided for information only and are not binding in any way.

D. Verification:

1. Railroad's flagman will electronically enter flagging time via Railroad's electronic billing system. Any complaints concerning flagging must be resolved in a timely manner. If the need for flagging is questioned, please contact the Railroad Engineer. All verbal complaints will be confirmed in writing by the Contractor within 5 working days with a copy to the Department Engineer. Address all written correspondence electronically to Railroad Engineer.
2. The Railroad flagman assigned to the project will be responsible for notifying the Department Engineer upon arrival at the job site on the first day (or as soon thereafter as possible) that flagging services begin and on the last day that he performs such services for each separate period that services are provided. The Department's Engineer will document such notification in the project records. When requested, the Department Engineer will also sign the flagman's diary showing daily time spent and activity at the project site.

8. HAUL ACROSS RAILROAD TRACK:

- A. Where the plans show or imply that materials of any nature must be hauled across tracks of the Company or Railroad, unless the plans clearly show that the Department has included arrangements for such haul in its agreement with the Railroad, the Contractor will be required to make all necessary arrangements with the Railroad regarding means of transporting such materials across the tracks of the Company or Railroad. The Contractor or Department will be required to bear all costs incidental to such crossings whether services are performed by his own forces or by Railroad personnel.
- B. No crossing may be established for use of the Contractor for transporting materials or equipment across the tracks of the Company or Railroad unless specific authority for its installation, maintenance, necessary watching and flagging thereof and

removal, until a temporary private crossing agreement has been executed between the Contractor and Railroad. The approval process for an agreement normally takes 90 days.

9. WORK FOR THE BENEFIT OF THE CONTRACTOR:

- A. All temporary or permanent changes in wire lines or other facilities owned by the Company or Railroad and which are considered necessary to the project are shown on the plans; included in the force account agreement between the Department and the Railroad or will be covered by appropriate revisions to same which will be initiated and approved by the Department and/or the Railroad.
- B. Should the Contractor desire any changes in addition to the above, then he shall make separate arrangements with the Railroad for same to be accomplished at the Contractor's expense.

10. COOPERATION AND DELAYS:

- A. It shall be the Contractor's responsibility to arrange a schedule with the Railroad for accomplishing stage construction involving work by the Railroad or tenants of the Company. In arranging his schedule he shall ascertain, from the Railroad, the lead time required for assembling crews and materials and shall make due allowance therefore.
- B. No charge or claim of the Contractor against either the Department, the Company or the Railroad will be allowed for hindrance or delay on account of railroad traffic; any work done by the Railroad or other delay incident to or necessary for safe maintenance of railroad traffic or for any delays due to compliance with these special provisions.
- C. The Contractor's attention is called to the fact that neither the Department, Company nor Railroad assumes any responsibility for any work performed by others in connection with the construction of the project, and the Contractor shall have no claim whatsoever against the Department, Company or Railroad for any inconvenience, delay, or additional cost incurred by him on account of such operations by others.

11. TRAINMAN'S WALKWAYS:

- A. Along the outer side of each exterior track of multiple operated track, and on each side of single operated track, an unobstructed continuous space suitable for trainman's use in walking along trains, extending to a line not less than 10 feet from centerline of track, shall be maintained. Any temporary impediments to walkways and track drainage encroachments or obstructions allowed during work hours while Railroad's protective service is provided shall be removed before the close of each work day. If there is any excavation near the walkway, a handrail, with 10'-0" minimum clearance from centerline of track, shall be placed and must conform to AREMA and/or FRA standards.

12. GUIDELINES FOR PERSONNEL ON COMPANY'S CORRIDOR:

- A. The Contractor and/or the Department's personnel authorized to perform work on Company's corridor as specified in Section 2 above are not required to complete Norfolk Southern Roadway Worker Protection Training. However, the Contractor and the Department's personnel must be familiar with Norfolk Southern's standard operating

rules and guidelines, should conduct themselves accordingly, and may be removed from the property for failure to follow these guidelines.

- B. All persons shall wear hard hats. Appropriate eye and hearing protection must be used. Working in shorts is prohibited. Shirts must cover shoulders, back and abdomen. Working in tennis or jogging shoes, sandals, boots with high heels, cowboy and other slip-on type boots is prohibited. Hard-sole, lace-up footwear, zippered boots or boots cinched up with straps which fit snugly about the ankle are adequate. Wearing of safety boots is strongly recommended. Reflective vests are also required within 25' of the centerline of any track and are strongly recommend to be worn in the vicinity of public roadways.
- C. No one is allowed within 25' of the centerline of track without specific authorization from the flagman.
- D. All persons working near track while train is passing are to lookout for dragging bands, chains and protruding or shifted cargo.
- E. No one is allowed to cross tracks without specific authorization from the flagman.
- F. All welders and cutting torches working within 25' of track must stop when train is passing.
- G. No steel tape or chain will be allowed to cross or touch rails without permission from the Railroad.

13. GUIDELINES FOR EQUIPMENT ON COMPANY RIGHT-OF-WAY:

- A. No crane or boom equipment will be allowed to set up to work or park within boom distance plus 15' of centerline of track without specific permission from Railroad official and flagman.
- B. No crane or boom equipment will be allowed to foul track or lift a load over the track without flag protection and track time.
- C. All employees will stay with their machines when crane or boom equipment is pointed toward track.
- D. All cranes and boom equipment under load will stop work while train is passing (including pile driving).
- E. Swinging loads must be secured to prevent movement while train is passing.
- F. No loads will be suspended above a moving train.
- G. No equipment will be allowed within 25' of centerline of track without specific authorization of the flagman.
- H. Trucks, tractors or any equipment will not touch ballast line without specific permission from Railroad official and flagman. Orange construction fencing may be required as directed.
- I. No equipment or load movement within 25' or above a standing train or Railroad equipment without specific authorization of the flagman.

- J. All operating equipment within 25' of track must halt operations when a train is passing. All other operating equipment may be halted by the flagman if the flagman views the operation to be dangerous to the passing train.
- K. All equipment, loads and cables are prohibited from touching rails.
- L. While clearing and grubbing, no vegetation will be removed from Railroad embankment with heavy equipment without specific permission from the Railroad Engineer and flagman.
- M. No equipment or materials will be parked or stored on Company's corridor or property unless specific authorization is granted from the Railroad Engineer.
- N. All unattended equipment that is left parked on Company corridor or property shall be effectively immobilized so that it cannot be moved by unauthorized persons.
- O. All cranes and boom equipment will be turned away from track after each work day or whenever unattended by an operator.
- P. Prior to performing any crane operations, the Contractor shall establish a single point of contact for the Railroad flagman to remain in communication with at all times. Person must also be in direct contact with the individual(s) directing the crane operation(s).

14. INSURANCE:

- A. In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, the Prime Contractor will be required to carry insurance of the following kinds and amounts:
 - 1. a. **Commercial General Liability Insurance** having a combined single limit of not less than \$2,000,000 per occurrence for all loss, damage, cost and expense, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include explosion, collapse, and underground hazard (XCU) coverage, shall be endorsed to name Company and Railroad specified in item A.2.c. below both as the certificate holders and as an additional insureds, and shall include a severability of interests provision.
 - b. **Automobile Liability Insurance** with a combined single limit of not less than \$1,000,000 each occurrence for injury to or death of persons and damage to or loss or destruction of property. Said policy or policies shall be endorsed to name Company and Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured and shall include a severability of interests provision.
 - 2. **Railroad Protective Liability Insurance** having a combined single limit of not less than \$2,000,000 each occurrence and \$6,000,000 in the aggregate applying separately to each annual period. If the project involves track over which passenger trains operate, the insurance limits required are not less than a combined single limit of \$5,000,000 each occurrence and \$10,000,000 in the aggregate applying separately to each annual period. Said policy shall provide coverage for all loss, damage or expense arising from bodily injury and property damage liability, and physical damage to property attributed to acts or omissions at the job site.

The standards for the Railroad Protective Liability Insurance are as follows:

- a. The insurer must be rated A- or better by A.M. Best Railroad, Inc.
NOTE: NS does not accept from insurers Chartis (AIG or Affiliated Company including Lexington Insurance Company), Hudson Group or Liberty or Affiliated Company, American Contractors Insurance Company and Erie Insurance Company including Erie Insurance Exchange and Erie Indemnity Company.
- b. The policy must be written using one of the following combinations of Insurance Services Office (“ISO”) Railroad Protective Liability Insurance Form Numbers:
 - (1) CG 00 35 01 96 and CG 28 31 10 93; or
 - (2) CG 00 35 07 98 and CG 28 31 07 98; or
 - (3) CG 00 35 10 01; or
 - (4) CG 00 35 12 04; or
 - (5) CG 00 35 12 07; or
 - (6) CG 00 35 04 13.
- c. The named insured on each policy as required to be issued to each Company and to Railroad shall read: (NOTE: The below insured is to be treated separately as an insured on each railroad protective policy for a total of (2) two separate policies being issued.)

COMPANY

North Carolina Railroad Company
 2809 Highwoods Boulevard
 Raleigh, NC 27604-1000
 Attn: Infrastructure Manager; and

(NOTE: Company does not share coverage on RRPL with any other entity on this policy)

RAILROAD

Norfolk Southern Corporation and its subsidiaries
 Three Commercial Place
 Norfolk, Virginia 23510-2191
 Attn: Risk Management

(NOTE: Railroad does not share coverage on RRPL with any other entity on this policy)

- d. The description of operations must appear on the Declarations, must match the project description in this agreement, and must include the appropriate Department project and contract identification numbers.
- e. The job location must appear on the Declarations and must include the city, state, and appropriate highway name/number. **NOTE: Do not include any references to milepost, valuation station, or mile marker on the insurance policy. Each**

project description requires a separate insurance policy for both NCR and NS.

- f. The name and address of the prime Contractor must appear on the Declarations.
 - g. The name and address of the Department must be identified on the Declarations as the “Involved Governmental Authority or Other Contracting Party.”
 - h. Endorsements/forms that are required are:
 - (1) Physical damage to Property Amendment
 - (2) Terrorism Risk Insurance Act (TRIA) coverage must be included
 - i. Other endorsements/forms that will be accepted are:
 - (1) Broad Form Nuclear Exclusion – Form IL 00 21
 - (2) 30-day Advance Notice of Non-renewal or cancellation
 - (3) Required State Cancellation Endorsement
 - (4) Quick Reference or Index Form CL/IL 240
 - j. Endorsements/forms that are NOT acceptable are:
 - (1) Any Pollution Exclusion Endorsement except CG 28 31
 - (2) Any Punitive or Exemplary Damages Exclusion
 - (3) Known injury or Damage Exclusion form CG 00 59
 - (4) Any Common Policy Conditions form
 - (5) An Endorsement that limits or excludes Professional Liability coverage
 - (6) A Non-Cumulation of Liability of Pyramiding of Limits Endorsement
 - (7) An Endorsement that excludes TRIA coverage
 - (8) A Sole Agent Endorsement
 - (9) Any type of deductible endorsement of amendment
 - (10) Any other endorsement/form not specifically authorized in item no. 2.h above.
- B. If any part of the work is sublet, similar insurance, and evidence thereof as specified in A.1 above, shall be provided by or on behalf of the subcontractor to cover its operations on Company’s corridor.
- C. All insurance required under the preceding subsection A shall be underwritten by insurers and be of such form and content, as may be acceptable to the Company and Railroad. Prior to entry on Company’s corridor, the original Railroad Protective Liability Insurance Policy and one duplicate copy shall be submitted by the Prime Contractor to the Department at the address below for its review and transmittal to the Company and Railroad. In addition, certificates of insurance evidencing the Prime Contractor’s and any subcontractors’ Commercial General Liability Insurance shall be issued to the Company, the Railroad and the Department at the addresses below, and forwarded to the

Department for its review and transmittal to the Company and the Railroad. The certificates of insurance shall state that the insurance coverage will not be suspended, voided, canceled, or reduced in coverage or limits without (30) days advance written notice to Company, Railroad and the Department. No work will be permitted by Railroad on the Company's corridor until both the Company and Railroad have reviewed and approved the evidence of insurance required herein.

DEPARTMENT:

NCDOT Rail Division
Engineering & Safety Branch
C/O State Railroad Agent
1556 Mail Service Center
Raleigh, NC 27699-1556

RAILROAD:

Risk Management
Norfolk Southern Railway Company
Three Commercial Place
Norfolk, Virginia 23510-2191

COMPANY:

North Carolina Railroad Company
2809 Highwoods Boulevard
Raleigh, NC 27604

- D. The insurance required herein shall in no way serve to limit the liability of Department or its Contractors under the terms of this agreement.
- E. Insurance Submission Procedures
1. Company and Railroad will only accept initial insurance submissions via US Mail or Overnight carrier to the addresses noted in C above. Company and Railroad will NOT accept initial insurance submissions via email or faxes. **Please provide point of contact information with the submission including a phone number and email address.**
 2. Company and Railroad requires the following two (2) forms of insurance in the initial insurance submission to be submitted under a cover letter providing details of the project and contact information. The Company and Railroad are to be treated separately as an insured on each insurance policy for a total of (2) two separate policies being issued.
 - a. The full original or certified true countersigned copy of the railroad protective liability insurance policy in its entirety inclusive of all declarations, schedule of forms and endorsements along with the policy forms and endorsements.
 - b. The Contractor's commercial general, automobile, and workers' compensation liability insurance certificate of liability insurance evidencing a combined single limit of a minimum of \$2M per occurrence of general and \$1M per occurrence of automobile liability insurance naming North Carolina Railroad Company, 2809 Highwoods Boulevard, Raleigh, 27604 and Norfolk Southern Railway Company, Three Commercial Place, Norfolk, VA 23510 as the certificate holders and as an additional insureds on both the general and automobile liability insurance policy.

3. It should be noted that the Company and Railroad do not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Company and Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.

F. The insurance amounts specified are minimum amounts and the Contractor may carry insurance in larger amounts if he so desires.

G. All insurance herein before specified shall be carried until the final inspection and acceptance of the Project by the Department, Company and Railroad, or acceptance of that portion of the Project within Company's corridor. At this point, no work or any other activities by the Contractor shall take place in Company's corridor without written permission from the Department, Company and Railroad.

15. FAILURE TO COMPLY:

A. In the event the Contractor violates or fails to comply with any of the requirements of these Special Provisions:

1. The Railroad Engineer may require that the Contractor vacate Company's corridor.
2. The Department's Engineer may withhold all monies due the Contractor on monthly statements.

B. Any such orders shall remain in effect until the Contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Department's Engineer.

16. PAYMENT FOR COST OF COMPLIANCE:

No separate payment will be made for any extra cost incurred on account of compliance with these special provisions. All such costs shall be included in prices bid for other items of the work as specified in the payment items.

17. COMPLETION AND ACCEPTANCE:

Upon completion of the work, the Contractor shall remove from within the limits of the Company's corridor all machinery, equipment, surplus materials, rubbish or temporary buildings of the Contractor, and leave said corridor in a neat and orderly condition. After the final inspection has been made and work found to be completed in a satisfactory manner acceptable to the Department, the Company and the Railroad, the Department will be notified of the Railroad's acceptance in writing by the **Railroad's** Chief Engineer or his authorized representative within ten (10) days or as soon thereafter as practicable.

18. PROJECT INFORMATION

SITE 1

- A. NS File No.: _____
- B. NCR/NS Milepost: _____
- C. Department's Project No.: _____

PROTECTION OF RAILWAY INTEREST (CSX)

Under the terms of these provisions, the North Carolina Department of Transportation shall hereinafter be called “Sponsor”, and the [CSX Transportation, Inc.](#) shall hereinafter be called “Railroad”.

The **CSXT Special Provisions, CSXT Construction Submission Criteria, and Exhibit B – Insurance Requirements**, found as an Appendices of the [CSX Transportation Public Projects Manual](#), shall serve as the basis for the railroad provisions of this contract and are attached as part of this provision. The following additional statements are to be included as addendums to the attached provisions:

- Requirements throughout these provisions placed on “Agency or its Contractor” shall be the sole responsibility of the Contractor unless specifically stated otherwise elsewhere within these provisions. All contractor costs for railroad coordination shall be considered incidental to the other pay items.
- Unless noted elsewhere in these provisions, all contact with Railroad should be addressed to the below individual who shall be considered the CSXT Representative.

(To be determined)

- The Engineer shall be considered the Agency Representative.
- All required work plan submittals shall be forwarded to and approved in writing by the Railroad Company prior to proceeding with the work of each applicable phase. Up to thirty (30) days will be required to review all submittals. Up to an additional thirty (30) days will be required to review any subsequent submissions returned not approved.
- At project completion, a complete set of “As Built” plans for the proposed construction shall be submitted to CSXT Bridge Maintenance and Design Group. CSXT will keep these plans on file in Jacksonville for future reference. Please address these plans to:

(To be determined)

- Section V.A - The following paragraph shall be added as the second paragraph

The Department will bear all railroad costs incidental to such crossings including flagging and services performed by Railroad personnel. Written approval from the Engineer is required prior to use of the crossings. The Contractor shall sequence construction to minimize the duration the crossing(s) remain in-place. The Contractor shall reimburse the Department for any costs of the flagging for the crossing outside of the duration approved by the Engineer. Cost of the installation, maintenance and removal of the temporary crossing(s) incurred by the Contractor will be considered incidental to the other pay items.

- Section X.C – Flagging requests should be made to the local CSXT Roadmaster, Mr. Morgan Taylor, at telephone (804) 908-1995 or by email morgan_taylor@csx.com. Termination or cancellation of flagger requires ten (10) days notice to avoid incurring costs.

- Section X.D - The following paragraph shall be added as the second paragraph

Should violations of Railroad policy or unscheduled, unauthorized work by the Contractor result in additional full time flagging being required by the Railroad, the additional cost of such flagging above normal flagging cost shall be deducted from the final payment to the Contractor as provided in Article 109-9 of the Standard Specifications. Neither Department nor Railroad will be liable for damages resulting from unscheduled or unauthorized work.

- Section X.E - Include the following sentence at the end of the paragraph

The Contractor shall reimburse the Railroad for any costs of the flagging which is required for work for the benefit of the Contractor.

- Insurance Requirements Section I.4.d - The Project Description and Designation on the Declarations shall read:
(to be determined)
- Insurance Requirements Section II.1 - Insurance documents shall be submitted to the Sponsor at the following address:

NCDOT Rail Division
Engineering & Safety Branch
C/O State Railroad Agent
1556 Mail Service Center
Raleigh, NC 27699-1556

- The Contractor shall not commence any work on railroad rights-of-way until a fully executed copy of the attached CSX Transportation Inc. Temporary Right of Entry Agreement has been received and all other requirements of these provisions for commencement of work have been completed.

CSXT SPECIAL PROVISIONS

DEFINITIONS:

As used in these Special Provisions, all capitalized terms shall have the meanings ascribed to them by the Agreement, and the following terms shall have the meanings ascribed to them below:

“CSXT” shall mean CSX Transportation, Inc., its successors and assigns.

“CSXT Representative” shall mean the authorized representative of CSX Transportation, Inc.

"Agreement" shall mean the Agreement to which this Exhibit C is made a part thereof and as may be amended from time to time.

“Agency” shall mean the **North Carolina Department of Transportation**.

“Agency Representative” shall mean the authorized representative of **North Carolina Department of Transportation**.

“Contractor” shall have the meaning ascribed to such term by the Agreement.

“Work” shall mean the Project as described in the Agreement.

I. AUTHORITY OF CSXT ENGINEER

The CSXT Representative shall have final authority in all matters affecting the safe maintenance of CSXT operations and CSXT property, and his or her approval shall be obtained by the Agency or its Contractor for methods of construction to avoid interference with CSXT operations and CSXT property and all other matters contemplated by the Agreement and these Special Provisions.

II. INTERFERENCE WITH CSXT OPERATIONS

- A. Agency or its Contractor shall arrange and conduct its work so that there will be no interference with CSXT operations, including train, signal, telephone and telegraphic services, or damage to CSXT's property, or to poles, wires, and other facilities of tenants on CSXT's Property or right-of-way. Agency or its Contractor shall store materials so as to prevent trespassers from causing damage to trains, or CSXT Property. Whenever Work is likely to affect the operations or safety of trains, the method of doing such Work shall first be submitted to the CSXT Representative for approval, but such approval shall not relieve Agency or its Contractor from liability in connection with such Work.
- B. If conditions arising from or in connection with the Project require that immediate and unusual provisions be made to protect train operation or CSXT's property, Agency or its Contractor shall make such provision. If the CSXT Representative determines that such provision is insufficient, CSXT may, at the expense of Agency or its Contractor, require or provide such provision as may be deemed necessary, or cause the Work to cease immediately.

II. NOTICE OF STARTING WORK.

Agency or its Contractor shall not commence any work on CSXT Property or right-of-way

until it has complied with the following conditions:

- A. Notify CSXT in writing of the date that it intends to commence Work on the Project. Such notice must be received by CSXT at least ten (10) business days in advance of the date Agency or its Contractor proposes to begin Work on CSXT property. The notice must refer to this Agreement by date. If flagging service is required, such notice shall be submitted at least thirty (30) business days in advance of the date scheduled to commence the Work.
- B. Obtain authorization from the CSXT Representative to begin Work on CSXT property, such authorization to include an outline of specific conditions with which it must comply.
- C. Obtain from CSXT the names, addresses and telephone numbers of CSXT's personnel who must receive notice under provisions in the Agreement. Where more than one individual is designated, the area of responsibility of each shall be specified.

IV. WORK FOR THE BENEFIT OF THE CONTRACTOR

- A. No temporary or permanent changes to wire lines or other facilities (other than third party fiber optic cable transmission systems) on CSXT property that are considered necessary to the Work are anticipated or shown on the Plans. If any such changes are, or become, necessary in the opinion of CSXT or Agency, such changes will be covered by appropriate revisions to the Plans and by preparation of a force account estimate. Such force account estimate may be initiated by either CSXT or Agency, but must be approved by both CSXT and Agency. Agency or Contractor shall be responsible for arranging for the relocation of the third party fiber optic cable transmission systems, at no cost or expense to CSXT.
- B. Should Agency or Contractor desire any changes in addition to the above, then it shall make separate arrangements with CSXT for such changes to be accomplished at the Agency or Contractor's expense.

V. HAUL ACROSS RAILROAD

- A. If Agency or Contractor desires access across CSXT property or tracks at other than an existing and open public road crossing in or incident to construction of the Project, the Agency or Contractor must first obtain the permission of CSXT and shall execute a license agreement or right of entry satisfactory to CSXT, wherein Agency or Contractor agrees to bear all costs and liabilities related to such access.
- B. Agency and Contractor shall not cross CSXT's property and tracks with vehicles or equipment of any kind or character, except at such crossing or crossings as may be permitted pursuant to this section.

VI. COOPERATION AND DELAYS

- A. Agency or Contractor shall arrange a schedule with CSXT for accomplishing stage

construction involving work by CSXT. In arranging its schedule, Agency or Contractor shall ascertain, from CSXT, the lead time required for assembling crews and materials and shall make due allowance therefor

- B. Agency or Contractor may not charge any costs or submit any claims against CSXT for hindrance or delay caused by railroad traffic; work done by CSXT or other delay incident to or necessary for safe maintenance of railroad traffic; or for any delays due to compliance with these Special Provisions.
- C. Agency and Contractor shall cooperate with others participating in the construction of the Project to the end that all work may be carried on to the best advantage.
- D. Agency and Contractor understand and agree that CSXT does not assume any responsibility for work performed by others in connection with the Project. Agency and Contractor further understand and agree that they shall have no claim whatsoever against CSXT for any inconvenience, delay or additional cost incurred by Agency or Contractor on account of operations by others.

VII. STORAGE OF MATERIALS AND EQUIPMENT

Agency and Contractor shall not store their materials or equipment on CSXT's property or where they may potentially interfere with CSXT's operations, unless Agency or Contractor has received CSXT Representative's prior written permission. Agency and Contractor understand and agree that CSXT will not be liable for any damage to such materials and equipment from any cause and that CSXT may move, or require Agency or Contractor to move, such material and equipment at Agency's or Contractor's sole expense. To minimize the possibility of damage to the railroad tracks resulting from the unauthorized use of equipment, all grading or other construction equipment that is left parked near the tracks unattended by watchmen shall be immobilized to the extent feasible so that it cannot be moved by unauthorized persons.

VIII. CONSTRUCTION PROCEDURES

A. General

1. Construction work on CSXT property shall be subject to CSXT's inspection and approval.
2. Construction work on CSXT property shall be in accord with CSXT's written outline of specific conditions and with these Special Provisions.
3. Contractor shall observe the terms and rules of the CSXT Safe Way manual, which Agency and Contractor shall be required to obtain from CSXT, and in accord with any other instructions furnished by CSXT or CSXT's Representative.

B. Blasting

1. Agency or Contractor shall obtain CSXT Representative's and Agency

Representative's prior written approval for use of explosives on or adjacent to CSXT property. If permission for use of explosives is granted, Agency or Contractor must comply with the following:

- a. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of Agency or Contractor.
 - b. Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.
 - c. No blasting shall be done without the presence of an authorized representative of CSXT. At least thirty (30) days advance notice to CSXT Representative is required to arrange for the presence of an authorized CSXT representative and any flagging that CSXT may require.
 - d. Agency or Contractor must have at the Project site adequate equipment, labor and materials, and allow sufficient time, to (i) clean up (at Agency's expense) debris resulting from the blasting without any delay to trains; and (ii) correct (at Agency's expense) any track misalignment or other damage to CSXT's property resulting from the blasting, as directed by CSXT Representative, without delay to trains. If Agency's or Contractor's actions result in delay of any trains, including Amtrak passenger trains, Agency shall bear the entire cost thereof.
 - e. Agency and Contractor shall not store explosives on CSXT property.
2. CSXT Representative will:
- a. Determine the approximate location of trains and advise Agency or Contractor of the approximate amount of time available for the blasting operation and clean-up.
 - b. Have the authority to order discontinuance of blasting if, in his or her opinion, blasting is too hazardous or is not in accord with these Special Provisions.

IX. MAINTENANCE OF DITCHES ADJACENT TO CSXT TRACKS

Agency or Contractor shall maintain all ditches and drainage structures free of silt or other obstructions that may result from their operations. Agency or Contractor shall provide erosion control measures during construction and use methods that accord with applicable state standard specifications for road and bridge construction, including either (1) silt fence; (2) hay or straw barrier; (3) berm or temporary ditches; (4) sediment basin; (5) aggregate checks; and (6) channel lining. All such maintenance and repair of damages due to Agency's or Contractor's operations shall be performed at Agency's expense.

X. FLAGGING / INSPECTION SERVICE

- A. CSXT has sole authority to determine the need for flagging required to protect its operations and property. In general, flagging protection will be required whenever Agency or Contractor or their equipment are, or are likely to be, working within fifty (50) feet of live track or other track clearances specified by CSXT, or over tracks.
- B. Agency shall reimburse CSXT directly for all costs of flagging that is required on account of construction within CSXT property shown in the Plans, or that is covered by an approved plan revision, supplemental agreement or change order.
- C. Agency or Contractor shall give a minimum of thirty (30) days advance notice to CSXT Representative for anticipated need for flagging service. No work shall be undertaken until the flag person(s) is/are at the job site. If it is necessary for CSXT to advertise a flagging job for bid, it may take up to ninety (90) days to obtain this service, and CSXT shall not be liable for the cost of delays attributable to obtaining such service.
- D. CSXT shall have the right to assign an individual to the site of the Project to perform inspection service whenever, in the opinion of CSXT Representative, such inspection may be necessary. Agency shall reimburse CSXT for the costs incurred by CSXT for such inspection service. Inspection service shall not relieve Agency or Contractor from liability for its Work.
- E. CSXT shall render invoices for, and Agency shall pay for, the actual pay rate of the flagpersons and inspectors used, plus standard additives, whether that amount is above or below the rate provided in the Estimate. If the rate of pay that is to be used for inspector or flagging service is changed before the work is started or during the progress of the work, whether by law or agreement between CSXT and its employees, or if the tax rates on labor are changed, bills will be rendered by CSXT and paid by Agency using the new rates. Agency and Contractor shall perform their operations that require flagging protection or inspection service in such a manner and sequence that the cost of such will be as economical as possible.

XI. UTILITY FACILITIES ON CSXT PROPERTY

Agency shall arrange, upon approval from CSXT, to have any utility facilities on or over CSXT Property changed as may be necessary to provide clearances for the proposed trackage.

XII. CLEAN-UP

Agency or Contractor, upon completion of the Project, shall remove from CSXT's Property any temporary grade crossings, any temporary erosion control measures used to control drainage, all machinery, equipment, surplus materials, falsework, rubbish, or temporary buildings belonging to Agency or Contractor. Agency or Contractor, upon completion of the Project, shall leave CSXT Property in neat condition, satisfactory to CSXT Representative.

XIII. FAILURE TO COMPLY

If Agency or Contractor violate or fail to comply with any of the requirements of these Special Provisions, (a) CSXT may require Agency and/or Contractor to vacate CSXT Property; and (b) CSXT may withhold monies due Agency and/or Contractor; (c) CSXT may require Agency to withhold monies due Contractor; and (d) CSXT may cure such failure and the Agency shall reimburse CSXT for the cost of curing such failure.

CSXT INSURANCE REQUIREMENTS

I. Insurance Policies:

Agency and Contractor, if and to the extent that either is performing work on or about CSXT's property, shall procure and maintain the following insurance policies:

1. Commercial General Liability coverage at their sole cost and expense with limits of not less than \$5,000,000 in combined single limits for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional named insured. The policy shall include endorsement ISO CG 24 17 evidencing that coverage is provided for work within 50 feet of a railroad. If such endorsement is not included, railroad protective liability insurance must be provided as described in item 4 below.
2. Statutory Worker's Compensation and Employers Liability Insurance with limits of not less than \$1,000,000, which insurance must contain a waiver of subrogation against CSXT and its affiliates (if permitted by state law).
3. Commercial automobile liability insurance with limits of not less than \$1,000,000 combined single limit for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional named insured. The policy shall include endorsement ISO CA 20 70 evidencing that coverage is provided for work within 50 feet of a railroad. If such endorsement is not included, railroad protective liability insurance must be provided as described in item 4 below.
4. Railroad protective liability insurance with limits of not less than \$5,000,000 combined single limit for bodily injury and/or property damage per occurrence and an aggregate annual limit of \$10,000,000, which insurance shall satisfy the following additional requirements:
 - a. The Railroad Protective Insurance Policy must be on the ISO/RIMA Form of Railroad Protective Insurance - Insurance Services Office (ISO) Form CG 00 35.
 - b. CSX Transportation must be the named insured on the Railroad Protective Insurance Policy.
 - c. Name and Address of Contractor and Agency must appear on the Declarations page.

- d. Description of operations must appear on the Declarations page and must match the Project description.
 - e. Authorized endorsements must include the Pollution Exclusion Amendment - CG 28 31, unless using form CG 00 35 version 96 and later.
 - f. Authorized endorsements may include:
 - (i). Broad Form Nuclear Exclusion - IL 00 21
 - (ii) 30-day Advance Notice of Non-renewal or cancellation
 - (iii) Required State Cancellation Endorsement
 - (iv) Quick Reference or Index - CL/IL 240
 - g. Authorized endorsements may not include:
 - (i) A Pollution Exclusion Endorsement except CG 28 31
 - (ii) A Punitive or Exemplary Damages Exclusion
 - (iii) A “Common Policy Conditions” Endorsement
 - (iv) Any endorsement that is not named in Section 4 (e) or (f) above.
 - (v) Policies that contain any type of deductible
5. All insurance companies must be A. M. Best rated A- and Class VII or better.
 6. The CSX OP number or CSX contract number, as applicable, must appear on each Declarations page and/or certificates of insurance.
 7. Such additional or different insurance as CSXT may require.

II. Additional Terms

1. Contractor must submit the original Railroad Protective Liability policy, Certificates of Insurance and all notices and correspondence regarding the insurance policies to:

Insurance Department
 CSX Transportation, Inc.
 500 Water Street, C-907
 Jacksonville, FL 32202

OR

insurancedocuments@csx.com and Randy.Koonce@arcadis.com

2. Neither Agency nor Contractor may begin work on the Project until it has received CSXT’s written approval of the required insurance.

CSX Transportation Construction Submission Requirements

INTRODUCTION

The intent of this document is to guide outside agencies and their Contractors when performing work on, over, or with potential to impact CSXT property (ROW). Work plans shall be submitted for review to the designated CSXT Engineering Representative for all work which presents the potential to affect CSXT property or operations; this document shall serve as a guide in preparing these work plans. All work shall be performed in a manner that does not adversely impact CSXT operations or safety; as such, the requirements of this document shall be strictly adhered to, in addition to all other applicable standards associated with the construction. Applicable standards include, but are not limited to, CSXT Standards and Special Provisions, CSXT Insurance Requirements, CSXT Pipeline Occupancy Criteria, as well as the governing local, county, state and federal requirements. It shall be noted that this document and all other CSXT standards are subject to change without notice, and future revisions will be made available at the CSXT website: www.csx.com.

I. DEFINITIONS

1. Agency – The project sponsor (i.e., State DOT, Local Agencies, Private Developer, etc.)
2. AREMA – American Railway Engineering and Maintenance-of-Way Association – the North American railroad industry standards group. The use of this term shall be in specific reference to the AREMA Manual for Railway Engineering.
3. Construction Submission – The Agency or its representative shall submit six (6) sets of plans, supporting calculations, and detailed means and methods procedures for the specific proposed activity. All plans, specifications, and supporting calculations shall be signed/sealed by a Professional Engineer as defined below.
4. Controlled Demolition – Removal of an existing structure or subcomponents in a manner that positively prevents any debris or material from falling, impacting, or otherwise affecting CSXT employees, equipment or property. Provisions shall be made to ensure that there is no impairment of railroad operations or CSXT’s ability to access its property at all times.
5. Contractor – The Agency’s representative retained to perform the project work.
6. Engineer – CSXT Engineering Representative or a GEC authorized to act on the behalf of CSXT.
7. Flagman – A qualified CSXT employee with the sole responsibility to direct or restrict movement of trains, at or through a specific location, to provide protection for workers.
8. GEC – General Engineering Consultant who has been authorized to act on the behalf of CSXT.

9. Horizontal Clearance – Distance measured perpendicularly from centerline of any track to the nearest obstruction at any elevation between TOR and the maximum vertical clearance of the track.
10. Professional Engineer – An engineer who is licensed in State or Commonwealth in which the project is to occur. All plans, specifications, and supporting calculations shall be prepared by the Licensed Professional Engineer and shall bear his/her seal and signature.
11. Potential to Foul – Work having the possibility of impacting CSXT property or operations; defined as one or more of the following:
 - a. Any activity where access onto CSXT property is required.
 - b. Any activity where work is being performed on CSXT ROW.
 - c. Any excavation work adjacent to CSXT tracks or facilities, within the Theoretical Railroad Live Load Influence Zone, or where the active earth pressure zone extends within the CSXT property limits.
 - d. The use of any equipment where, if tipped and laid flat in any direction (360 degrees) about its center pin, can encroach within twenty five feet (25'-0") of the nearest track centerline. This is based upon the proposed location of the equipment during use, and may be a function of the equipment boom length. Note that hoisting equipment with the potential to foul must satisfy the 150% factor of safety requirement for lifting capacities.
 - e. Any work where the scatter of debris, or other materials has the potential to encroach within twenty five feet (25'-0") of the nearest track centerline.
 - f. Any work where significant vibration forces may be induced upon the track structure or existing structures located under, over, or adjacent to the track structure.
 - g. Any other work which poses the potential to disrupt rail operations, threaten the safety of railroad employees, or otherwise negatively impact railroad property, as determined by CSXT
12. ROW – Right of Way; Refers to CSXT Right-of-Way as well as all CSXT property and facilities. This includes all aerial space within the property limits, and any underground facilities.
13. Submission Review Period - a minimum of thirty (30) days in advance of start of work. Up to thirty (30) days will be required for the initial review response. Up to an additional thirty (30) days may be required to review any/all subsequent submissions or resubmission.
14. Theoretical Railroad Live Load Influence Zone – A 1 horizontal to 1 vertical theoretical slope line starting at bottom corner of tie.

15. TOR – Top of Rail. This is the base point for clearance measurements. It refers to the crown (top) of the steel rail; the point where train wheels bear on the steel rails.
16. Track Structure – All load bearing elements which support the train. This includes, but is not limited to, the rail, ties, appurtenances, ballast, sub-ballast, embankment, retaining walls, and bridge structures.
17. Vertical Clearance – Distance measured from TOR to the lowest obstruction within six feet (6'-0") of the track centerline, in either direction.

II. GENERAL SUBMISSION REQUIREMENTS

- A. A construction work plan is required to be submitted by the Agency or its Contractor, for review and acceptance, prior to accessing or performing any work with Potential to Foul.
- B. The Agency or its representative shall submit six (6) sets of plans, specifications, supporting calculations, and detailed means and methods procedures for the specific proposed work activity.
- C. Construction submissions shall include all information relevant to the work activity, and shall clearly and concisely explain the nature of the work, how it is being performed, and what measures are being taken to ensure that railroad property and operations are continuously maintained.
- D. All construction plans shall include a map of the work site, depicting the CSXT tracks, the CSXT right of way, proposed means of access, proposed locations for equipment and material staging (dimensioned from nearest track centerline), as well as all other relevant project information. An elevation drawing may also be necessary in order to depict clearances or other components of the work.
- E. Please note that CSXT will not provide pricing to individual contractors involved in bidding projects. Bidding contractors shall request information from the agency and not CSXT.
- F. The Contractor shall install a geotextile fabric ballast protection system to prevent construction or demolition debris and fines from fouling ballast. The geotextile ballast protection system shall be installed and maintained by the Contractor to the satisfaction of the Engineer.
- G. The Engineer shall be kept aware of the construction schedule. The Contractor shall provide timely communication to the Engineer when scheduling the work such that the Engineer may be present during the work. The Contractor's schedule shall not dictate the work plan review schedule, and flagging shall not be scheduled prior to receipt of an accepted work plan.
- H. At any time during construction activities, the Engineer may require revisions to the previously approved procedures to address weather, site conditions or other circumstances that may create a potential hazard to rail operations or CSXT facilities.

Such revisions may require immediate interruption or termination of ongoing activities until such time the issue is resolved to the Engineer's satisfaction. CSXT and its GEC shall not be responsible for any additional costs or time claims associated with such revisions.

- I. Blasting will not be permitted to demolish a structure over or within CSXT's right-of-way. When blasting off of CSXT property but with Potential to Foul, vibration monitoring, track settlement surveying, and/or other protective measures may be required as determined by the Engineer.
- J. Blasting is not permitted adjacent to CSXT right-of-way without written approval from the Chief Engineer, CSXT.
- K. Mechanical and chemical means of rock removal must be explored before blasting is considered. If written permission for the use of explosives is granted, the Agency or Contractor must submit a work plan satisfying the following requirements:
 1. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Agency or Contractor.
 2. Electronic detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.
 3. No blasting shall be done without the presence of an authorized representative of CSXT. Advance notice to the Engineer is required to arrange for the presence of an authorized CSXT representative and any flagging that CSXT may require.
 4. Agency or Contractor must have at the project site adequate equipment, labor and materials, and allow sufficient time, to clean up debris resulting from the blasting and correct any misalignment of tracks or other damage to CSXT property resulting from the blasting. Any corrective measures required must be performed as directed by the Engineer at the Agency's or Contractor's expense without any delay to trains. If Agency's or Contractor's actions result in the delay of any trains including passenger trains, the Agency or Contractor shall bear the entire cost thereof.
 5. The Agency or Contractor may not store explosives on CSXT property.
 6. At any time during blasting activities, the Engineer may require revisions to the previously approved procedures to address weather, site conditions or other circumstances that may create a potential hazard to rail operations or CSXT facilities. Such revisions may require immediate interruption or termination of ongoing activities until such time the issue is resolved to the Engineer's satisfaction. CSXT and its GEC shall not be responsible for any additional costs or time claims associated with such revisions.

III. HOISTING OPERATIONS

All proposed hoisting operations with Potential to Foul shall be submitted in accordance with

the following:

1. A plan view drawing shall depict the work site, the CSXT track(s), the proposed location(s) of the lifting equipment, as well as the proposed locations for picking, any intermediate staging, and setting the load(s). All locations shall be dimensioned from centerline of the nearest track. Crane locations shall also be dimensioned from a stationary point at the work site for field confirmation.
2. Computations showing the anticipated weight of all picks. Computations shall be made based upon the field-verified plans of the existing structure. Pick weights shall account for the weight of concrete rubble or other materials attached to the component being removed; this includes the weight of subsequent rigging devices/components. Rigging components shall be sized for the subsequent pick weight.
3. All lifting equipment, rigging devices, and other load bearing elements shall have a rated (safe lifting) capacity that is greater than or equal to 150% of the load it is carrying, as a factor of safety. Supporting calculations shall be furnished to verify the minimum capacity requirement is maintained for the duration of the hoisting operation.
4. Dynamic hoisting operations are prohibited when carrying a load with the Potential to Foul. Cranes or other lifting equipment shall remain stationary during lifting. (i.e., no moving picks).
5. For lifting equipment, the manufacturer's capacity charts, including crane, counterweight, maximum boom angle, and boom nomenclature is to be submitted.
6. A schematic rigging diagram must be provided to clearly call out each rigging component from crane hook to the material being hoisted. Copies of catalog or information sheets shall be provided to verify rigging weights and capacities.
7. For built-up rigging devices, the contractor shall submit the following:
 - i. Details of the device, calling out material types, sizes, connections and other properties.
 - ii. Load test certification documents and/or design computations bearing the seal and signature of a Professional Engineer. Load test shall be performed in the configuration of its intended use as part of the subject demolition procedure.
 - iii. Copies of the latest inspection reports of the rigging device. The device shall be inspected within one (1) calendar year of the proposed date for use.
8. A detail shall be provided showing the crane outrigger setup, including dimensions from adjacent slopes or facilities. The detail shall indicate requirements for bearing surface preparation, including material requirements and compaction efforts. As a minimum, outriggers and/or tracks shall bear on mats, positioned on level material with adequate bearing capacity.

9. A complete written narrative that describes the sequence of events, indicating the order of lifts and any repositioning or re-hitching of the crane(s).

IV. DEMOLITION PROCEDURE

- A. The Agency or its Contractor shall submit a detailed procedure for a controlled demolition of any structure on, over, or adjacent to the ROW. The controlled demolition procedure must be approved by the Engineer prior to beginning work on the project.
- B. Existing Condition of structure being demolished:
 1. The Contractor shall submit as-built plans for the structure(s) being demolished.
 2. If as-built plans are unavailable, the Contractor shall perform an investigation of the structure, including any foundations, substructures, etc. The field measurements are to be made under the supervision of the Professional Engineer submitting the demolition procedure. Findings shall be submitted as part of the demolition means and methods submittal for review by the Engineer.
 3. Any proposed method for temporary stabilization of the structure during the demolition shall be based on the existing plans or investigative findings, and submitted as part of the demolition means and methods for review by the Engineer.
- C. Demolition work plans shall include a schematic plan depicting the proposed locations of the following, at various stages of the demolition:
 1. All cranes and equipment, calling out the operating radii.
 2. All proposed access and staging locations with all dimensions referenced from the center line of the nearest track.
 3. Proposed locations for stockpiling material or locations for truck loading.
 4. The location, with relevant dimensions, of all tracks, other railroad facilities; wires, poles, adjacent structures, or buried utilities that could be affected, showing that the proposed lifts are clear of these obstructions.
 5. Note that no crane or equipment may be set on the CSXT rails or track structure and no material may be dropped on CSXT property.
- D. Demolition submittal shall also include the following information:
 1. All hoisting details, as dictated by Section III of this document.
 2. A time schedule for each of the various stages must be shown as well as a schedule for the entire lifting procedure. The proposed time frames for all critical subtasks (i.e., torch/saw cutting various portions of the superstructure or substructure, dismantling splices, installing temporary bracing, etc.) shall be furnished so that the potential

- impact(s) to CSXT operations may be assessed and eliminated or minimized.
3. The names and experience of the key Contractor personnel involved in the operation shall be included in the Contractor's means and methods submission.
 4. Design and supporting calculations shall be prepared, signed, and sealed by the Professional Engineer for items including the temporary support of components or intermediate stages shall be submitted for review. A guardrail will be required to be installed in a track in the proximity of temporary bents or shoring towers, when located within twelve feet (12'-0") from the centerline of the track. The guardrail will be installed by CSXT forces, at the expense of the Agency or its contractor.
- E. Girders or girder systems shall be stable at all times during demolition. Temporary bracing shall be provided at the piers, abutments, or other locations to resist overturning and/or buckling of the member(s). The agency shall submit a design and details of the proposed temporary bracing system, for review by the Engineer. Lateral wind forces for the temporary conditions shall be considered in accordance with AREMA, Chapter 8, Section 28.6.2. The minimum lateral wind pressure shall be fifteen pounds per square foot (15 psf).
- F. Existing, obsolete, bridge piers shall be removed to a minimum of three feet (3'-0") below the finished grade, final ditch line invert, or as directed by the Engineer.
- G. A minimum quantity of twenty five (25) tons of CSXT approved granite track ballast may be required to be furnished and stockpiled on site by the Contractor, or as directed by the Engineer.
- H. The use of acetylene gas is prohibited for use on or over CSXT property. Torch cutting shall be performed utilizing other materials such as propane.
- I. CSXT's tracks, signals, structures, and other facilities shall be protected from damage during demolition of existing structure or replacement of deck slab.
- J. Demolition Debris Shield
1. On-track or ground-level debris shields (such as crane mats) are prohibited for use by CSXT.
 2. Demolition Debris Shield shall be installed prior to the demolition of the bridge deck or other relevant portions of the structure. The demolition debris shield shall be erected from the underside of the bridge over the track area to catch all falling debris. The debris shield shall not be the primary means of debris containment.
 - i. The demolition debris shield design and supporting calculations, all signed/sealed by a Professional Engineer, shall be submitted for review and acceptance.
 - ii. The demolition debris shield shall have a minimum design load of 50 pounds per square foot (50 psf) plus the weight of the equipment, debris, personnel, and all

other loads.

- iii. The Contractor shall verify the maximum particle size and quantity of the demolition debris generated during the procedure does not exceed the shield design loads. Shield design shall account for loads induced by particle impact; however the demolition procedure shall be such that impact forces are minimized. The debris shield shall not be the primary means of debris containment.
- iv. The Contractor shall include installation/removal means and methods for the demolition debris shield as part of the proposed Controlled Demolition procedure submission.
- v. The demolition debris shield shall provide twenty three feet (23'-0") minimum vertical clearance, or maintain the existing vertical clearance if the existing clearance is less than twenty three feet (23'-0").
- vi. Horizontal clearance to the centerline of the track should not be reduced unless approved by the Engineer.
- vii. The Contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Engineer.

K. Vertical Demolition Debris Shield

1. This type of shield may be required for substructure removals in close proximity to CSXT track and other facilities, as determined by the Engineer.
2. The Agency or its Contractor shall submit detailed plans with detailed calculations, prepared, signed, and sealed by a Professional Engineer, of the protection shield.

V. ERECTION PROCEDURE

- A. The Agency or its Contractor shall submit a detailed procedure for erection of a structure with Potential to Foul. The erection procedure must be approved by the Engineer prior to beginning work on the project.
- B. Erection work plans shall include a schematic plan depicting the following, at all stages of the construction:
 1. All proposed locations of all cranes and equipment, calling out the operating radii.
 2. All proposed access and staging locations with all dimensions referenced from the center line of the nearest track.
 3. All proposed locations for stockpiling material or locations for truck loading.
 4. The location, with relevant dimensions, of all tracks, other railroad facilities; wires,

- poles, adjacent structures, or buried utilities that could be affected, showing that the proposed lifts are clear of these obstructions.
- C. No crane or equipment may be set on the CSXT rails or track structure and no material may be dropped on CSXT property.
- D. For erection of a structure over the tracks, the following information shall be submitted for review and acceptance by the Engineer, at least thirty (30) days prior to erection:
1. As-built beam seat elevations – field surveyed upon completion of pier/abutment construction.
 2. Current Top of Rail (TOR) elevations – field measured at the time of as-built elevation collection.
 3. Computations verifying the anticipated minimum vertical clearance in the final condition which accounts for all deflection and camber, based upon the current TOR and as-built beam seat elevations. The anticipated minimum vertical clearance shall be greater than or equal to that which is indicated by the approved plans. Vertical clearance (see definitions) is measured from TOR to the lowest point on the overhead structure at any point within six feet (6'-0") from centerline of the track. Calculations shall be signed and sealed by a Professional Engineer.
- E. Girders or girder systems shall be stable at all times during erection. No crane may unhook prior to stabilizing the beam or girder.
1. Lateral wind forces for the temporary conditions shall be considered in accordance with AREMA, Chapter 8, Section 28.6.2. The minimum lateral wind pressure shall be fifteen pounds per square foot (15 psf).
 2. Temporary bracing shall be provided at the piers, abutments, or other locations to resist overturning and/or buckling of the member(s). The agency shall submit a design and details of the proposed temporary bracing system, for review by the Engineer.
 3. Temporary bracing shall not be removed until sufficient lateral bracing or diaphragm members have been installed to establish a stable condition. Supporting calculations, furnished by the Professional Engineer, shall confirm the stable condition.
- F. Erection procedure submissions shall also include the following information:
1. All hoisting details, as dictated by Section III of this document.
 2. A time schedule for each of the various stages must be shown as well as a schedule for the entire lifting procedure. The proposed time frames for all critical subtasks (i.e., performing aerial splices, installing temporary bracing, installation of diaphragm members, etc.) shall be furnished so that the potential impact(s) to CSXT operations may be assessed and eliminated or minimized.

3. The names and experience of the key Contractor personnel involved in the operation shall be included in the Contractor's means and methods submission.
4. A guardrail will be required to be installed in a track in the proximity of temporary bents or shoring towers, when located within twelve feet (12'-0") from the centerline of the track. The guardrail will be installed by CSXT forces, at the expense of the Agency or its Contractor.
5. Design and supporting calculations prepared by the Professional Engineer for items including the temporary support of components or intermediate stages shall be submitted for review.

VI. TEMPORARY EXCAVATION AND SHORING

- A. The Agency or its Contractor shall submit a detailed design and procedure for the installation of a sheeting/shoring system adjacent to the tracks. Shoring protection shall be provided when excavating with Potential to Foul, or as otherwise determined by CSXT. Shoring shall be provided in accordance with the AREMA, except as noted below.
- B. Shoring may not be required if all of the following conditions are satisfied:
 1. The excavation does not encroach within the Theoretical Live Load Influence Zone. Please refer to Figure 1.
 2. The track structure is situated on level ground, or in a cut section, and on stable soil.
 3. The excavation does not adversely impact the stability of a CSXT facility (i.e., signal bungalow, drainage facility, undergrade bridge, building, etc), or the stability of any structure on, over, or adjacent to CSXT property with potential to foul.
 4. Shoring is not required by any governing federal, state, local or other construction code.
- C. Shoring is required when excavating the toe of an embankment. Excavation of any embankment which supports an active CSXT track structure without shoring will not be permitted.
- D. Trench boxes are not an acceptable means of shoring. Trench boxes are prohibited for use on CSXT property or within the Theoretical Railroad Live Load Influence Zone.
- E. Shoring shall be a cofferdam-type, which completely encloses the excavation. However, where justified by site or work conditions, partial cofferdams with open sides away from the track may be permissible, as determined by the Engineer.
- F. Cofferdams shall be constructed using interlocking steel sheet piles, or when approved by the Engineer, steel soldier piles with timber lagging. Wales and struts shall be included when dictated by the design.

- G. The use of tiebacks can be permissible for temporary shoring systems, when conditions warrant. Tiebacks shall have a minimum clear cover of 6'-0", measured from the bottom of the rail. Upon completion of the work, tiebacks shall be grouted, cut off, and remain in place.
- H. All shoring systems on, or adjacent to CSXT right-of-way, shall be equipped with railings or other fall protection, compliant with the governing federal, state or local requirements. Area around pits shall be graded to eliminate all potential tripping hazards.
- I. Interlocking steel sheet piles shall be used for shoring systems qualifying one or more of the following conditions:
1. Within 18'-0" of the nearest track centerline
 2. Within the live load influence zone
 3. Within slopes supporting the track structure
 4. As otherwise deemed necessary by the Engineer.
- J. Sheet piles qualifying for one or more of the requirements listed in Section VI.I (above) of this document shall not be removed. Sheet piles shall be left in place and cut off a minimum of 3'-0" below the finished grade, the ditch line invert, or as otherwise directed by the Engineer. The ground shall be backfilled and compacted immediately after sheet pile is cut off.
- K. The following design considerations shall be considered when preparing the shoring design package:
1. Shoring shall be designed to resist a vertical live load surcharge of 1,880 lbs. per square foot, in addition to active earth pressure. The surcharge shall be assumed to act on a continuous strip, eight feet six inches (8'-6") wide. Lateral pressures due to surcharge shall be computed using the strip load formula shown in AREMA Manual for Railway Engineering, Chapter 8, Part 20.
 2. Allowable stresses in materials shall be in accordance with AREMA Chapter 7, 8, and 15.3.
 3. A minimum horizontal clearance of ten feet (10'-0") from centerline of the track to face of nearest point of shoring shall be maintained, provided a twelve feet (12'-0") roadbed is maintained with a temporary walkway and handrail system.
 4. For temporary shoring systems with Potential to Foul, piles shall be plumb under full dead load. Maximum deflection at the top of wall, under full live load, shall be as follows:
 - i. One-half (1/2) inch for walls within twelve feet (12'-0") of track centerline (Measured from centerline of the nearest track to the nearest point of the

supporting structure).

- ii. One (1) inch for walls located greater than twelve feet (12'-0") from track centerline
- L. Shoring work plans shall be submitted in accordance with Section II of this document, as well as the following additional requirements:
- 1. The work plan shall include detailed drawings of the shoring systems calling out the sizes of all structural members, details of all connections. Both plan and elevation drawings shall be provided, calling out dimensions from the face of shoring relative to the nearest track centerline. The elevation drawing shall also show the height of shoring, and track elevation in relation to bottom of excavation.
 - 2. Full design calculations for the shoring system shall be furnished.
 - 3. A procedure for cutting off the sheet pile, backfilling and restoring the embankment.

VII. TRACK MONITORING

- A. When work being performed has the potential to disrupt the track structure, a work plan must be submitted detailing a track monitoring program which will serve to monitor and detect both horizontal and vertical movement of the CSXT track and roadbed.
- B. The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. CSXT reserves to the right to modify the survey locations and monitoring frequency as necessary during the project.
- C. The survey data shall be collected in accordance with the approved frequency and immediately furnished to the Engineer for analysis.
- D. If any movement has occurred as determined by the Engineer, CSXT will be immediately notified. CSXT, at its sole discretion, shall have the right to immediately require all contractor operations to be ceased, have the excavated area immediately backfilled and/or determine what corrective action is required. Any corrective action required by CSXT or performed by CSXT including the monitoring of corrective action of the contractor will be at project expense.

CSX Transportation, Inc.

Temporary Right of Entry Agreement

THIS AGREEMENT is entered into on _____, by and between CSX Transportation, Inc., a Virginia corporation with its principal place of business in Jacksonville, Florida ("**Railroad**"), and _____, a _____ corporation ("**Company**").

WHEREAS, Company has requested permission to enter Railroad's property located in vicinity of Milepost _____ (the "**Property**"), for the purpose of _____ on behalf of the North Carolina Department of

Transportation in Raleigh, Wake County, North Carolina (the “**Work**”); and

WHEREAS, Railroad is willing to grant to Company the limited right and permission to enter upon the Property for the limited purpose of performing the Work.

NOW THEREFORE, Railroad hereby grants to Company the right and permission to enter upon the Property for the purpose of performing said Work, subject to the terms and conditions set forth below:

1. **WORK**: The Work shall be performed entirely by Company, or its subcontractors in accordance with good and sound engineering practices, to the satisfaction of the North Carolina Department of Transportation and in a manner to avoid accidents, damages, unnecessary delays to or interference with train traffic of Railroad. Any Work performed which may impact rail facilities, property or operations or which may alter rail facilities or cause a disturbance to Railroad property shall be performed to the satisfaction of the Railroad’s Project Engineer Right of Way Construction or his or her duly authorized representatives. All of the Work shall remain at least 50 feet from the centerline of tracks unless such Work and the procedure by which it is performed is pre-approved by Railroad’s Engineering representative. Company shall not dig in the ballast line. Company and Company’s crew, employees, representatives and subcontractors shall maintain in their possession a copy of this Agreement at all times during Company’s occupation of the Property.

Prior to entry or the commencement of any work within the Property or that may impact Railroad facilities or operations, Company shall submit to Railroad’s Project Engineer Right of Way Construction applicable details, plans and/or other documentation fully describing the proposed work for the purposes of Railroad verifying that said work may be accomplished without any adverse impact to Railroad, its facilities or rail operations. In the event additional protective measures are required by Railroad, such protective measures will be incorporated into the proposed work without cost to Railroad. No entry or work may be commenced without Railroad’s approval of these submissions.

2. **INDEMNITY**:

- a) Company hereby assumes risk of and agrees to indemnify, defend, protect and save Railroad and Railroad’s Affiliates harmless with respect to any and all attorneys’ fees, liability, claims, demands, payments, suits, actions, recoveries, penalties, costs, legal expenses, judgments, settlements, and damages of every nature, degree, and kind (including direct, indirect, consequential, incidental, and punitive damages) for:
 - i) personal injury, including, but not limited to bodily injury to or death of any person or persons whomsoever, including the agents, servants, Affiliates or employees of the parties;
 - ii) the loss or damage to any property whatsoever, including property owned or in the care, custody or control of the parties hereto or their respective Affiliates;
 - iii) any environmental damage and any related remediation brought or recovered against Railroad or any of its Affiliates; and
 - iv) any and all other losses or damages;

arising directly or indirectly from the activities of Company or its subcontractors, agents, servants, invitees, or employees on or about the Property.
- b) The parties waive any and all right or opportunity to contest the enforceability of this Section and agree that, in the event this Section, or any part of this Section, is found unenforceable by the final, unappealable judgment of a court of competent jurisdiction, this Section shall be construed so as to be enforceable to the maximum extent permitted by applicable law.

- c) Company shall strictly comply with any federal, state, or local laws, statutes, codes, ordinances, rules, and regulations applicable to its presence or performance of any activity on the Property and expressly agrees to indemnify, defend, and hold Railroad and Railroad Affiliates harmless with respect to any fines, penalties, liabilities, or other consequences for its failure to so comply.
 - d) For the purpose of this Agreement, the term “Affiliates” include all entities, directly or indirectly, owned or controlled by or under common control of Railroad or its respective officers, directors, employees and agents, and in the case of Railroad, includes CSX Corporation, Railroad and their Affiliates and their respective officers, directors, employees and agents.
 - e) The provisions of this Section shall survive the termination or expiration of this Agreement.
3. **GENERAL LIABILITY INSURANCE:** As a requirement in the Special Provisions of the _____ Contract with North Carolina Department of Transportation, Company shall procure and maintain, at its expense: (i) statutory Worker’s Compensation and Employers Liability Insurance with available limits of not less than \$1,000,000.00, which insurance must contain a waiver of subrogation against Railroad and its Affiliates; (ii) Commercial General Liability coverage (inclusive of contractual liability) with available limits of not less than \$5,000,000.00 in combined single limits for bodily injury and property damage and covering the contractual liabilities assumed herein; (iii) business automobile liability insurance with available limits of not less than \$1,000,000.00 combined single limit for bodily injury and/or property damage per occurrence; and (iv) such other insurance as Railroad may reasonably require. A policy endorsement naming Railroad as an additional named insured and specifying such coverage shall be furnished to Railroad prior to the execution of this Agreement, and the required coverage will be kept in force until all of Company’s obligations under this Agreement have been fully discharged and fulfilled, or until Company shall have been specifically released therefrom by a written instrument signed by an authorized officer of Railroad. Company shall also provide Railroad a copy of the insurance policies. The insurance policy shall provide that the insurance carrier must give Railroad notice at least thirty days in advance of cancellation of coverage, of any change in coverage, or of cancellation of the policy. Notwithstanding any provisions of this Section, the liability assumed by Company shall not be limited to the required insurance. The Company shall maintain the insurance policies until such time as the Company satisfactorily completes the work at the site in accordance with its contract with the North Carolina Department of Transportation.
4. **RAILROAD PROTECTIVE LIABILITY INSURANCE:** Company hereby agrees to purchase Railroad Protective Liability Insurance in accordance with Railroad’s requirements as provided in the North Carolina DOT _____ Contract Special Provisions for the benefit of Railroad for Company’s operations as covered by this Agreement. Company shall furnish a copy of the policy for Railroad’s advanced approval without which Company shall not commence the Work.
5. **PRIOR NOTIFICATION:** Company or Company’s subcontractor shall notify the Railroad’s Project Engineer Right of Way Construction, _____ at _____ and Railroad’s Roadmaster, _____ at _____ at least ten (10) days prior to proceeding with the Work on the Property and shall strictly abide by the instructions of the Project Engineer Right of Way Construction and Roadmaster, or his or her authorized representative.
6. **CLEARANCES:** Neither Company nor any subcontractor of Company shall place or operate any equipment of Company, or of its subcontractor or perform any Work at a distance closer than fifty (50) feet from the center of any track, unless prior arrangements have been made with the Railroad Roadmaster’s office for flagging protection. Equipment shall be moved across the Railroad’s track(s) only at a public crossing unless prior arrangements have been made with said Roadmaster. Company and Company’s subcontractors shall take all precautions necessary to avoid interference with or damage to Railroad’s signal and communication facilities during the course of its performance of the Work.
7. **PROTECTIVE SERVICES:** If protective or other services, such as flagging protection, are required by Railroad, Company shall make arrangements a minimum of thirty (30) days in advance with the Railroad’s Project Engineer Right of Way Construction or Roadmaster to furnish such personnel, flagman or watchman, that in Railroad’s opinion may be necessary to protect the facilities and traffic of Railroad during the performance of the Work. The North Carolina Department of Transportation shall be responsible for payment to Railroad for any of

its actual cost of such services as set forth in the reimbursement agreement or PUC Order referenced above unless otherwise agreed to by the North Carolina Department of Transportation and Railroad.

8. **ENVIRONMENTAL:** This Agreement does not include and expressly excludes the performance of any site investigation activities designed to determine environmental conditions on, about or beneath the Property. Precluded activities include performing soil borings for purposes other than geotechnical investigation, obtaining soil, sediment, groundwater and surface water samples, and conducting field or laboratory analyses of any soil, sediment, groundwater or surface water samples obtained from Railroad properties to identify chemical composition or environmental condition. *If any type of environmental investigation is desired, a separate right of entry agreement issued through Railroad's Environmental Department must be secured.*
9. **CLAIMS:** Company shall, or shall require its subcontractor to, notify said Project Engineer Right of Way Construction or his or her representative promptly of any loss, damage, injury or death arising out of or in connection with the Work to be performed.
10. **REMEDIATION:** It is understood and agreed that, upon completion of the Work, the Property shall be left in its original condition, in accordance with the Project plans or as otherwise mutually agreed upon by the Company, Railroad and North Carolina Department of Transportation.
11. **SAFETY:** All personnel entering the Property must comply with the Railroad safety rules and requirements to include, without exception, the wearing of hard hats and approved safety shoes and safety glasses with side shields. Anyone not in compliance with these rules and regulations will be asked to leave the Property.
12. **TERM:** This Right-of-Entry Agreement and the permission conferred and the license granted by it does not constitute a grant of permanent easement and shall terminate upon completion of the Work or at midnight, _____, whichever occurs first, unless extended in writing by Railroad. In the event Company fails to comply with terms and provisions of this Agreement, Company agrees to pay and agrees that Railroad shall be entitled to recover costs and expenses incurred by Railroad, including legal fees and expenses, to enforce the terms of this Agreement.
13. **SEVERABILITY:** If any provision or any part of a provision of the Agreement shall be finally determined to be superseded, invalid, illegal, or otherwise unenforceable pursuant to any applicable law, ordinance, rule or regulation, such determination shall not impair or otherwise affect the validity, legality, or enforceability of the remaining provision or parts of the provision of the Agreement, which shall remain in full force and effect as if the unenforceable provision or part were deleted.
14. **ENTIRE AGREEMENT:** This Agreement embodies the entire understanding of the parties, may not be waived or modified except in a writing signed by authorized representatives of both parties, and supersedes all prior or contemporaneous written or oral understandings, agreements or negotiations regarding its subject matter. The reimbursement agreement between the Railroad and the North Carolina Department of Transportation remains in full force and effect.
15. **VACATION OF PROPERTY:** Railroad shall have the right at any time and at its sole discretion to direct Company to vacate Railroad property for cause. For purposes of this Section, cause shall include any reason related to the safety of Railroad or Company employees or representatives or the safety and/or efficiency of Railroad operations or property. Railroad shall also notify the North Carolina Department of Transportation that it has directed Company to vacate the site.
16. **CHOICE OF LAW:** This Agreement shall be governed by the laws of the State of North Carolina, exclusive of its choice of law rules.
17. **NO ASSIGNMENT:** Notwithstanding anything to the contrary contained in this Agreement, Company shall not permit its subcontractors to enter the Property without first requiring its subcontractors to agree in writing to comply with all of the terms of this Agreement, Company shall continue to be responsible for ensuring that its subcontractors comply with all the terms and conditions of this Agreement and that Company's subcontractors shall indemnify and hold Railroad harmless for any damages described in Section 2 above caused in whole or in

part by such subcontractor. Assignment of this Agreement to any party other than a subcontractor of Company in accordance with this Section 17 shall not be permitted except upon the prior written consent of Railroad, which consent may be granted or withheld at Railroad's sole discretion. This Agreement shall be binding upon the parties and their respective successors and assigns.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the day and year first above written.

ACCEPTED:

CSX Transportation, Inc.

By: _____

By: _____

Print Name: _____

Print Name: _____

Title: _____

Title: _____

Date: _____, 20_____

Date: _____, 20_____



RAILROAD PROTECTIVE LIABILITY INSURANCE

Evidence required by CSX Transportation, Inc.

You are required to furnish Railroad Protective Insurance to protect CSX Transportation, Inc. in connection with activities to be performed on or adjacent to CSX Transportation's Right of Way. The following summarize Railroad's specifications for proper evidence of insurance:

1. The insurer must be financially stable and be A. M. Best rated A- and Class VII or better.
2. The policy must be written using the ISO/RIMA Form of Railroad Protective Insurance – Insurance Services Office (ISO) Form CG 00 35
3. Named Insured and Address:

CSX Transportation, Inc.

500 Water Street, C-907
Jacksonville, FL 32202
4. Limits of Liability: \$5,000,000 per occurrence and \$10,000,000 aggregate is required for all locations.
5. Name and address of Contractor must be shown on the Declarations page.
6. Name and address of the Project Sponsor must be shown on the Declarations page.
7. Description of operations must appear on the Declarations page and must match the project description, including project or contract identification numbers.
8. Terrorism Risk Insurance Act (TRIA) coverage must be included.
9. Policies may not contain any type of deductible
10. Authorized endorsements must include the Pollution Exclusion Amendment - CG 28 31, unless using form CG 00 35 version 96 and later.
11. Authorized endorsements may include:
 - (a) Broad Form Nuclear Exclusion - IL 00 21
 - (b) 30-day Advance Notice of Non-renewal or cancellation
 - (c) Required State Cancellation Endorsement
 - (d) Quick Reference or Index - CL/IL 240
12. Authorized endorsements may not include:
 - (a) A Pollution Exclusion Endorsement except CG 28 31
 - (b) An Endorsement that excludes TRIA coverage
 - (c) An Endorsement that limits or excludes Professional Liability coverage
 - (d) A Non-Cumulation of Liability or Pyramiding of Limits Endorsement
 - (e) A Known Injury Endorsement
 - (f) A Sole Agent Endorsement
 - (g) A Punitive or Exemplary Damages Exclusion
 - (h) A "Common Policy Conditions" Endorsement
 - (i) Any endorsement that is not named in Section 10 or 11 above that CSXT deems unacceptable
13. Such additional or different insurance as CSXT may require.

All insurance documents, including the RPL policy, must be submitted to insurancedocuments@csx.com for approval prior to the commencement of any work activities. No work may commence without obtaining insurance approval.

PROTECTION OF RAILROAD INTEREST (NS)**1. AUTHORITY OF RAILROAD ENGINEER AND SPONSOR ENGINEER:**

Norfolk Southern (NS) Railway Company, hereinafter referred to as “Railroad”, and their authorized representative shall have final authority in all matters affecting the safe maintenance of railroad traffic including the adequacy of the foundations and structures supporting the railroad tracks. For Public Projects impacting the Railroad, the Railroad’s Public Projects Engineer, hereinafter referred to as “Railroad Engineer”, will serve as the authorized representative of the Railroad.

The authorized representative of the Project Sponsor (“Sponsor”), hereinafter referred to as the “Sponsor’s Engineer”, shall have authority over all other matters as prescribed herein and in the Project Specifications.

The Sponsor’s Prime Contractor, hereinafter referred to as “Contractor” shall be responsible for completing any and all work in accordance with the terms prescribed herein and in the Project Specifications. These terms and conditions are subject to change without notice, from time to time in the sole discretion of the Railroad. Contractor must request from Railroad and follow the latest version of these provisions prior to commencing work.

2. NOTICE OF STARTING WORK:

A. The Contractor shall not commence any work on railroad rights-of-way until he has complied with the following conditions:

1. Signed and received a fully executed copy of the required Norfolk Southern Contractor Right of Entry Agreement.
2. Given the Railroad written notice in electronic format to the Railroad Engineer, with copy to the Sponsor’s Engineer who has been designated to be in charge of the work, at least ten days in advance of the date he proposes to begin work on Railroad rights-of- way.
3. Obtained written approval from the Railroad of Railroad Protective Liability Insurance coverage as required by paragraph 14 herein. It should be noted that the Railroad does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system- wide, it typically takes a minimum of 30-45 days for the Railroad to review.
4. Obtained Railroad’s Flagging Services as required by paragraph 7 herein.
5. Obtained written authorization from the Railroad to begin work on Railroad’s rights-of-way, such authorization to include an outline of specific conditions

with which he must comply.

6. Furnished a schedule for all work within the Railroad's rights-of-way as required by paragraph 7.B.1.

B. The Railroad's written authorization to proceed with the work shall include the names, addresses, and telephone numbers of the Railroad's representatives who are to be notified as hereinafter required. Where more than one representative is designated, the area of responsibility of each representative shall be specified.

3. INTERFERENCE WITH RAILROAD OPERATIONS:

A. The Contractor shall so arrange and conduct his work that there will be no interference with Railroad's operations, including train, signal, telephone and telegraphic services, or damage to the property of the Railroad or to poles, wires, and other facilities of tenants on the rights-of-way of the Railroad. Whenever work is liable to affect the operations or safety of trains, the method of doing such work shall first be submitted to the Railroad Engineer for approval, but such approval shall not relieve the Contractor from liability. Any work to be performed by the Contractor which requires flagging service or inspection service shall be deferred by the Contractor until the flagging service or inspection service required by the Railroad is available at the job site.

B. Whenever work within Railroad's rights-of-way is of such a nature that impediment to Railroad's operations such as use of runaround tracks or necessity for reduced speed is unavoidable, the Contractor shall schedule and conduct his operations so that such impediment is reduced to the absolute minimum.

C. Should conditions arising from, or in connection with the work, require that immediate and unusual provisions be made to protect operations and property of the Railroad, the Contractor shall make such provisions. If in the judgment of the Railroad Engineer, or in his absence, the Railroad's Division Engineer, such provisions is insufficient, either may require or provide such provisions as he deems necessary. In any event, such unusual provisions shall be at the Contractor's expense and without cost to the Railroad or the Sponsor.

D. "One Call" Services do not locate buried Railroad utilities. The contractor shall contact the Railroad's representative 2 days in advance of work at those places where excavation, pile driving, or heavy loads may damage the Railroad's underground facilities. Upon request from the Contractor or Sponsor, Railroad forces will locate and paint mark or flag the Railroad's underground facilities. The Contractor shall avoid excavation or other disturbances of these facilities. If disturbance or excavation is required near a buried Railroad facility, the contractor shall coordinate with the Railroad to have the facility potholed manually with careful hand excavation. The facility shall be protected by the Contractor during the course of the disturbance under the supervision and direction of the Railroad's representative.

4. TRACK CLEARANCES:

A. The minimum track clearances to be maintained by the Contractor during construction are shown on the Project Plans. If temporary clearances are not shown on the project plans, the following criteria shall govern the use of falsework and formwork above or adjacent to operated tracks.

1. A minimum vertical clearance of 22'-0" above top of highest rail shall be maintained at all times.
2. A minimum horizontal clearance of 13'-0" from centerline of tangent track or 14'-0" from centerline of curved track shall be maintained at all times. Additional horizontal clearance may be required in special cases to be safe for operating conditions. This additional clearance will be as determined by the Railroad Engineer.
3. All proposed temporary clearances which are less than those listed above must be submitted to Railroad Engineer for approval prior to construction and must also be authorized by the regulatory body of the State if less than the legally prescribed clearances.
4. The temporary clearance requirements noted above shall also apply to all other physical obstructions including, but not limited to: stockpiled materials, parked equipment, placement or driving of piles, and bracing or other construction supports.

B. Before undertaking any work within Railroad right-of-way, and before placing any obstruction over any track, the Contractor shall:

1. Notify the Railroad's representative at least 72 hours in advance of the work.
2. Receive assurance from the Railroad's representative that arrangements have been made for flagging service as may be necessary.
3. Receive permission from the Railroad's representative to proceed with the work.
4. Ascertain that the Sponsor's Engineer has received copies of notice to the Railroad and of the Railroad's response thereto.

5. CONSTRUCTION PROCEDURES:

A. General:

1. Construction work and operations by the Contractor on Railroad property shall be:
 - a. Subject to the inspection and approval of the Railroad Engineer or their designated Construction Engineering Representative.

- b. In accordance with the Railroad's written outline of specific conditions.
- c. In accordance with the Railroad's general rules, regulations and requirements including those relating to safety, fall protection and personal protective equipment.
- d. In accordance with these Special Provisions.

2. Submittal Requirements

- a. The Contractor shall submit all construction related correspondence and submittals electronically to the Railroad Engineer.
- b. The Contractor shall allow for 30 days for the Railroad's review and response.
- c. All work in the vicinity of the Railroad's property that has the potential to affect the Railroad's train operations or disturb the Railroad's Property must be submitted and approved by the Railroad prior to work being performed.
- d. All submittals and calculations must be signed and sealed by a registered engineer licensed in the state of the project work.
- e. All submittals shall first be approved by the Sponsor's Engineer and the Railroad Engineer, but such approval shall not relieve the Contractor from liability.
- f. For all construction projects, the following submittals, but not limited to those listed below, shall be provided for review and approval when applicable:
 - (1) General Means and Methods
 - (2) Ballast Protection
 - (3) Construction Excavation & Shoring
 - (4) Pipe, Culvert, & Tunnel Installations
 - (5) Demolition Procedure
 - (6) Erection & Hoisting Procedure
 - (7) Debris Shielding or Containment
 - (8) Blasting
 - (9) Formwork for the bridge deck, diaphragms, overhang brackets, and protective platforms
 - (10) Bent Cap Falsework. A lift plan will be required if the contractor want to move the falsework over the tracks.
- g. For Undergrade Bridges (Bridges carrying the Railroad) the following submittals in addition to those listed above shall be provided for review and approval:
 - (1) Shop Drawings

- (2) Bearing Shop Drawings and Material Certifications
- (3) Concrete Mix Design
- (4) Structural Steel, Rebar, and/or Strand Certifications
- (5) 28 day Cylinder Test for Concrete Strength
- (6) Waterproofing Material Certification
- (7) Test Reports for Fracture Critical Members
- (8) Foundation Construction Reports

Fabrication may not begin until the Railroad has approved the required shop drawings.

- h. The Contractor shall include in all submissions a detailed narrative indicating the progression of work with the anticipated timeframe to complete each task. Work will not be permitted to commence until the Contractor has provided the Railroad with a satisfactory plan that the project will be undertaken without scheduling, performance or safety related issues. Submission shall also provide a listing of the anticipated equipment to be used, the location of all equipment to be used and insure a contingency plan of action is in place should a primary piece of equipment malfunction.

B. Ballast Protection

1. The Contractor shall submit the proposed ballast protection system detailing the specific filter fabric and anchorage system to be used during all construction activities.
2. The ballast protection is to extend 25' beyond the proposed limit of work, be installed at the start of the project and be continuously maintained to prevent all contaminants from entering the ballast section of all tracks for the entire duration of the project.

C. Excavation:

1. The subgrade of an operated track shall be maintained with edge of berm at least 10'-0" from centerline of track and not more than 24-inches below top of rail. Contractor will not be required to make existing section meet this specification if substandard, in which case existing section will be maintained.
2. Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Railroad right-of-way.

D. Excavation for Structures and Shoring Protection:

1. The Contractor will be required to take special precaution and care in connection with excavating and shoring pits, and in driving piles or sheeting for footings adjacent to tracks to provide adequate lateral support for the tracks and

the loads which they carry, without disturbance of track alignment and surface, and to avoid obstructing track clearances with working equipment, tools or other material.

2. All plans and calculations for shoring shall be prepared, signed, and sealed by a Registered Professional Engineer licensed in the state of the proposed project, in accordance with Norfolk Southern's Overhead Grade Separation Design Criteria, subsection H.1.6.E-Construction Excavation (Refer to Norfolk Southern Public Projects Manual Appendix H). The Registered Professional Engineer will be responsible for the accuracy for all controlling dimensions as well as the selection of soil design values which will accurately reflect the actual field conditions.
3. The Contractor shall provide a detailed installation and removal plan of the shoring components. Any component that will be installed via the use of a crane or any other lifting device shall be subject to the guidelines outlined in section 5.G of these provisions.
4. The Contractor shall be required to survey the track(s) and Railroad embankment and provide a cross section of the proposed excavation in relation to the tracks.
5. Calculations for the proposed shoring should include deflection calculations. The maximum deflection for excavations within 18'-0" of the centerline of the nearest track shall be 3/8". For all other cases, the max deflection shall not exceed 1/2".
6. Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Railroad right-of-way.
7. The front face of shoring located to the closest NS track for all shoring set-ups located in Zone 2 as shown on NS Typical Drawing No. 4 – Shoring Requirements (Appendix I) shall remain in place and be cut off 2'-0" below the final ground elevation. The remaining shoring in Zone 2 and all shoring in Zone 1 may be removed and all voids must be backfilled with flowable fill.

E. Pipe, Culvert, & Tunnel Installations

1. Pipe, Culvert, & Tunnel Installations shall be in accordance with the appropriate Norfolk Southern Design Specification as noted below:
 - a. For Open Cut Method refer to Norfolk Southern Public Projects Manual Appendix H.4.6.
 - b. For Jack and Bore Method refer to Norfolk Southern Public Projects Manual Appendix H.4.7.
 - c. For Tunneling Method refer to Norfolk Southern Public Projects Manual Appendix H.4.8.

2. The installation methods provided are for pipes carrying storm water or open flow run-off. All other closed pipeline systems shall be installed in accordance Norfolk Southern's Pipe and Wire Program and the NSCE-8

F. Demolition Procedures

1. General

- a. Demolition plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) Railroad right-of-way; and in all situations where cranes will be situated on, over, or adjacent to Railroad right-of-way and within a distance of the boom length plus 15'-0" from the centerline of track.
- b. Railroad tracks and other Railroad property must be protected from damage during the procedure.
- c. A pre-demolition meeting shall be conducted with the Sponsor, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the demolition procedure.
- d. The Railroad Engineer or his designated representative must be present at the site during the entire demolition procedure period.
- e. Existing, obsolete, bridge piers shall be removed to a sufficient depth below grade to enable restoration of the existing/proposed track ditch, but in no case less than 2'-0" below final grade.

2. Submittal Requirements

- a. In addition to the submittal requirements outlined in Section 5.A.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer:
 - (1) A plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or disposal locations shown. The location of all tracks and other Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.
 - (2) Rating sheets showing cranes or lifting devices to be adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been "built-in" to the crane charts are not to be considered when determining the 150% factor of safety.

- (3) Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the existing structure showing complete and sufficient details with supporting data for the demolition the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations.
- (4) The Contractor shall provide a sketch of all rigging components from the crane's hook block to the beam. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been "built-in" to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Sponsor and the Railroad.
- (5) A complete demolition procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.
- (6) Design and supporting calculations for the temporary support of components, including but not limited to the stability of the superstructure during the temporary condition, temporary girder tie-downs and falsework.

3. Overhead Demolition Debris Shield

- a. The demolition debris shield shall be installed prior to the demolition of the bridge deck or other relevant portions of the superstructure over the track area to catch all falling debris.
- b. The demolition debris shield shall provide a minimum vertical clearance as specified in Section 4.A.1 of these provisions or maintain the existing vertical clearance if the existing clearance is less than that specified in Section 4.A.1.
- c. The Contractor shall include the demolition debris shield installation/removal means and methods as part of the proposed Demolition procedure submission.
- d. The Contractor shall submit the demolition debris shield design and supporting calculations for approval by the Railroad Engineer.
- e. The demolition debris shield shall have a minimum design load of 50 pounds per square foot plus the weight of the equipment, debris, personnel, and other

loads to be carried.

- f. The Contractor shall include the proposed bridge deck removal procedure in its demolition means and methods and shall verify that the size and quantity of the demolition debris generated by the procedure does not exceed the shield design loads.
- g. The Contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Railroad Engineer.

4. Vertical Demolition Debris Shield

- a. A vertical demolition debris shield may be required for substructure removals in close proximity to the Railroad's track and other facilities, as determined by the Railroad Engineer.

G. Erection & Hoisting Procedures

1. General

- a. Erection plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) Railroad right-of-way; and in all situations where cranes will be situated on, over, or adjacent to Railroad right-of-way and within a distance of the boom length plus 15'-0" from the centerline of track.
- b. Railroad tracks and other Railroad property must be protected from damage during the erection procedure.
- c. A pre-erection meeting shall be conducted with the Sponsor, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the erection procedure.
- d. The Railroad Engineer or his designated representative must be present at the site during the entire erection procedure period.
- e. For field splices located over Railroad property, a minimum of 50% of the holes for each connection shall be filled with bolts or pins prior to releasing the crane. A minimum of 50% of the holes filled shall be filled with bolts. All bolts must be appropriately tightened. Any changes to previously approved field splice locations must be submitted to the Railroad for review and approval. Refer to Norfolk Southern's Overhead Grade Separation Design Criteria for additional splice details (Norfolk Southern Public Projects Manual Appendix H.1, Section 4.A.3.).

2. Submittal Requirements

- a. In addition the submittal requirements outlined in Section 5.A.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer:
 - (1) As-built beam seat elevations - All as-built bridge seats and top of rail elevations shall be furnished to the Railroad Engineer for review and verification at least 30 days in advance of the erection, to ensure that minimum vertical clearances as approved in the plans will be achieved.
 - (2) A plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or staging locations shown. The location of all tracks and other Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.
 - (3) Rating sheets showing cranes or lifting devices to be adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been “built-in” to the crane charts are not to be considered when determining the 150% factor of safety.
 - (4) Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the proposed structure showing complete and sufficient details with supporting data for the erection of the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations.
 - (5) The Contractor shall provide a sketch of all rigging components from the crane’s hook block to the beam. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been “built-in” to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Sponsor and the Railroad.
 - (6) A complete erection procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.
 - (7) Design and supporting calculations for the temporary support of components, including but not limited to temporary girder tie-downs and falsework.

H. Blasting:

1. The Contractor shall obtain advance approval of the Railroad Engineer and the Sponsor Engineer for use of explosives on or adjacent to Railroad property. The request for permission to use explosives shall include a detailed blasting plan. If permission for use of explosives is granted, the Contractor will be required to comply with the following:
 - a. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Contractor and a licensed blaster.
 - b. Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way radios.
 - c. No blasting shall be done without the presence of the Railroad Engineer or his authorized representative. At least 72 hours advance notice to the person designated in the Railroad's notice of authorization to proceed (see paragraph 2.B) will be required to arrange for the presence of an authorized Railroad representative and such flagging as the Railroad may require.
 - d. Have at the job site adequate equipment, labor and materials and allow sufficient time to clean up debris resulting from the blasting without delay to trains, as well as correcting at his expense any track misalignment or other damage to Railroad property resulting from the blasting as directed by the Railway's authorized representative. If his actions result in delay of trains, the Contractor shall bear the entire cost thereof.
 - e. The blasting Contractor shall have a copy of the approved blasting plan on hand while on the site.
 - f. Explosive materials or loaded holes shall not be left unattended at the blast site.
 - g. A seismograph shall be placed on the track shoulder adjacent to each blast which will govern the peak particle velocity of two inches per second. Measurement shall also be taken on the ground adjacent to structures as designated by a qualified and independent blasting consultant. The Railroad reserves the option to direct the placement of additional seismographs at structures or other locations of concern, without regard to scaled distance.
 - h. After each blast, the blasting Contractor shall provide a copy of their drill log and blast report, which includes number of holes, depth of holes, number of decks, type and pounds of explosives used per deck.
 - i. The Railroad may require top of rail elevations and track centers taken before, during and after the blasting and excavation operation to check for any track misalignment resulting from the Contractor's activities.

2. The Railroad representative will:
 - a. Determine approximate location of trains and advise the Contractor the appropriate amount of time available for the blasting operation and clean up.
 - b. Have the authority to order discontinuance of blasting if, in his opinion, blasting is too hazardous or is not in accord with these special provisions.
3. The Contractor must hire, at no expense to the Railroad, a qualified and independent blasting consultant to oversee the use of explosives. The blasting consultant will:
 - a. Review the Contractor's proposed drilling and loading patterns, and with the blasting consultant's personnel and instruments, monitor the blasting operations.
 - b. Confirm that the minimum amounts of explosives are used to remove the rock.
 - c. Be empowered to intercede if he concludes that the Contractor's blasting operations are endangering the Railway.
 - d. Submit a letter acknowledging that he has been engaged to oversee the entire blasting operation and that he approves of the blasting plan.
 - e. Furnish copies of all vibration readings to the Railroad representative immediately after each blast. The representative will sign and date the seismograph tapes after each shot to verify the readings are for that specific shot.
 - f. Advise the Railroad representative as to the safety of the operation and notify him of any modifications to the blasting operation as the work progresses.
4. The request for permission to use explosives on the Railroad's Right-of-Way shall include a blasting proposal providing the following details:
 - a. A drawing which shows the proposed blasting area, location of nearest hole and distance to Railway structures, all with reference to the centerline of track.
 - b. Hole diameter.
 - c. Hole spacing and pattern.
 - d. Maximum depth of hole.
 - e. Maximum number of decks per hole.
 - f. Maximum pounds of explosives per hole.

- g. Maximum pounds of explosives per delay.
- h. Maximum number of holes per detonation.
- i. Type of detonator and explosives to be used. (Electronic detonating devices will not be permitted). Diameter of explosives if different from hole diameter.
- j. Approximate dates and time of day when the explosives are to be detonated.
- k. Type of flyrock protection.
- l. Type and patterns of audible warning and all clear signals to be used before and after each blast.
- m. A copy of the blasting license and qualifications of the person directly in charge of the blasting operation, including their name, address and telephone number.
- n. A copy of the Authority's permit granting permission to blast on the site.
- o. A letter from the blasting consultant acknowledging that he has been engaged to oversee the entire blasting operation and that he approves of the blasting plan.
- p. In addition to the insurance requirements outlined in Paragraph 14 of these Provisions, A certificate of insurance from the Contractor's insurer stating the amount of coverage for XCU (Explosive Collapse and Underground Hazard) insurance and that XCU Insurance is in force for this project.
- q. A copy of the borings and Geotechnical information or report.

I. Track Monitoring

- 1. At the direction of the Railroad Engineer, any activity that has the potential to disturb the Railroad track structure may require the Contractor to submit a detailed track monitoring program for approval by the Railroad Engineer.
- 2. The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. Railroad reserves the right to modify the survey locations and monitoring frequency as necessary during the project.
- 3. The survey data shall be collected in accordance with the approved frequency and immediately furnished to the Railroad Engineer for analysis.
- 4. If any movement has occurred as determined by the Railroad Engineer, the Railroad will be immediately notified. Railroad, at its sole discretion, shall have the right to immediately require all Contractor operations to be ceased and

determine what corrective action is required. Any corrective action required by the Railroad or performed by the Railroad including the monitoring of corrective action of the Contractor will be at project expense.

J. Maintenance of Railroad Facilities:

1. The Contractor will be required to maintain all ditches and drainage structures free of silt or other obstructions which may result from his operations and provide and maintain any erosion control measures as required. The Contractor will promptly repair eroded areas within Railroad rights-of-way and repair any other damage to the property of the Railroad or its tenants.
2. If, in the course of construction, it may be necessary to block a ditch, pipe or other drainage facility, temporary pipes, ditches or other drainage facilities shall be installed to maintain adequate drainage, as approved by the Railroad Engineer. Upon completion of the work, the temporary facilities shall be removed and the permanent facilities restored.
3. All such maintenance and repair of damages due to the Contractor's operations shall be done at the Contractor's expense.

K. Storage of Materials and Equipment:

1. Materials and equipment shall not be stored where they will interfere with Railroad operations, nor on the rights-of-way of the Railroad without first having obtained permission from the Railroad Engineer, and such permission will be with the understanding that the Railroad will not be liable for damage to such material and equipment from any cause and that the Railroad Engineer may move or require the Contractor to move, at the Contractor's expense, such material and equipment.
2. All grading or construction machinery that is left parked near the track unattended by a watchman shall be effectively immobilized so that it cannot be moved by unauthorized persons. The Contractor shall protect, defend, indemnify and save Railroad, and any associated, controlled or affiliated corporation, harmless from and against all losses, costs, expenses, claim or liability for loss or damage to property or the loss of life or personal injury, arising out of or incident to the Contractor's failure to immobilize grading or construction machinery.

L. Cleanup:

1. Upon completion of the work, the Contractor shall remove from within the limits of the Railroad rights-of-way, all machinery, equipment, surplus materials, falsework, rubbish or temporary buildings of the Contractor, and leave said rights-of-way in a neat condition satisfactory to the Railroad Engineer or his authorized representative.

6. DAMAGES:

- A. The Contractor shall assume all liability for any and all damages to his work, employees, servants, equipment and materials caused by Railroad traffic.
- B. Any cost incurred by the Railroad for repairing damages to its property or to property of its tenants, caused by or resulting from the operations of the Contractor, shall be paid directly to the Railroad by the Contractor.

7. FLAGGING SERVICES:

A. Requirements:

1. Flagging services will not be provided until the Contractor's insurance has been reviewed & approved by the Railroad.
2. Under the terms of the agreement between the Sponsor and the Railroad, the Railroad has sole authority to determine the need for flagging required to protect its operations. In general, the requirements of such services will be whenever the Contractor's personnel or equipment are or are likely to be, working on the Railroad's right-of-way, or across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a Railroad structure or the Railroad roadbed or surface and alignment of any track to such extent that the movement of trains must be controlled by flagging.
3. Normally, the Railroad will assign one flagman to a project; but in some cases, more than one may be necessary, such as yard limits where three (3) flagmen may be required. However, if the Contractor works within distances that violate instructions given by the Railroad's authorized representative or performs work that has not been scheduled with the Railroad's authorized representative, a flagman or flagmen may be required full time until the project has been completed.
4. For Projects exceeding 30 days of construction, Contractor shall provide the flagmen a small work area with a desk/counter and chair within the field/site trailer, including the use of bathroom facilities, where the flagman can check in/out with the Project, as well as to the flagman's home terminal. The work area should provide access to two (2) electrical outlets for recharging radio(s), and a laptop computer; and have the ability to print off needed documentation and orders as needed at the field/site trailer. This should aid in maximizing the flagman's time and efficiency on the Project.

B. Scheduling and Notification:

1. The Contractor's work requiring Railroad flagging should be scheduled to limit the presence of a flagman at the site to a maximum of 50 hours per week. The Contractor shall receive Railroad approval of work schedules requiring a flagman's presence in excess of 40 hours per week.

2. Not later than the time that approval is initially requested to begin work on Railroad right-of-way, Contractor shall furnish to the Railroad and the Sponsor a schedule for all work required to complete the portion of the project within Railroad right-of-way and arrange for a job site meeting between the Contractor, the Sponsor, and the Railroad's authorized representative. Flagman or Flagmen may not be provided until the job site meeting has been conducted and the Contractor's work scheduled.
3. The Contractor will be required to give the Railroad representative at least 10 working days of advance written notice of intent to begin work within Railroad right-of-way in accordance with this special provision. Once begun, when such work is then suspended at any time, or for any reason, the Contractor will be required to give the Railroad representative at least 3 working days of advance notice before resuming work on Railroad right-of-way. Such notices shall include sufficient details of the proposed work to enable the Railroad representative to determine if flagging will be required. If such notice is in writing, the Contractor shall furnish the Engineer a copy; if notice is given verbally, it shall be confirmed in writing with copy to the Engineer. If flagging is required, no work shall be undertaken until the flagman, or flagmen are present at the job site. It may take up to 30 days to obtain flagging initially from the Railroad. When flagging begins, the flagman is usually assigned by the Railroad to work at the project site on a continual basis until no longer needed and cannot be called for on a spot basis. If flagging becomes unnecessary and is suspended, it may take up to 30 days to again obtain from the Railroad. Due to Railroad labor agreements, it is necessary to give 5 working days notice before flagging service may be discontinued and responsibility for payment stopped.
4. If, after the flagman is assigned to the project site, an emergency arises that requires the flagman's presence elsewhere, then the Contractor shall delay work on Railroad right-of-way until such time as the flagman is again available. Any additional costs resulting from such delay shall be borne by the Contractor and not the Sponsor or Railroad.

C. Payment:

1. The Sponsor will be responsible for paying the Railroad directly for any and all costs of flagging which may be required to accomplish the construction.
2. The estimated cost of flagging is the current rate per day based on a 10-hour work day. This cost includes the base pay for the flagman, overhead, and includes a per diem charge for travel expenses, meals and lodging. The charge to the Sponsor by the Railroad will be the actual cost based on the rate of pay for the Railroad's employees who are available for flagging service at the time the service is required.
3. Work by a flagman in excess of 8 hours per day or 40 hours per week, but not more than 12 hours a day will result in overtime pay at 1 and 1/2 times the

appropriate rate. Work by a flagman in excess of 12 hours per day will result in overtime at 2 times the appropriate rate. If work is performed on a holiday, the flagging rate is 2 and 1/2 times the normal rate.

4. Railroad work involved in preparing and handling bills will also be charged to the Sponsor. Charges to the Sponsor by the Railroad shall be in accordance with applicable provisions of Subchapter B, Part 140, Subpart I and Subchapter G, Part 646, Subpart B of the Federal-Aid Policy Guide issued by the Federal Highway Administration on December 9, 1991, including all current amendments. Flagging costs are subject to change. The above estimates of flagging costs are provided for information only and are not binding in any way.

D. Verification:

1. Railroad's flagman will electronically enter flagging time via Railroad's electronic billing system. Any complaints concerning flagging must be resolved in a timely manner. If the need for flagging is questioned, please contact the Railroad Engineer. All verbal complaints will be confirmed in writing by the Contractor within 5 working days with a copy to the Sponsor's Engineer. Address all written correspondence electronically to Railroad Engineer.
2. The Railroad flagman assigned to the project will be responsible for notifying the Sponsor Engineer upon arrival at the job site on the first day (or as soon thereafter as possible) that flagging services begin and on the last day that he performs such services for each separate period that services are provided. The Sponsor's Engineer will document such notification in the project records. When requested, the Sponsor's Engineer will also sign the flagman's diary showing daily time spent and activity at the project site.

8. HAUL ACROSS RAILROAD TRACK:

- A. Where the plans show or imply that materials of any nature must be hauled across Railroad's track, unless the plans clearly show that the Sponsor has included arrangements for such haul in its agreement with the Railroad, the Contractor will be required to make all necessary arrangements with the Railroad regarding means of transporting such materials across the Railroad's track. The Contractor or Sponsor will be required to bear all costs incidental to such crossings whether services are performed by his own forces or by Railroad personnel.
- B. No crossing may be established for use of the Contractor for transporting materials or equipment across the tracks of the Railroad unless specific authority for its installation, maintenance, necessary watching and flagging thereof and removal, until a temporary private crossing agreement has been executed between the Contractor and Railroad. The approval process for an agreement normally takes 90 days.

9. WORK FOR THE BENEFIT OF THE CONTRACTOR:

- A. All temporary or permanent changes in wire lines or other facilities which are

considered necessary to the project are shown on the plans; included in the force account agreement between the Sponsor and the Railroad or will be covered by appropriate revisions to same which will be initiated and approved by the Sponsor and/or the Railroad.

- B. Should the Contractor desire any changes in addition to the above, then he shall make separate arrangements with the Railroad for same to be accomplished at the Contractor's expense.

10. COOPERATION AND DELAYS:

- A. It shall be the Contractor's responsibility to arrange a schedule with the Railroad for accomplishing stage construction involving work by the Railroad or tenants of the Railroad. In arranging his schedule he shall ascertain, from the Railroad, the lead time required for assembling crews and materials and shall make due allowance therefore.
- B. No charge or claim of the Contractor against either the Sponsor or the Railroad will be allowed for hindrance or delay on account of railroad traffic; any work done by the Railroad or other delay incident to or necessary for safe maintenance of railroad traffic or for any delays due to compliance with these special provisions.

11. TRAINMAN'S WALKWAYS:

- A. Along the outer side of each exterior track of multiple operated track, and on each side of single operated track, an unobstructed continuous space suitable for trainman's use in walking along trains, extending to a line not less than 10 feet from centerline of track, shall be maintained. Any temporary impediments to walkways and track drainage encroachments or obstructions allowed during work hours while Railroad's protective service is provided shall be removed before the close of each work day. If there is any excavation near the walkway, a handrail, with 10'-0" minimum clearance from centerline of track, shall be placed and must conform to AREMA and/or FRA standards.

12. GUIDELINES FOR PERSONNEL ON RAILROAD RIGHT-OF-WAY:

- A. The Contractor and/or the Sponsor's personnel authorized to perform work on Railroad's property as specified in Section 2 above are not required to complete Norfolk Southern Roadway Worker Protection Training; However the Contractor and the Sponsor's personnel must be familiar with Norfolk Southern's standard operating rules and guidelines, should conduct themselves accordingly, and may be removed from the property for failure to follow these guidelines.
- B. All persons shall wear hard hats. Appropriate eye and hearing protection must be used. Working in shorts is prohibited. Shirts must cover shoulders, back and abdomen. Working in tennis or jogging shoes, sandals, boots with high heels, cowboy and other slip-on type boots is prohibited. Hard-sole, lace-up footwear,

zippered boots or boots cinched up with straps which fit snugly about the ankle are adequate. Wearing of safety boots is strongly recommended. In the vicinity of at-grade crossings, it is strongly recommended that reflective vests be worn.

- C. No one is allowed within 25' of the centerline of track without specific authorization from the flagman.
- D. All persons working near track while train is passing are to lookout for dragging bands, chains and protruding or shifted cargo.
- E. No one is allowed to cross tracks without specific authorization from the flagman.
- F. All welders and cutting torches working within 25' of track must stop when train is passing.
- G. No steel tape or chain will be allowed to cross or touch rails without permission from the Railroad.

13. GUIDELINES FOR EQUIPMENT ON RAILROAD RIGHT-OF-WAY:

- A. No crane or boom equipment will be allowed to set up to work or park within boom distance plus 15' of centerline of track without specific permission from Railroad official and flagman.
- B. No crane or boom equipment will be allowed to foul track or lift a load over the track without flag protection and track time.
- C. All employees will stay with their machines when crane or boom equipment is pointed toward track.
- D. All cranes and boom equipment under load will stop work while train is passing (including pile driving).
- E. Swinging loads must be secured to prevent movement while train is passing.
- F. No loads will be suspended above a moving train.
- G. No equipment will be allowed within 25' of centerline of track without specific authorization of the flagman.
- H. Trucks, tractors or any equipment will not touch ballast line without specific permission from Railroad official and flagman. Orange construction fencing may be required as directed.
- I. No equipment or load movement within 25' or above a standing train or Railroad equipment without specific authorization of the flagman.

- J. All operating equipment within 25' of track must halt operations when a train is passing. All other operating equipment may be halted by the flagman if the flagman views the operation to be dangerous to the passing train.
- K. All equipment, loads and cables are prohibited from touching rails.
- L. While clearing and grubbing, no vegetation will be removed from Railroad embankment with heavy equipment without specific permission from the Railroad Engineer and flagman.
- M. No equipment or materials will be parked or stored on Railroad's property unless specific authorization is granted from the Railroad Engineer.
- N. All unattended equipment that is left parked on Railroad property shall be effectively immobilized so that it cannot be moved by unauthorized persons.
- O. All cranes and boom equipment will be turned away from track after each work day or whenever unattended by an operator.
- P. Prior to performing any crane operations, the Contractor shall establish a single point of contact for the Railroad flagman to remain in communication with at all times. Person must also be in direct contact with the individual(s) directing the crane operation(s).

14. INSURANCE:

- A. In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, the Prime Contractor will be required to carry insurance of the following kinds and amounts:
 - 1. a. Commercial General Liability Insurance having a combined single limit of not less than \$2,000,000 per occurrence for all loss, damage, cost and expense, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include explosion, collapse, and underground hazard (XCU) coverage, shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured, and shall include a severability of interests provision.
 - b. Automobile Liability Insurance with a combined single limit of not less than \$1,000,000 each occurrence for injury to or death of persons and damage to or loss or destruction of property. Said policy or policies shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured and shall include a severability of interests provision.
- 2. Railroad Protective Liability Insurance having a combined single limit of not less than \$2,000,000 each occurrence and \$6,000,000 in the aggregate applying separately to

each annual period. If the project involves track over which passenger trains operate, the insurance limits required are not less than a combined single limit of \$5,000,000 each occurrence and \$10,000,000 in the aggregate applying separately to each annual period. Said policy shall provide coverage for all loss, damage or expense arising from bodily injury and property damage liability, and physical damage to property attributed to acts or omissions at the job site.

The standards for the Railroad Protective Liability Insurance are as follows:

- a. The insurer must be rated A- or better by A.M. Best Company, Inc.
NOTE: NS does not accept from insurers Chartis (AIG or Affiliated Company including Lexington Insurance Company), Hudson Group or Liberty or Affiliated Company, American Contractors Insurance Company and Erie Insurance Company including Erie Insurance Exchange and Erie Indemnity Company.
- b. The policy must be written using one of the following combinations of Insurance Services Office (“ISO”) Railroad Protective Liability Insurance Form Numbers:
 - (1) CG 00 35 01 96 and CG 28 31 10 93; or
 - (2) CG 00 35 07 98 and CG 28 31 07 98; or
 - (3) CG 00 35 10 01; or
 - (4) CG 00 35 12 04; or
 - (5) CG 00 35 12 07; or
 - (6) CG 00 35 04 13.

- c. The named insured shall read:

Norfolk Southern Corporation and its
 subsidiaries Three Commercial Place
 Norfolk, Virginia 23510-2191
 Attn: Risk Manager

(NOTE: Railroad does not share coverage on RRPL with any other entity on this policy)

- d. The description of operations must appear on the Declarations, must match the project description in this agreement, and must include the appropriate Sponsor project and contract identification numbers.
- e. The job location must appear on the Declarations and must include the city, state, and appropriate highway name/number. **NOTE: Do not include any references to milepost, valuation station, or mile marker on the insurance policy.**
- f. The name and address of the prime Contractor must appear on the Declarations.

- g. The name and address of the Sponsor must be identified on the Declarations as the “Involved Governmental Authority or Other Contracting Party.”
 - h. Endorsements/forms that are **required** are:
 - (1) Physical Damage to Property Amendment
 - (2) Terrorism Risk Insurance Act (TRIA) coverage must be included
 - i. Other endorsements/forms that will be accepted are:
 - (1) Broad Form Nuclear Exclusion – Form IL 00 21
 - (2) 30-day Advance Notice of Non-renewal or cancellation
 - (3) Required State Cancellation Endorsement
 - (4) Quick Reference or Index Form CL/IL 240
 - j. Endorsements/forms that are NOT acceptable are:
 - (1) Any Pollution Exclusion Endorsement except CG 28 31
 - (2) Any Punitive or Exemplary Damages Exclusion
 - (3) Known injury or Damage Exclusion form CG 00 59
 - (4) Any Common Policy Conditions form
 - (5) An Endorsement that limits or excludes Professional Liability coverage
 - (6) A Non-Cumulation of Liability or Pyramiding of Limits Endorsement
 - (7) An Endorsement that excludes TRIA coverage
 - (8) A Sole Agent Endorsement
 - (9) Any type of deductible endorsement or amendment
 - (10) Any other endorsement/form not specifically authorized in item no. 2.h above.
- B. If any part of the work is sublet, similar insurance, and evidence thereof as specified in A.1 above, shall be provided by or on behalf of the subcontractor to cover its operations on Railroad’s right of way.
- C. All insurance required under the preceding subsection A shall be underwritten by insurers and be of such form and content, as may be acceptable to the Company. Prior to entry on Railroad right-of-way, the original Railroad Protective Liability Insurance Policy shall be submitted by the Prime Contractor to the Department at the address below for its review and transmittal to the Railroad. In addition, certificates of insurance evidencing the Prime Contractor’s and any subcontractors’ Commercial General Liability Insurance shall be issued to the Railroad and the Department at the addresses below, and forwarded to the Department for its review and transmittal to the Railroad. The certificates of insurance shall state that the insurance coverage will not be suspended, voided, canceled, or reduced in coverage or limits without (30) days advance written notice to Railroad and the Department. No work will be permitted by Railroad on its right-of-way until it has reviewed and approved the evidence of insurance required herein.

SPONSOR:RAILROAD:

Risk Management
Norfolk Southern Railway
Company Three Commercial
Place
Norfolk, Virginia 23510-2191

D. The insurance required herein shall in no way serve to limit the liability of Sponsor or its Contractors under the terms of this agreement.

E. Insurance Submission Procedures

1. Railroad will only accept initial insurance submissions via US Mail or Overnight carrier to the address noted in C above. Railroad will NOT accept initial insurance submissions via email or faxes. **Please provide point of contact information with the submission including a phone number and email address.**
2. Railroad requires the following two (2) forms of insurance in the initial insurance submission to be submitted under a cover letter providing details of the project and contact information:
 - a. The full original or certified true countersigned copy of the railroad protective liability insurance policy in its entirety inclusive of all declarations, schedule of forms and endorsements along with the policy forms and endorsements.
 - b. The Contractor's commercial general, automobile, and workers' compensation liability insurance certificate of liability insurance evidencing a combined single limit of a minimum of \$2M per occurrence of general and \$1M per occurrence of automobile liability insurance naming Norfolk Southern Railway Company, Three Commercial Place, Norfolk, VA 23510 as the certificate holder and as an additional insured on both the general and automobile liability insurance policy.
3. It should be noted that the Railroad does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.

15. FAILURE TO COMPLY:

- A. In the event the Contractor violates or fails to comply with any of the requirements of these Special Provisions:
 1. The Railroad Engineer may require that the Contractor vacate Railroad property.

2. The Sponsor’s Engineer may withhold all monies due the Contractor on monthly statements.

B. Any such orders shall remain in effect until the Contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Sponsor’s Engineer.

16. PAYMENT FOR COST OF COMPLIANCE:

A. No separate payment will be made for any extra cost incurred on account of compliance with these special provisions. All such costs shall be included in prices bid for other items of the work as specified in the payment items.

17. PROJECT INFORMATION

- A. Date: _____
- B. NS File No.: _____
- C. NS Milepost: _____
- D. Sponsor’s Project No.: _____

CERTIFICATION FOR FEDERAL-AID CONTRACTS

(3-21-90)

DB1 G85

The Proposer certifies, by signing and submitting a Design-Build Proposal, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, *Disclosure Form to Report Lobbying*, in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by *Section 1352, Title 31, U.S. Code*. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Proposer also agrees by submitting a Design-Build Proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such sub-recipients shall certify and disclose accordingly.

CONTRACTOR'S LICENSE REQUIREMENTS

(7-1-95)

DB1 G88

If the Design-Build Team does not hold the proper license to perform any plumbing, heating, air conditioning, or electrical work in this contract, he will be required to sublet such work to a contractor properly licensed in accordance with *Article 2 of Chapter 87 of the General Statutes* (licensing of heating, plumbing, and air conditioning contractors) and *Article 4 of Chapter 87 of the General Statutes* (licensing of electrical contractors).

USE OF UNMANNED AIRCRAFT SYSTEM (UAS)

(7-1-19)

DB1 G092

The Design-Build Team shall adhere to all Federal, State and Local regulations and guidelines for the use of Unmanned Aircraft Systems (UAS). This includes, but is not limited to, US 14 CFR Part 107 *Small UAS Rule*, NC GS 15A-300.2 *Regulation of launch and recovery sites*, NC GS 63-95 *Training required for the operation of unmanned aircraft systems*, NC GS 63-96 *Permit required for commercial operation of unmanned aircraft system*, and NCDOT UAS Policy. The required operator certifications include possessing a current Federal Aviation Administration (FAA) Remote Pilot Certificate, a NC UAS Operator Permit, as well as operating a UAS registered with the FAA.

Prior to beginning operations, the Design-Build Team shall complete the NCDOT UAS - Flight Operation Approval Form and submit it to the Engineer for approval. All UAS operations shall be approved by the Engineer, in writing, prior to beginning the operations.

All Design-Build team members operating UAS shall have UAS specific general liability insurance to cover all operations under this contract.

The use of UAS shall be at the Design-Build Team's discretion. Except as allowed otherwise below, no measurement or payment will be made for the use of UAS. In the event that the Department directs the Design-Build Team to utilize UAS, all costs associated with using UAS will be paid for as extra work, in accordance with Subarticle 104-8(A) of the *Standard Specifications for Roads and Structures*.

U.S. DEPARTMENT OF TRANSPORTATION HOTLINE

(11-22-94)

108-5

DB1 G100

To report bid rigging activities call: **1-800-424-9071**

The U.S. Department of Transportation (DOT) operates the above toll-free hotline Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the hotline to report such activities.

The hotline is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

CARGO PREFERENCE ACT

(2-16-16)

DB1 G100

Privately owned United States-flag commercial vessels transporting cargoes are subject to the Cargo Preference Act (CPA) of 1954 requirements and regulations found in 46 CFR 381.7. Contractors are directed to clause (b) of 46 CFR 381.7 as follows:

- (b) Contractor and Subcontractor Clauses. "Use of United States-flag vessels: The contractor agrees-

“(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the Prime Contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract."

SUBSURFACE INFORMATION

(3-22-07)

DB1 G112D

Available subsurface information will be provided on this project. The Design-Build Team shall be responsible for additional investigations and for verifying the accuracy of the subsurface information supplied by the Department.

COOPERATION BETWEEN CONTRACTORS

(9-1-11) (Rev. 9-7-17)

DB1 G133

The Design-Build Team's attention is directed to Article 105-7 of the 2018 *Standard Specifications for Roads and Structures*. For all future projects, the Contractor is responsible for monitoring NCDOT websites for current and upcoming projects that may exist within the project boundaries. A listing of current/anticipated projects is as follows:

TIP	County	Route	Location	Description
I-5931	Northampton	I-95	Halifax County Line to Virginia State Line	Pavement Rehabilitation
I-5839	Halifax - Northampton	I-95	From Mile Marker 172 to Mile Marker 182	Pavement Rehabilitation
I-5932A	Halifax	I-95	From NC 561 (Mile Marker 160) to NC 903 (Mile Marker 172)	
I-5932B	Halifax	I-95	From NC 481 (Mile Marker 154) to NC 561 (Mile Marker 160)	Interstate Maintenance
B-5980	Nash	I-95	SR 1544 (Halifax Road)	Interchange Improvements
I-5934	Nash	I-95	From SR 1770 (Sunset Avenue, Mile Marker 137.4) to SR 1544 (North Halifax Road, Mile Marker 142.1)	Pavement Rehabilitation
U-5026 / R-5720	Nash	I-95	SR 1770 (Sunset Avenue) from SR 1003 (Red Oak Road) to SR 1603 (Old Carriage Road)	Bridge Replacement / Roadway Widening
I-5933	Nash	I-95	From Wilson County Line to North of NC 97 (Mile Marker 127.6)	Pavement Rehabilitation

I-5936	Wilson	I-95	From Johnston County Line (Mile Marker 108.2) to North of SR 1116 (Governor Hunt Road, Mile Marker 114.5)	Pavement Rehabilitation
B-4937	Johnston	I-95	Replace Bridges 118 & 119 over CSX Railroad	Bridge Replacement
B-6050	Johnston	I-95	Replace Bridges 109, 110 & 112 over I-95	Bridge Replacement
I-5786	Johnston	I-95	From SR 1001 (Lizzie Mill Road) to the Johnston/Wilson County Line	
I-5972	Johnston	I-95	US 70 Business, Exit 95, from Outlet Center Drive to Yelverton Grove Road	Interchange Improvements
I-6061	Johnston	I-95	SR 1003 (Brogden Road)	Interchange Improvements
I-5974 / B-6044	Johnston	I-95	US 701 and NC 96	Construct Interchange / Bridge Replacement
I-5986 / I-5986A / I-5986B	Johnston/Harnett/Cumberland and	I-95	From I-40 (Exit 81) to I-95 Business (Exit 56)	Widen to Eight Lanes
I-5883	Harnett	I-95	SR1808 (Jonesboro Road) & SR 1709 (Hodges Road), Exit 75 & 77	Interchange Improvements
I-5878	Harnett	I-95	US 421 & SR 1793 (Pope Road), Exit 71 & 72	Interchange Improvements
I-5877	Harnett	I-95	SR 1811 (Bud Hawkins Road) & SR 1001 (Long Branch Road), Exit 70 & 71	Interchange Improvements
I-5987A	Cumberland/Robeson	I-95	I-95 from south of US 301 to south of NC 20	Widen to Eight Lanes

I-5987B	Cumberland/Robeson	I-95	I-95 from south of NC 20 to south of Proposed I-295	Widen to Eight Lanes
I-5850B	Robeson	I-95	From Mile Marker 22 to the Robeson/Cumberland County Line (Mile Marker 41)	Pavement Rehabilitation
I-6064 / I-6064A / I-6064B / I-6064C	Robeson	I-95	From Mile Marker 13 to Mile Marker 22	Widen to Eight Lanes / Pavement Rehabilitation
I-5939	Robeson	I-95	From Mile Marker 0 to Mile Marker 16	Pavement Rehabilitation
R-2829	Wake / Johnston	US 70	Eastern Wake Freeway from I-40 south of Garner to US 64-264 Knightdale Bypass	Roadway Construction
W-5600	Johnston	US 70	US 70 Business to Neuse River Bridge / Interchange at SR 1501 (Swift Creek Road) and SR 1919 (Wilson's Mills Road)	Convert to Freeway with Interchange
I-6044	Johnston	US 70	From SR 1003 (Buffalo Road) to Wayne County Line	Roadway Improvements
R-5829B	Johnston	US 70	From west of SR 1229 (Lube Smith Road) to east of SR 2314 (Pondfield Road)	Upgrade to Freeway
R-5829A	Wayne	US 70	From US 70 Bypass to west of SR 1229 (Lube Smith Road)	Upgrade to Freeway
I-6034	Lenoir	US 70	From Bear Creek Bridge to SR 1690 (Willie Measley Road)	Pavement Rehabilitation
R-5813	Lenoir	US 70	SR 1227 (Jim Sutton Road) / SR 1252 (Willie Measley Road)	Interchange Improvements

R-2553C	Lenoir	US 70	From NC 148 (Harvey Parkway) to US 70 east of NC 58	
I-6002	Jones / Craven	US 70	From Dover in Jones County to Neuse River Bridge in New Bern	Pavement Rehabilitation
U-6102	Craven	US 70	SR 1309 (Glenburnie Road)	Interchange Improvements
R-5777A / R-5777B / U-5713	Craven	US 70	Taverna Way / West Thurman Road & East Thurman Road / Neuse River to SR 1124 (Grantham Road)	Convert to Interchange
R-5777C	Craven	US 70	From Thurman Road to Havelock Bypass	Upgrade to Freeway / Construct Service Roads
R-5516	Craven	US 70	Slocum Road at Cherry Point Military Base	Construct Interchange
R-5749	Columbus	US 74	SR 1001 (Hallsboro Road)	Convert to Interchange
R-5797	Columbus	US 74	US 74 at SR 1506 (Old Boardman Road/Macedonia Church Road)	
R-5819 / R-5820	Columbus	US 74	SR 1740 (Old Lake Rd) convert at-grade intersection to grade separation & SR1735 (Chauncey Town Rd Lake Rd)	Convert to Interchange
I-6011	Columbus / Robeson	US 74	From NC 41 near Lumberton to US Lumberton to US 76 near Chadbourn	Upgrade US 74 to Interstate Standards
I-6011A	Robeson	US 74	US 74 convert at-grade intersection of US 74 and SR 2225	Convert to Interchange

			(Creek Road) to grade separation	
R-5752	Robeson	US 74	SR 2220 (Broadbridge Road)	Convert to Interchange
R-5751	Robeson	US 74	US 74 at NC 72 / NC 130	Convert to Interchange
W-5601EV	Columbus	US 74	From SR 1824 (Water Tank Road) to just east of the Brunswick County Line	Safety Improvements
W-5706S	Columbus	US 74	From 150 feet west of SR 1836 (Byrdville Freeman Road) to approximately 1800 feet east of SR 1845 (Money Hole Road)	
I-6055	Richmond / Scotland	US 74	US 74 Business east of Hamlet to US 74 Business west of Laurinburg	Upgrade to Interstate Standards
I-5979	Richmond	US 74	US 74 / Future I-74 at US 1 (Exit 311)	Interchange Improvements
R-3421 A& B	Richmond	US 74	I-73/74 from US 74 Bypass west of Rockingham at SR 1109 (Zion Church Road) to north of SR 1304 (Harrington Road)	
15BPR.38	Anson	US 74	Bridges 78 & 81	Bridge Rehab
R-5871	Anson	US 74	NC 742 (Graham Street) to Anson High School Road	Construct Access Management Improvements
R-5798	Anson	US 74	Graham Street to SR 1749	Construct Median

R-5878	Anson	US 74	US 74 west of Wadesboro to US 74 east of Wadesboro	Construct Freeway on New Location
B-6051	Gaston	US 74	Bridge 350091 over Catawba River	Bridge Replacement
U-5959	Gaston	US 74	US 74 (Wilkinson Blvd) at NC 273 (Park Street)	Intersection Improvements
U-6146 / B-5857	Gaston	US 74	Wilkinson Blvd (US 74) from Market Street to SR 2015 (Alberta Ave)	
R-2707C	Cleveland	US 74	US 74 (Shelby Bypass) from east of NC 226 to east of NC 150	
R-2707 D & E	Cleveland	US 74	Four lane divided freeway on new location east of NC 150 to west of SR 1001 (Stoney Point Road)	
R-4045	Cleveland	US 74	Interchange of SR 1168 (Academy St./Lattimore Rd) / Modifications to SR 1257 (Duncan Dr) and SR 1167 (Main St) to control access on US 74	Upgrade to Freeway
R-5713	Cleveland	US 74	US 74 Business to NC 226	Construct Access Management Improvements
B-5876	Rutherford	US 74	Bridge 800083 and 800084 over Second Broad River	Bridge Replacement

I-4400	Buncombe / Henderson	US 74	I-26 widening from NC 280 (Exit 40) to I-40	Widening
I-4700	Buncombe / Henderson	US 74	I-26 widening from US 25 to NC 280	Widening
I-4729/R-5873	Polk	US 74	NC 108 (exit 67)	Improve interchange
R-5867	Polk	US 74	Between NW quad of Exit 270 and John Sheerhan Rd	Construct 2 bridges

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

BID DOCUMENTATION

(7-31-12) (Rev. 8-3-15)

DB1 G142

General

The successful Design-Build Team shall submit the original, unaltered bid documentation or a certified copy of the original, unaltered bid documentation used to prepare the Price Proposal for this contract to the Department within ten days after receipt of notice of award of contract. Such documentation shall be placed in escrow with a banking institution or other bonded document storage facility selected by the Department.

The Department will not execute the contract until the original, unaltered bid documentation or a certified copy of the original, unaltered bid documentation has been received by the Department.

Terms

Bid Documentation – Bid Documentation shall mean all written information, working papers, computer printouts, electronic media, charts, and all other data compilations which contain or reflect information, data, and calculations used by the Proposer in the preparation of the Price Proposal. The term *bid documentation* includes, but is not limited to, Design-Build Team equipment rates, Design-Build Team overhead rates, labor rates, efficiency or productivity factors, arithmetical calculations, and quotations from subcontractors and material suppliers to the extent that such rates and quotations were used by the Proposer in formulating and determining the Price Proposal. The term *bid documentation* also includes any manuals, which are standard to the industry used by the Proposer in determining the Price Proposal. Such manuals may be included in the bid documentation by reference. Such reference shall include the name and date of the publication and the publisher. *Bid Documentation* does not include bid documents provided by the Department for use by the Proposer in bidding on this project. The Bid Documentation can be in

the form of electronic submittal (i.e. thumb drive) or paper. If the Bidder elects to submit the Bid Documentation in electronic format, the Department requires a backup submittal (i.e. a second thumb drive) in case one is corrupted.

Design-Build Team's Representative – Officer of the Prime Contractor's company; if not an officer, the Contractor shall supply a letter signed and notarized by an officer of the Prime Contractor's company, granting permission for the representative to sign the escrow agreement on behalf of the Prime Contractor.

Escrow Agent – Officer of the select banking institution or other bonded document storage facility authorized to receive and release bid documentation.

Escrow Agreement Information

A draft copy of the Escrow Agreement will be mailed to the Proposer after the notice of award for informational purposes. The Proposer and Department will sign the actual Escrow Agreement at the time the bid documentation is delivered to the Escrow Agent.

Failure to Provide Bid Documentation

The Proposer's failure to provide the original, unaltered bid documentation or a certified copy of the original, unaltered bid documentation within ten days after the notice of award is received by him may be just cause for rescinding the award of the contract and may result in the removal of the Proposer from the Department's list of qualified bidders for a period of up to 180 days. Award may then be made to the Proposer with the next lowest adjusted price or the work may be re-advertised and constructed under the contract or otherwise, as the Department may decide.

Submittal of Bid Documentation

- (A) Appointment - Email specs@ncdot.gov or call 919.707.6900 to schedule an appointment.
- (B) Delivery - A representative of the Bidder shall deliver the original, unaltered bid documentation or a certified copy of the original, unaltered bid documentation to the Department, in a container suitable for sealing, within ten days after the notice of award is received.
- (C) Packaging - The container shall be no larger than 15.5 inches in length by 12 inches wide by 11 inches high and shall be water resistant. The container shall be clearly marked on the face and the back of the container with the following information: Bid Documentation, Bidder's Name, Bidder's Address, Date of Escrow Submittal, Contract Number, TIP Number if applicable, and County.

Affidavit

Bid documentation will be considered a certified copy if the proposer includes an affidavit stating that the enclosed documentation is an EXACT copy of the original documentation used by the Proposer to determine the bid for this project. The affidavit shall also list each bid document with sufficient specificity so a comparison may be made between the list and the bid documentation to ensure that all of the bid documentation listed in the affidavit has been enclosed for escrow. The affidavit shall attest that the affiant has personally examined the bid documentation, that the affidavit lists all of the documents used by the proposer to determine the bid for this project, and that all bid documentation has been included. The affidavit shall be signed by a chief officer of the company, have the person's name and title typed below the signature, and the signature shall be notarized at the bottom of the affidavit.

Verification

Upon delivery of the bid documentation, the Department's Contract Officer and the Design-Build Team's representative will verify the accuracy and completeness of the bid documentation compared to the affidavit. Should a discrepancy exist, the Design-Build Team's representative shall immediately furnish the Department's Contract Officer with any other needed bid documentation. The Department's Contract Officer upon determining that the bid documentation is complete will, in the presence of the Design-Build Team's representative, immediately place the complete bid documentation and affidavit in the container and seal it. Both parties will deliver the sealed container to the Escrow Agent for placement in a safety deposit box, vault, or other secure accommodation.

Confidentiality of Bid Documentation

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

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

Duration and Use

The bid documentation and affidavit shall remain in escrow until 60 calendar days from the time the Prime Contractor receives the final estimate or until such time as the Design-Build Team:

- (A) Gives written notice of intent to file a claim,
- (B) Files a written claim,
- (C) Files a written and verified claim,
- (D) Initiates litigation against the Department related to the contract; or
- (E) Authorizes in writing its release.

Upon the giving of written notice of intent to file a claim, filing a written claim, filing a written and verified claim, or the initiation of litigation by the Design-Build Team against the Department, or receipt of a letter from the Design-Build Team authorizing release, the Department may obtain the release and custody of the bid documentation.

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

Release of Bid Documentation to the Contractor

If the bid documentation remains in escrow 60 calendar days after the time the Design-Build Team receives the final estimate and the Design-Build Team has not filed a written claim, filed a written and verified claim, or has not initiated litigation against the Department related to the contract, the Department will instruct the Escrow Agent to release the sealed container to the Prime Contractor.

The Prime Contractor will be notified by certified letter from the Escrow Agent that the bid documentation will be released to the Prime Contractor. The Prime Contractor or his representative shall retrieve the bid documentation from the Escrow Agent within 30 days of the receipt of the certified letter. If the Prime Contractor does not receive the documents within 30 days of the receipt of the certified letter, the Department will contact the Prime Contractor to determine final dispersion of the bid documentation.

Payment

The cost of the escrow will be borne by the Department. There will be no separate payment for all costs of compilation of the data, container, or verification of the bid documentation. Payment at the various contract unit or lump sum prices in the contract will be full compensation for all such costs.

TWELVE MONTH GUARANTEE

(7-15-03)

DB1 G145

- (A) The Design-Build Team shall guarantee materials and workmanship against latent and patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve months following the date of final acceptance of the work for maintenance and shall replace such defective materials and workmanship without cost to the Department. The Design-Build Team will not be responsible for damage due to normal wear and tear, for negligence on the part of the Department, and / or for use in excess of the design.
- (B) Where items of equipment or material carry a manufacturer's guarantee for any period in excess of twelve months, then the manufacturer's guarantee shall apply for that particular piece of equipment or material. The Department's first remedy shall be through the manufacturer although the Design-Build Team shall be responsible for invoking the warranted repair work with the manufacturer. The Design-Build Team's responsibility shall be limited to the term of the manufacturer's guarantee. NCDOT would be afforded the same warranty as provided by the manufacturer.

This guarantee provision shall be invoked only for major components of work in which the Design-Build Team would be wholly responsible for under the terms of the contract. Examples include pavement structures, bridge components and sign structures. This provision will not be used as a mechanism to force the Design-Build Team to return to the project to make repairs or perform additional work that the Department would normally compensate the Design-Build Team for. In addition, routine maintenance activities (i.e. mowing grass, debris removal, ruts in earth shoulders, etc.) are not parts of this guarantee.

Appropriate provisions of the payment and / or performance bonds shall cover this guarantee for the project. In addition, failure on the part of the responsible entity(ies) of the Design-Build Team to perform guarantee work within the terms of this provision shall be just cause to remove the responsible entity(ies) from the Department's corresponding prequalified list. The Design-Build Team shall be removed for a minimum of six months and will be reinstated only after all work has been corrected and the Design-Build Team requests reinstatement in writing.

To ensure uniform application statewide the Division Engineer will forward details regarding the circumstances surrounding any proposed guarantee repairs to the Chief Engineer for review and approval prior to the work being performed.

PERMANENT VEGETATION ESTABLISHMENT

(6-11-15) (Rev. 8-30-17)

104

DB01 G160

Establish permanent vegetation stands of the Long Term Stabilization mixtures identified in the Erosion and Sedimentation Control Scope of Work found elsewhere in this RFP. During the period between initial vegetation planting and final project acceptance, perform all work necessary to establish 80% coverage of permanent vegetation within the project limits, as well as, in borrow and waste pits. This work shall include erosion control device maintenance and installation, repair seeding and mulching, supplemental seeding and mulching, mowing, and fertilizer topdressing, as directed. All work shall be performed in accordance with the Erosion and Sedimentation Control

Scope of Work found elsewhere in this RFP and the applicable sections of the 2018 *Standard Specifications for Roads and Structures*.

Once the Engineer has determined that 80% coverage of permanent vegetation has been established, the Design-Build Team will be notified to remove the remaining erosion control devices that are no longer needed. The Design-Build Team shall be responsible for, and shall correct, any areas disturbed by operations performed in permanent vegetation establishment and the removal of temporary erosion control measures, whether occurring prior to or after placing traffic on the project.

EROSION & SEDIMENT CONTROL / STORMWATER CERTIFICATION

(1-16-07) (Rev. 9-20-16)

105-16, 225-2, 16

DB1 G180

General

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

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

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

Roles and Responsibilities

- (A) *Certified Erosion and Sediment Control / Stormwater Supervisor* - The Certified Supervisor shall be Level II and shall be responsible for ensuring the erosion and sediment control / stormwater plan is adequately implemented and maintained on the project and for conducting the quality control program. The Certified Supervisor shall be on the

project within 24 hours notice from initial exposure of an erodible surface to the project's final acceptance. The Certified Supervisor shall perform the following duties:

- (1) Manage Operations - Coordinate and schedule the work of subcontractors so that erosion and sediment control / stormwater measures are fully executed for each operation and in a timely manner over the duration of the contract.
 - (a) Oversee the work of subcontractors so that appropriate erosion and sediment control / stormwater preventive measures are conformed to at each stage of the work.
 - (b) Prepare the required National Pollutant Discharge Elimination System (NPDES) Inspection Record and submit to the Engineer.
 - (c) Attend all weekly or monthly construction meetings to discuss the findings of the NPDES inspection and other related issues.
 - (d) Implement the erosion and sediment control / stormwater site plans requested.
 - (e) Provide any needed erosion and sediment control / stormwater practices for the Design-Build Team's temporary work not shown on the plans developed by the Design-Build Team, such as, but not limited to work platforms, temporary construction, pumping operations, plant and storage yards, and cofferdams.
 - (f) Acquire applicable permits and comply with requirements for borrow pits, dewatering, and any temporary work conducted by the Design-Build Team in jurisdictional areas.
 - (g) Conduct all erosion and sediment control / stormwater work in a timely and workmanlike manner.
 - (h) Fully perform and install erosion and sediment control / stormwater work prior to any suspension of the work.
 - (i) Coordinate with Department, Federal, State and Local Regulatory agencies on resolution of erosion and sediment control / stormwater issues due to the Design-Build Team's operations.
 - (j) Ensure that proper cleanup occurs from vehicle tracking on paved surfaces and / or any location where sediment leaves the right of way.
 - (k) Have available a set of erosion and sediment control / stormwater plans that are initialed and include the installation date of Best Management Practices. These practices shall include temporary and permanent groundcover and be properly updated to reflect necessary plan and field changes for use and review by Department personnel, as well as regulatory agencies.
- (2) Requirements set forth under the NPDES Permit – The Department's NPDES Stormwater Permit (NCS000250) outlines certain objectives and management measures pertaining to construction activities. The permit references *NCG010000, General Permit to Discharge Stormwater* under the NPDES, and states that the Department shall incorporate the applicable requirements into its delegated Erosion and Sediment Control Program for construction activities disturbing one or more acres of land. The Department further incorporates these requirements on all

contracted bridge and culvert work at jurisdictional waters, regardless of size. Some of the requirements shall be, but are not limited to:

- (a) Control project site waste to prevent contamination of surface or ground waters of the state, e.g. from equipment operations / maintenance construction materials, concrete washout, chemicals, litter, fuels, lubricants, coolants, hydraulic fluids, any other petroleum products, and sanitary waste.
 - (b) Inspect erosion and sediment control / stormwater devices and stormwater discharge outfalls at least once every 7 calendar days, and within 24 hours after a rainfall event of 0.5 inch, or greater, that occurs within a 24-hour period. At the discretion of Division of Water Resources personnel, additional monitoring may be required if the receiving stream is 303(d) listed for turbidity and the project has had documented problems managing turbidity.
 - (c) Maintain an onsite rain gauge or use the Department's Multi-Sensor Precipitation Estimate website to maintain a daily record of rainfall amounts and dates.
 - (d) Maintain erosion and sediment control / stormwater inspection records for review by Department and Regulatory personnel upon request.
 - (e) Implement approved reclamation plans on all borrow pits, waste sites and staging areas.
 - (f) Maintain a log of turbidity test results as outlined in the Department's Procedure for Monitoring Borrow Pit Discharge.
 - (g) Provide secondary containment for bulk storage of liquid materials.
 - (h) Provide training for employees concerning general erosion and sediment control / stormwater awareness, the Department's NPDES Stormwater Permit NCS000250 requirements, and the applicable requirements of the *General Permit, NCG010000*.
 - (i) Report violations of the NPDES Permit to the Engineer immediately who will notify the NC Department of Environmental Quality Regional Office within 24 hours of becoming aware of the violation.
- (3) Quality Control Program - Maintain a quality control program to control erosion, prevent sedimentation and follow provisions / conditions of permits. The quality control program shall:
- (a) Follow permit requirements related to the Design-Build Team and subcontractors' construction activities.
 - (b) Ensure that all operators and / or subcontractor(s) on site have the proper erosion and sediment control / stormwater certification.
 - (c) Notify the Engineer when the required certified erosion and sediment control / stormwater personnel are not available on the job site when needed.
 - (d) Conduct the inspections required by the NPDES Permit.
 - (e) Take corrective actions in the proper timeframe as required by the NPDES Permit for problem areas identified during the NPDES inspections.

- (f) Incorporate erosion control into the work in a timely manner and stabilize disturbed areas with mulch / seed or vegetative cover on a section-by-section basis.
 - (g) Use flocculants approved by state regulatory authorities where appropriate and where required for turbidity and sedimentation reduction.
 - (h) Ensure proper installation and maintenance of temporary erosion and sediment control devices.
 - (i) Remove temporary erosion or sediment control devices when they are no longer necessary as agreed upon by the Engineer.
 - (j) The Design-Build Team's quality control and inspection procedures shall be subject to review by the Engineer. Maintain NPDES inspection records and make records available at all times for verification by the Engineer.
- (B) *Certified Foreman* - At least one Certified Foreman shall be onsite for each type of work listed herein during the respective construction activities to control erosion, prevent sedimentation and follow permit provisions:
- (1) Foreman in charge of grading activities
 - (2) Foreman in charge of bridge or culvert construction over jurisdictional areas
 - (3) Foreman in charge of utility activities

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

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

- (C) *Certified Installers* - Provide at least one onsite, Level I Certified Installer for each of the following erosion and sediment control / stormwater crew:
- (1) Seeding and Mulching
 - (2) Temporary Seeding
 - (3) Temporary Mulching
 - (4) Sodding
 - (5) Silt fence or other perimeter erosion / sediment control device installations
 - (6) Erosion control blanket installation
 - (7) Hydraulic tackifier installation
 - (8) Turbidity curtain installation
 - (9) Rock ditch check / sediment dam installation
 - (10) Ditch liner / matting installation
 - (11) Inlet protection
 - (12) Riprap placement
 - (13) Stormwater BMP installations (such as but not limited to level spreaders, retention / detention devices)

(14) Pipe installations within jurisdictional areas

If a Level I *Certified Installer* is not onsite, the Design-Build Team may substitute a Level II Foreman for a Level I Installer, provided the Level II Foreman is not tasked to another crew requiring Level II Foreman oversight.

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

Preconstruction Meeting

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

Ethical Responsibility

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

Revocation or Suspension of Certification

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

The Chief Engineer may recommend suspension or permanent revocation of certification due to the following:

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

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

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

Chief Engineer
1536 Mail Service Center
Raleigh, NC 27699-1536

Failure to appeal within ten calendar days shall result in the proposed adverse action becoming effective on the date specified on the certified notice. Failure to appeal within the time specified shall result in a waiver of all future appeal rights regarding the adverse action taken. The certificant will not be allowed to perform duties associated with the certification during the appeal process. The Chief Engineer will hear the appeal and make a decision within seven days of hearing the appeal. The decision of the Chief Engineer shall be final and will be made in writing to the certificant.

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

Measurement and Payment

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

CLEARING AND GRUBBING

(9-1-11) (Rev. 8-18-15)

DB2 R01

With the exception of areas with Permanent Utility Easements, perform clearing on this project to the limits established by Method "II" shown on Roadway Standard Drawing No. 200.03. In areas with Permanent Utility Easements, clearing shall extend to the right of way limits.

BURNING RESTRICTIONS

(7-1-95)

DB2 R05

Open burning shall not be permitted on any portion of the right of way limits established for this project. The Design-Build Team shall not burn the clearing, grubbing or demolition debris designated for disposal and generated from the project at locations within the project limits, off the project limits or at any waste or borrow sites in Buncombe, Cumberland, Durham, Gaston, Mecklenburg, New Hanover and Wake Counties. The Design-Build Team shall dispose of the clearing, grubbing and demolition debris by means other than burning and in accordance with state and local rules and regulations.

DIGITAL CCTV CAMERA ASSEMBLY

1.1 DESCRIPTION

Furnish and install a Digital CCTV Camera Assembly as described in these Project Special Provisions. All new CCTV cameras shall be fully compatible with the video management software currently in use by the Region and the Statewide Traffic Operations Center (STOC). Provide a Pelco Spectra Enhanced low light 30X minimum zoom, Axis Dome Network Camera low light 30X minimum zoom or an approved equivalent that meets the requirements of these Project Special Provisions.

Materials

A. General

Furnish and install new CCTV camera assembly at the locations shown on the Plans and as approved by the Engineer. Each assembly consists of the following:

- One dome CCTV color digital signal processing camera unit with zoom lens, filter, control circuit, and accessories in a single enclosed unit
- A NEMA-rated enclosure constructed of aluminum with a clear acrylic dome or approved equal Camera Unit housing.
- Motorized pan, tilt, and zoom
- Built-in video encoder capable of H.264/MPEG-4 compression for video-over IP transmission
- Pole-mount camera attachment assembly
- A lightning arrestor installed in-line between the CCTV camera and the equipment cabinet components.
- All necessary cable, connectors and incidental hardware to make a complete and operable system.

B. Camera and Lens

1. Cameras

Furnish a new CCTV camera that utilizes charged-coupled device (CCD) technology or Complementary Metal-Oxide-Semiconductor (CMOS) technology. The camera must meet the following minimum requirements:

- Video Resolution: Minimum 1920x1080 (HDTV 1080p)
- Aspect Ratio: 16:9
- Overexposure protection: The camera shall have built-in circuitry or a protection device to prevent any damage to the camera when pointed at strong light sources, including the sun
- Low light condition imaging
- Wide Dynamic Range (WDR) operation
- Electronic Image Stabilization (EIS)
- Automatic focus with manual override

2. Zoom Lens

Furnish each camera with a motorized zoom lens that is a high-performance integrated dome system or approved equivalent with automatic iris control with manual override and neutral density spot filter. Furnish lenses that meet the following optical specifications:

- 30X minimum optical zoom, and 12X minimum digital zoom
- Preset positioning: minimum of 128 presets

The lens must be capable of both automatic and remote manual control iris and focus override operation. The lens must be equipped for remote control of zoom and focus, including automatic movement to any of the preset zoom and focus positions. Mechanical or electrical means must be provided to protect the motors from overrunning in extreme positions. The operating voltages of the lens must be compatible with the outputs of the camera control.

Communication Standards:

The CCTV camera shall support the appropriate NTCIP 1205 communication protocol (version 1.08 or higher), ONVIF Profile G protocol, or approved equal.

Networking Standards:

- Network Connection: 10/100 Mbps auto-negotiate
- Frame Rate: 30 to 60 fps
- Data Rate: scalable
- Built-in Web Server
- Unicast & multicast support
- Two simultaneous video streams (Dual H.264 and MJPEG):
 - Video 1: H.264 (Main Profile, at minimum)
 - Video 2: H.264 or MJPEG
- Supported Protocols: DNS, IGMPv2, NTP, RTSP, RTP, TCP, UDP, DHCP, HTTP, IPv4, IP6
- 130 db Wide Dynamic Range (WDR)

The video camera shall allow for the simultaneous encoding and transmission of the two digital video streams, one in H.264 format (high-resolution) and one in H.264 or MJPEG format (low-resolution).

Initially use UDP/IP for video transport and TCP/IP for camera control transport unless otherwise approved by the Engineer.

The 10/100BaseTX port shall support half-duplex or full-duplex and provide auto negotiation and shall be initially configured for full-duplex.

The camera unit shall be remotely manageable using standard network applications via web browser interface administration. Telnet or SNMP monitors shall be provided.

C. Camera Housing

Furnish new dome style enclosure for the CCTV assembly. Equip each housing with mounting assembly for attachment to the CCTV camera pole. The enclosures must be

equipped with a sunshield and be fabricated from corrosion resistant aluminum and finished in a neutral color of weather resistant enamel. The enclosure must meet or exceed NEMA 4X ratings. The viewing area of the enclosure must be tempered glass. The pendant must meet NEMA Type 4X, IP66 rating and use 1-1/2-inch NPT thread. The sustained operating temperature must be -50 to 60C (-58 to 144F), condensing temperature 10 to 100% Relative Humidity (RH).

D. Pan and Tilt Unit

Equip each new dome style assembly with a pan and tilt unit. The pan and tilt unit must be integral to the high-performance integrated dome system. The pan and tilt unit must be rated for outdoor operation, provide dynamic braking for instantaneous stopping, prevent drift, and have minimum backlash. The pan and tilt units must meet or exceed the following specifications:

- Pan: continuous 360 Degrees rotation
- Tilt: up/down +2 to -90 degrees minimum
- Motors: Two-phase induction type, continuous duty, instantaneous reversing
- Preset Positioning: minimum of 128 presets
- Low latency for improved Pan and Tilt Control
- FCC, Class A; UL/cUL Listed

E. Video Ethernet Encoder

Furnish cameras with a built-in digital video Ethernet encoder to allow video-over-IP transmission. The encoder units must be built into the camera housing and require no additional equipment to transmit encoded video over IP networks.

Encoders must have the following minimum features:

- Network Interface: Ethernet 10/100Base-TX (RJ-45 connector)
- Protocols: IPv4, Ipv6, HTTP, UpnP, DNS, NTP, RTP, RTSP, TCP, UDP, IGMP, and DHCP
- Security: SSL, SSH, 802.1x, HTTPS encryption with password-controlled browser interface
- Video Streams: Minimum 2 simultaneous streams, user configurable
- Compression: H.264 (MPEG-4 Part 10/AVC)
- Resolution Scalable: NTSC-compatible 320x176 to 1920x1080 (HDTV 1080p)
- Aspect Ratio: 16:9
- Frame Rate: 1-30 FPS programmable (full motion)
- Bandwidth: 30 kbps – 6 Mbps, configurable depending on resolution
- Edge Storage: SD/SDHC/SDXC slot supporting up to 64GB memory card

F. Control Receiver/Driver

Provide each new camera unit with a control receiver/driver that is integral to the CCTV dome assembly. The control receiver/driver will receive serial asynchronous data initiated from a camera control unit, decode the command data, perform error checking, and drive the pan/tilt

unit, camera controls, and motorized lens. As a minimum, the control receiver/drivers must provide the following functions:

- Zoom in/out
- Automatic focus with manual override
- Tilt up/down
- Automatic iris with manual override
- Pan right/left
- Minimum 128 preset positions for pan, tilt, and zoom, 16 Preset Tours, 256 Dome Presets
- Up to 32 Window Blanks.

In addition, each control receiver/driver must accept status information from the pan/tilt unit and motorized lens for preset positioning of those components. The control receiver/driver will relay pan, tilt, zoom, and focus positions from the field to the remote camera control unit. The control receiver/driver must accept “goto” preset commands from the camera control unit, decode the command data, perform error checking, and drive the pan/tilt and motorized zoom lens to the correct preset position. The preset commands from the camera control unit will consist of unique values for the desired pan, tilt, zoom, and focus positions.

G. Electrical

The camera assembly shall support Power-over-Ethernet (PoE) in compliance with IEEE 802.3. Provide any external power injector that is required for PoE with each CCTV assembly.

H. CCTV Camera Attachment to Pole

Furnish and install an attachment assembly for the CCTV camera unit. Use stainless steel banding approved by the Engineer.

Furnish CCTV attachments that allow for the removal and replacement of the CCTV enclosure as well as providing a weatherproof, weather tight, seal that does not allow moisture to enter the enclosure.

Furnish a CCTV Camera Attachment Assembly that can withstand wind loading at the maximum wind speed and gust factor called for in these Special Provisions and can support a minimum camera unit dead load of 45 pounds (20.4 kg).

I. Riser

Furnish material meeting the requirements of Section 1091-3 and 1098-4 of the 2018 Standard Specifications for Roads and Structures. Furnish a 1” riser with weatherhead for instances where the riser is only carrying an Ethernet cable. For installations where fiber optic cable is routed to the cabinet through a 2” riser with heat shrink tubing the Contractor may elect to install the Ethernet cable in the same riser with the fiber cable.

J. Data line Surge Suppression

Furnish data line surge protection devices (SPD) shall meet the following minimum requirements:

- UL497B
- Service Voltage: < 60 V

- Protection Modes: L-G (All), L-L (All)
- Response Time: <5 nanoseconds
- Port Type: Shielded RJ-45 IN/Out
- Clamping Level: 75 V
- Surge Current Rating: 20 kA/Pair
- Power Handling: 144 Watts
- Data Rate: up to 10 GbE
- Operating Temperature: -40° F to + 158° F
- Standards Compliance: Cat-5e, EIA/TIA 568A and EIA/TIA 568B
- Warranty: Minimum of 5-year limited warranty

The data line surge protector shall be designed to operate with Power Over Ethernet (POE) devices. The SPD shall be designed such that when used with shielded cabling, a separate earth ground is not required. It shall be compatible with Cat-5e, Cat 6, and Cat-6A cabling.

Protect the electrical and Ethernet cables from the CCTV unit entering the equipment cabinet with surge protection. Provide an integrated unit that accepts unprotected electrical and Ethernet connections and outputs protected electrical and Ethernet connections.

K. POE Injector

Furnish POE Injectors meeting the following minimum performance requirements and that is compatible with the CCTV Camera and Ethernet Switch provided for the project.

- Working temp/humidity: 14° F to 131° F/maximum 90%, non-condensing
- Connectors: Shielded RJ-45, EIA 568A and EIA 568B
- Input Power: 100 to 240 VAC, 50 to 60 Hz
- Pass Through Data Rates: 10/100/1000 Mbps
- Regulatory: IEEE 802.3at (POE)
- Number of Ports: 1 In and 1 Out
- Safety Approvals: UL Listed

Ensure the POE Injector is designed for Plug-and-Play installation, requiring no configurations and supports automatic detection and protection of non-standard Ethernet Terminal configurations.

1.2 CONSTRUCTION METHODS

A. General

Obtain approval of the camera locations and orientation from the Engineer prior to installing the CCTV camera assembly.

Mount CCTV camera units at a height to adequately see traffic in all directions and as approved by the Engineer. The maximum attachment height is 45 feet above ground level unless specified elsewhere or directed by the Engineer.

Mount the CCTV camera units such that a minimum 5 feet of clearance is maintained between the camera and the top of the pole.

Mount CCTV cameras on the side of poles nearest intended field of view. Avoid occluding the view with the pole.

Install the data line surge protection device and POE Injector in accordance with the manufacturer's recommendations.

Install the riser in accordance with Section 1722-3 of the 2018 Standard Specifications for Roads and Structures. Install the Ethernet cable in the riser from the field cabinet to the CCTV camera.

B. Electrical and Mechanical Requirements

Install an "Air Terminal and Lightning Protections System" in accordance with the Air Terminal and Lightning Protection System Specification for the CCTV Camera Assembly. Ground all equipment as called for in the Standard Specifications, these Special Provisions, and the Plans.

Install surge protectors on all ungrounded conductors entering the CCTV enclosure.

1.3 GENERAL TEST PROCEDURE

Test the CCTV Camera and its components in a series of functional tests and ensure the results of each test meet the specified requirements. These tests should not damage the equipment. The Engineer will reject equipment that fails to fulfill the requirements of any test. Resubmit rejected equipment after correcting non-conformities and re-testing; completely document all diagnoses and corrective actions. Modify all equipment furnished under this contract, without additional cost to the Department, to incorporate all design changes necessary to pass the required tests.

Provide 4 copies of all test procedures and requirements to the Engineer for review and approval at least 30 days prior to the testing start date.

Only use approved procedures for the tests. Include the following in the test procedures:

- A step-by-step outline of the test sequence that demonstrates the testing of every function of the equipment or system tested
- A description of the expected nominal operation, output, and test results, and the pass / fail criteria
- An estimate of the test duration and a proposed test schedule
- A data form to record all data and quantitative results obtained during the test
- A description of any special equipment, setup, manpower, or conditions required by the test

Provide all necessary test equipment and technical support. Use test equipment calibrated to National Institute of Standards and Technology (NIST) standards. Provide calibration documentation upon request.

Conform to these testing requirements and the requirements of these specifications. It is the Contractor's responsibility to ensure the system functions properly even after the Engineer accepts the CCTV test results.

Provide 4 copies of the quantitative test results and data forms containing all data taken, highlighting any non-conforming results and remedies taken, to the Engineer for approval. An authorized representative of the manufacturer must sign the test results and data forms.

1.4 COMPATIBILITY TESTS

A. CCTV System

Compatibility Tests are applicable to CCTV cameras that the Contractor wishes to furnish but are of a different manufacturer or model series than the existing units installed in the Region. If required, the Compatibility Test shall be completed and accepted by the Engineer prior to approval of the material submittal.

The Compatibility Test shall be performed in a laboratory environment at a facility chosen by the Engineer based on the type of unit being tested. Provide notice to the Engineer with the material submitted that a Compatibility Test is requested. The notice shall include a detailed test plan that will show compatibility with existing equipment. The notice shall be given a minimum of 15 calendar days prior to the beginning of the Compatibility Test.

The Contractor shall provide, install, and integrate a full-functioning unit to be tested. The Department will provide access to existing equipment to facilitate these testing procedures. The Engineer will determine if the Compatibility Test was acceptable for each proposed device. To prove compatibility the Contractor is responsible for configuring the proposed equipment at the applicable Traffic Operations Center (TOC) with the accompaniment of an approved TOC employee.

1.5 OPERATIONAL FIELD TEST (ON-SITE COMMISSIONING)

A. CCTV System

Final CCTV locations must be field verified and approved by the Engineer. Perform the following local operational field tests at the camera assembly field site in accordance with the test plans. The Contractor is responsible for providing a laptop for camera control and positioning during the test. After completing the installation of the camera assemblies, including the camera hardware, power supply, and connecting cables, the contractor shall:

Local Field Testing

- Furnish all equipment and labor necessary to test the installed camera and perform the following tests before any connections are made.
- Verify that physical construction has been completed.
- Inspect the quality and tightness of ground and surge protector connections.
- Check the power supply voltages and outputs, check connection of devices to power source.
- Verify installation of specified cables and connection between the camera, PTZ, camera control receiver, and control cabinet.
- Make sure cabinet wiring is neat and labeled properly; check wiring for any wear and tear; check for exposed or loose wires.

- Perform the CCTV assembly manufacturer's initial power-on test in accordance with the manufacturer's recommendation.
- Set the camera control address.
- Exercise the pan, tilt, zoom, and focus operations along with preset positioning, and power on/off functions.
- Demonstrate the pan, tilt and zoom speeds and movement operation meet all applicable standards, specifications, and requirements.
- Define, test and/or change presets.
- Ensure camera field of view is adjusted properly and there are no objects obstructing the view.
- Ensure camera lens is dust-free.
- Ensure risers are bonded and conduits entering cabinets are sealed properly.
- Lightning arrestor bonded correctly.

Central Operations Testing

- Interconnect the CCTV Camera's communication interface device with one of the following methods as depicted on the plans:
 - communication network's assigned Ethernet switch and assigned fiber-optic trunk cable and verify a transmit/receive LED is functioning and that the CCTV camera is fully operational at the TOC.
- OR
- to the DOT furnished cellular modem and verify a transmit/receive LED is functioning and that the CCTV camera is fully operational at the TOC.

- Exercise the pan, tilt, zoom, and focus operations along with preset positioning, and power on/off functions.
- Demonstrate the pan, tilt and zoom speeds and movement operation meet all applicable standards, specifications, and requirements.
- Define, test and/or change presets.

Approval of Operational Field Test results does not relieve the Contractor to conform to the requirements in these Project Special Provisions. If the CCTV system does not pass these tests, document a correction or substitute a new unit as approved by the Engineer. Re-test the system until it passes all requirements.

CCTV FIELD EQUIPMENT CABINET

1.1 DESCRIPTION

For standalone CCTV Camera installations, furnish 336 pole mounted cabinets to house CCTV control and transmission equipment. The cabinets must consist of a cabinet housing, 19-inch EIA mounting cage, and power distribution assembly (PDA #3 as described in the CALTRANS TSCES).

The cabinet housing must conform to Sections 6.2.2 (Housing Construction), 6.2.3 (Door Latches and Locks), 6.2.4 (Housing Ventilation), and 6.2.5 (Hinges and Door Catches) of the CALTRANS TSCES. Do not equip the cabinet housings with a police panel.

The cabinet cage must conform to Section 6.3 of the CALTRANS TSCES.

Terminal blocks on the PDA #3 Assembly have internal wiring for the Model 200 switch pack sockets. Do not use terminal blocks on PDA #3 as power terminals for cabinet devices. Do not furnish cabinet with "Input Panels" described in Section 6.4.7.1 of the TSCES. Do furnish cabinet with "Service Panels" as described in Section 6.4.7.1 of the TSCES and as depicted on drawing TSCES-9 in the TSCES. Use service panel #2.

Do not furnish cabinets with C1, C5, or C6 harness, input file, output file, monitor units, model 208 unit, model 430 unit, or switch packs.

Provide the hub cabinet with a main circuit breaker sized according to the NEC. Use appropriately sized branch circuit breakers to protect the electronics in the CCTV cabinet.

Furnish all conduits, shelving, mounting adapters, and other equipment as necessary to route cabling, mount equipment and terminate conduit in the equipment cabinet.

1.2 MATERIALS

A. Shelf Drawer

Provide a pull out, hinged-top drawer, having sliding tracks, with lockout and quick disconnect feature, such as a Vent-Rak Retractable Writing Shelf, #D-4090-13 or equivalent in the equipment cabinet. Furnish a pullout drawer that extends a minimum of 14 inches that is capable of being lifted to gain access to the interior of the drawer. Minimum interior dimensions of the drawer are to be 1 inch high, 13 inches deep, and 16 inches wide. Provide drawers capable of supporting a 40-pound device or component when fully extended.

B. Cabinet Light

Each cabinet must include two (2) LED lighting fixtures (one front, one back) mounted horizontally inside the top portion of the cabinet. The fixtures must include a cool white lamp and must be operated by normal power factor UL-listed ballast. A door-actuated switch must be installed to turn on the applicable cabinet light when the front door or

back door is opened. The lights must be mounted not to interfere with the upper door stay.

C. Surge Protection for System Equipment

Each cabinet must be provided with devices to protect the CCTV and communications equipment from electrical surges and over voltages as described below.

1. Main AC Power Input

Each cabinet must be provided with a hybrid-type, power line surge protection device mounted inside the power distribution assembly. The protector must be installed between the applied line voltage and earth ground. The surge protector must be capable of reducing the effect of lightning transient voltages applied to the AC line. The protector must be mounted inside the Power Distribution Assembly housing facing the rear of the cabinet. The protector must include the following features and functions:

- Maximum AC line voltage: 140 VAC.
- Twenty pulses of peak current, each of which must rise in 8 microseconds and fall in 20 microseconds to ½ the peak: 20000 Amperes.
- The protector must be provided with the following terminals:
 - Main Line (AC Line first stage terminal).
 - Main Neutral (AC Neutral input terminal).
 - Equipment Line Out (AC line second state output terminal, 19 amps).
 - Equipment Neutral Out (Neutral terminal to protected equipment).
 - GND (Earth connection).
- The Main AC line in and the Equipment Line out terminals must be separated by a 200 Microhenry (minimum) inductor rated to handle 10 AMP AC Service.
- The first stage clamp must be between Main Line and Ground terminals.
- The second stage clamp must be between Equipment Line Out and Equipment Neutral.
- The protector for the first and second stage clamp must have an MOV or similar solid state device rated at 20 KA and must be of a completely solid-state design (i.e., no gas discharge tubes allowed).
- The Main Neutral and Equipment Neutral Out must be connected together internally and must have an MOV similar solid-state device or gas discharge tube rated at 20 KA between Main Neutral and Ground terminals.
- Peak Clamp Voltage: 350 volts at 20 KA. (Voltage measured between Equipment Line Out and Equipment Neutral Out terminals. Current applied between Main Line and

Ground Terminals with Ground and Main Neutral terminals externally tied together).

- Voltage must never exceed 350 volts.
- The Protector must be epoxy-encapsulated in a flame-retardant material.
- Continuous service current: 10 Amps at 120 VAC RMS.
- The Equipment Line Out must provide power to cabinet CCTV and communications equipment.

2. Ground Bus

Provide a neutral bus that is not connected to the earth ground or the logic ground anywhere within the cabinet. Ensure that the earth ground bus and the neutral ground bus each have ten compression type terminals, each of which can accommodate wires ranging from number 14 through number 4 AWG.

3. Uninterruptible Power Supply (UPS)

Furnish and install one rack mounted UPS in each new cabinet that meet the following minimum specifications:

Output

Output Power Capacity	480 Watts / 750 VA
Max Configurable Power	480 Watts / 750 VA
Nominal Output Voltage	120V
Output Voltage Distortion	Less than 5% at full load
Output Frequency (sync to mains)	57 - 63 Hz for 60 Hz nominal
Crest Factor	up to 5:1
Waveform Type	Sine wave
Output Connections	(4) NEMA 5-15R

Input

Nominal Input Voltage	120V
Input Frequency	50/60 Hz +/- 3 Hz (auto sensing)
Input Connections	NEMA 5-15P
Cord Length	6 feet
Input voltage range for main operations	82 - 144V
Input voltage adjustable range for mains operation	75 -154 V

Battery Type

Maintenance-free sealed Lead-Acid battery with suspended electrolyte, leak-proof.

Typical recharge time	2 hours
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Communications & Management

Interface Port(s)	DB-9 RS-232, USB
Control panel battery	LED status display with load and bar-graphs
Surge Protection and Filtering	
Surge energy rating	480 Joules
Environmental	
Operating Environment	-32 - 104 °F
Operating Relative Humidity	0 - 95%
Storage Temperature	5 - 113 °F
Storage Relative Humidity	0 - 95%
Conformance	
Regulatory Approvals	FCC Part 15 Class A, UL 1778

1.3 CONSTRUCTION METHODS

A. General

For each field equipment cabinet installation, use stainless steel banding or other methods approved by the Engineer to fasten the cabinet to the pole. Install field equipment cabinets so that the height to the middle of the enclosure is 4 feet from ground level. No risers shall enter the top or sides of the equipment cabinet.

Install all conduits, condulets, and attachments to equipment cabinets in a manner that preserves the minimum bending radius of cables and creates waterproof connections and seals.

Install a UPS in each cabinet and power all CCTV cameras from the UPS.

Install a level concrete technician pad measuring a minimum four inches thick, 24 inches wide and 36 inches long at the front door of the CCTV equipment cabinet.

CCTV WOOD POLE**Description**

Furnish and install wood poles, grounding systems and all necessary hardware for the CCTV camera installations. Reference applicable Sections of Article 1720 of the 2018 Standard Specifications for Roads and Structures for Materials and Construction.

Furnish an air terminal and lightning protection system in accordance with the “Air Terminal & Lightning Protection System” Project Special Provisions.

Furnish and install wood poles with grounding systems and all necessary hardware in accordance with Section 1720 of the Standard Specifications.

Materials

Material, equipment, and hardware furnished under this section shall be pre-approved on the Department’s QPL. For wood poles refer to Subarticles 1082-3(F) Treated Timber and Lumber—Poles and 1082-4(A)—General; 1082-4(B)—Timber Preservatives; 1082-4(G)—Poles; in the 2018 Standard Specifications for Roads and Structures.

CCTV Wood Pole

Unless otherwise specified in the Plans, furnish Class 3 or better wood poles that are a minimum of 60’ long to permit the CCTV camera to be mounted approximately 45 feet above the ground and a minimum of 5 feet from the top of the pole.

Construction Methods

Mark final pole locations and receive approval from the Engineer before installing poles. Comply with all requirements of Section 1720-3 of the Standard Specifications.

Install the required Air Terminal & Lightning Protection System as described in the Air Terminal & Lightning Protection Specifications and as referenced in the following Typical Details:

- CCTV Camera Installation for Wood Pole with Aerial Electrical Service
- CCTV Camera Installation for Wood Pole with Underground Electrical Service

FOUNDATIONS AND ANCHOR ROD ASSEMBLIES FOR METAL POLES

(1-17-12) (Rev. 11-22-17)

9, 14, 17

DB9 R05

Description

Foundations for metal poles include foundations for signals, cameras, overhead and dynamic message signs (DMS) and high mount and light standards supported by metal poles or upright trusses. Foundations consist of footings with pedestals and drilled piers with or without grade beams or wings. Anchor rod assemblies consist of anchor rods (also called anchor bolts) with nuts and washers on the exposed ends of rods and nuts and a plate or washers on the other ends of rods embedded in the foundation.

Construct concrete foundations with the required resistances and dimensions and install anchor rod assemblies in accordance with the contract and accepted submittals. Construct drilled piers

consisting of cast-in-place reinforced concrete cylindrical sections in excavated holes. Provide temporary casings or polymer slurry as needed to stabilize drilled pier excavations. Use a prequalified Drilled Pier Contractor to construct drilled piers for metal poles. Define “excavation” and “hole” as a drilled pier excavation and “pier” as a drilled pier.

This provision does not apply to foundations for signal pedestals; see Section 1743 of the 2018 *Standard Specifications for Roads and Structures* and 2018 Roadway Standard Drawing No. 1743.01.

Materials

Refer to the 2018 *Standard Specifications for Roads and Structures*.

Item	Section
Conduit	1091-3
Grout, Type 2	1003
Polymer Slurry	411-2(B)(2)
Portland Cement Concrete	1000
Reinforcing Steel	1070
Rollers and Chairs	411-2(C)
Temporary Casings	411-2(A)

Provide Type 3 material certifications in accordance with Article 106-3 of the 2018 *Standard Specifications for Roads and Structures* for conduit, rollers, chairs and anchor rod assemblies. Store steel materials on blocking at least 12" above the ground and protect it at all times from damage; and when placing in the work make sure it is free from dirt, dust, loose mill scale, loose rust, paint, oil or other foreign materials. Load, transport, unload and store foundation and anchor rod assembly materials so materials are kept clean and free of damage. Bent, damaged and / or defective materials shall be rejected.

Use conduit type in accordance with the contract. Use Class A concrete for footings and pedestals, Class Drilled Pier concrete for drilled piers and Class AA concrete for grade beams and wings including portions of drilled piers above bottom of wings elevations. Corrugated temporary casings may be accepted at the discretion of the Engineer. A list of approved polymer slurry products is available from:

connect.ncdot.gov/resources/Geological/Pages/Products.aspx

Provide anchor rod assemblies in accordance with the contract consisting of the following:

- (A) Straight anchor rods
- (B) Heavy hex top and leveling nuts and flat washers on exposed ends of rods
- (C) Nuts and either flat plates or washers on the other ends of anchor rods embedded in foundations

Do not use lock washers. Use steel anchor rods, nuts and washers that meet ASTM F1554 for Grade 55 rods and Grade A nuts. Use steel plates and washers embedded in concrete with a thickness of at least 1/4". Galvanize anchor rods and exposed nuts and washers in accordance with Article 1076-4 of the 2018 *Standard Specifications for Roads and Structures*. It is not necessary to galvanize nuts, plates and washers embedded in concrete.

Construction Methods

Install the required size and number of conduits in foundations in accordance with the plans developed by the Design-Build Team and accepted submittals. Construct top of piers, footings, pedestals, grade beams and wings flat, level and within 1" of elevations shown in the plans developed by the Design-Build Team or approved by the Engineer. Provide an Ordinary Surface finish in accordance with Subarticle 825-6(B) of the 2018 *Standard Specifications for Roads and Structures* for portions of foundations exposed above finished grade. Do not remove anchor bolt templates or pedestal or grade beam forms or erect metal poles or upright trusses onto foundations until concrete attains a compressive strength of at least 3,000 psi.

(A) Drilled Piers

Before starting drilled pier construction, hold a predrill meeting to discuss the installation, monitoring and inspection of the drilled piers. Schedule this meeting after the Drilled Pier Contractor has mobilized to the site. The Resident or Division Traffic Engineer, Design-Build Team and Drilled Pier Contractor Superintendent shall attend this predrill meeting.

Do not excavate holes, install piles or allow equipment wheel loads or vibrations within 20 feet of completed piers until 16 hours after Drilled Pier concrete reaches initial set.

Check for correct drilled pier alignment and location before beginning drilling. Check plumbness of holes frequently during drilling.

Construct drilled piers with the minimum required diameters shown in the plans developed by the Design-Build Team. Install piers with tip elevations no higher than shown in the plans developed by the Design-Build Team or approved by the Engineer.

Excavate holes with equipment of the sizes required to construct drilled piers. Depending on the subsurface conditions encountered, drilling through rock and boulders may be required. Do not use blasting for drilled pier excavations.

Contain and dispose of drilling spoils and waste concrete as directed and in accordance with Section 802 of the 2018 *Standard Specifications for Roads and Structures*. Drilling spoils consist of all materials and fluids removed from excavations.

If unstable, caving or sloughing materials are anticipated or encountered, stabilize holes with temporary casings and / or polymer slurry. Do not use telescoping temporary casings. If it becomes necessary to replace a temporary casing during drilling, backfill the

excavation, insert a larger casing around the casing to be replaced or stabilize the excavation with polymer slurry before removing the temporary casing.

If temporary casings become stuck or the Design-Build Team proposes leaving casings in place, temporary casings shall be installed against undisturbed material. Unless otherwise approved, do not leave temporary casings in place for mast arm poles and cantilever signs. The Engineer will determine if casings may remain in place. If the Design-Build Team proposes leaving temporary casings in place, do not begin drilling until a casing installation method is approved.

Use polymer slurry and additives to stabilize holes in accordance with the slurry manufacturer's recommendations. Provide mixing water and equipment suitable for polymer slurry. Maintain the required slurry properties at all times except for sand content.

Define a "sample set" as slurry samples collected from mid-height and within two feet of the bottom of holes. Take sample sets from excavations to test polymer slurry immediately after filling holes with slurry, at least every four hours thereafter and immediately before placing concrete. Do not place Drilled Pier concrete until both slurry samples from an excavation meet the required polymer slurry properties. If any slurry test results do not meet the requirements, the Engineer may suspend drilling until both samples from a sample set meet the required polymer slurry properties.

Remove soft and loose material from bottom of holes using augers to the satisfaction of the Engineer. Assemble rebar cages and place cages and Drilled Pier concrete in accordance with Subarticle 411-4(E) of the 2018 *Standard Specifications for Roads and Structures*, except for the following:

- (1) Inspections for tip resistance and bottom cleanliness are not required,
- (2) Temporary casings may remain in place if approved, and
- (3) Concrete placement may be paused near the top of pier elevations for anchor rod assembly installation and conduit placement or
- (4) If applicable, concrete placement may be stopped at bottom of grade beam or wings elevations for grade beam or wing construction.

If wet placement of concrete is anticipated or encountered, do not place Drilled Pier concrete until a concrete placement procedure is approved by the Engineer. If applicable, temporary casings and fluids may be removed when concrete placement is paused or stopped in accordance with the exceptions above provided holes are stable. Remove contaminated concrete from exposed Drilled Pier concrete after removing casings and fluids. If holes are unstable, do not remove temporary casings until a procedure for placing anchor rod assemblies and conduit or constructing grade beams or wings is approved by the Engineer.

Use collars to extend drilled piers above finished grade. Remove collars after Drilled Pier concrete sets and round top edges of piers.

If drilled piers are questionable, pile integrity testing (PIT) and further investigation may be required in accordance with Article 411-5 of the 2018 *Standard Specifications for Roads and Structures*. A drilled pier shall be considered defective in accordance with Subarticle 411-5(D) of the 2018 *Standard Specifications for Roads and Structures* and drilled pier acceptance shall be based in part on the criteria in Article 411-6 of the 2018 *Standard Specifications for Roads and Structures* except for the top of pier tolerances in Subarticle 411-6(C) of the 2018 *Standard Specifications for Roads and Structures*.

If a drilled pier is under further investigation, do not grout core holes, backfill around the pier or perform any work on the drilled pier until the Engineer accepts the pier. If the drilled pier is accepted, dewater and grout core holes and backfill around the pier with approved material to finished grade. If the Engineer determines a pier is unacceptable, remediation shall be required in accordance with Article 411-6 of the 2018 *Standard Specifications for Roads and Structures*. No additional compensation or extension of completion date or time will be allowed for remediation of unacceptable drilled piers or post repair testing.

Permanently embed a plate in or mark top of piers with the pier diameter and depth, size and number of vertical reinforcing bars and the minimum compressive strength of the concrete mix at 28 days.

(B) Footings, Pedestals, Grade Beams and Wings

Excavate as necessary for footings, grade beams and wings in accordance with the plans developed by the Design-Build Team, accepted submittals and Section 410 of the 2018 *Standard Specifications for Roads and Structures*. If unstable, caving or sloughing materials are anticipated or encountered, shore foundation excavations as needed with an approved method. Notify the Engineer when foundation excavation is complete. Do not place concrete or reinforcing steel until excavation dimensions and foundation material are approved by the Engineer.

Construct cast-in-place reinforced concrete footings, pedestals, grade beams and wings with the dimensions shown in the plans developed by the Design-Build Team and in accordance with Section 825 of the 2018 *Standard Specifications for Roads and Structures*. Use forms to construct portions of pedestals and grade beams protruding above finished grade. Provide a chamfer with a 3/4" horizontal width for pedestal and grade beam edges exposed above finished grade. Place concrete against undisturbed soil or backfill and fill in accordance with Article 410-8 of the 2018 *Standard Specifications for Roads and Structures*. Proper compaction around footings and wings is critical for foundations to resist uplift and torsion forces.

(C) Anchor Rod Assemblies

Size anchor rods for design and the required projection above top of foundations. Determine required anchor rod projections from nut, washer and base plate thicknesses, the protrusion of three to five anchor rod threads above top nuts after tightening and the distance of one nut thickness between top of foundations and bottom of leveling nuts.

Protect anchor rod threads from damage during storage and installation of anchor rod assemblies. Before placing anchor rods in foundations, turn nuts onto and off rods past leveling nut locations. Turn nuts with the effort of one workman using an ordinary wrench without a cheater bar. Report any thread damage to the Engineer that requires extra effort to turn nuts.

Arrange anchor rods symmetrically about center of base plate locations as shown in the plans developed by the Design-Build Team. Set anchor rod elevations based on required projections above top of foundations. Securely brace and hold rods in the correct position, orientation and alignment with a steel template. Do not weld to reinforcing steel, temporary casings or anchor rods.

Install top and leveling (bottom) nuts, washers and the base plate for each anchor rod assembly in accordance with the following procedure:

- (1) Turn leveling nuts onto anchor rods to a distance of one nut thickness between the top of foundation and bottom of leveling nuts. Place washers over anchor rods on top of leveling nuts.
- (2) Determine if nuts are level using a flat rigid template on top of washers. If necessary, lower leveling nuts to level the template in all directions or if applicable, lower nuts to tilt the template so the metal pole or upright truss will lean as shown in the plans developed by the Design-Build Team. If leveling nuts and washers are not in full contact with the template, replace washers with galvanized beveled washers.
- (3) Verify the distance between the foundation and leveling nuts is no more than one nut thickness.
- (4) Place base plate with metal pole or upright truss over anchor rods on top of washers. High mount luminaires may be attached before erecting metal poles but do not attach cables, mast arms or trusses to metal poles or upright trusses at this time.
- (5) Place washers over anchor rods on top of base plate. Lubricate top nut bearing surfaces and exposed anchor rod threads above washers with beeswax, paraffin or other approved lubricant.

- (6) Turn top nuts onto anchor rods. If nuts are not in full contact with washers or washers are not in full contact with the base plate, replace washers with galvanized beveled washers.
- (7) Tighten top nuts to snug-tight with the full effort of one workman using a 12" wrench. Do not tighten any nut all at once. Turn top nuts in increments. Follow a star pattern cycling through each nut at least twice.
- (8) Repeat (7) for leveling nuts.
- (9) Replace washers above and below the base plate with galvanized beveled washers if the slope of any base plate face exceeds 1:20 (5%), any washer is not in firm contact with the base plate or any nut is not in firm contact with a washer. If any washers are replaced, repeat (7) and (8).
- (10) With top and leveling nuts snug-tight, mark each top nut on a corner at the intersection of two flats and a corresponding reference mark on the base plate. Mark top nuts and base plate with ink or paint that is not water-soluble. Use the turn-of-nut method for pretensioning. Do not pretension any nut all at once. Turn top nuts in increments for a total turn that meets the following nut rotation requirements:

NUT ROTATION REQUIREMENTS (Turn-of-Nut Pretensioning Method)	
Anchor Rod Diameter, inch	Requirement
$\leq 1 \frac{1}{2}$	1/3 turn (2 flats)
$> 1 \frac{1}{2}$	1/6 turn (1 flat)

Follow a star pattern cycling through each top nut at least twice.

- (11) Ensure nuts, washers and base plate are in firm contact with each other for each anchor rod. Cables, mast arms and trusses may now be attached to metal poles and upright trusses.
- (12) Between four and 14 days after pretensioning top nuts, use a torque wrench calibrated within the last 12 months to check nuts in the presence of the Engineer. Completely erect mast arm poles and cantilever signs and attach any hardware before checking top nuts for these structures. Check that top nuts meet the following torque requirements:

TORQUE REQUIREMENTS	
Anchor Rod Diameter, inch	Requirement, ft-lb
7/8	180
1	270

1 1/8	380
1 1/4	420
≥ 1 1/2	600

If necessary, retighten top nuts in the presence of the Engineer with a calibrated torque wrench to within ± 10 ft-lb of the required torque. Do not overtighten top nuts.

- (13) Do not grout under base plate.

HIGH VISIBILITY TRAFFIC CONTROL DEVICES

(4/17/19)

Description

In accordance with this RFP, the Design-Build Team shall furnish and install high visibility traffic control devices. High visibility traffic control devices include drums, stationary work zone signs and portable work zone signs. All of these devices shall be new. Used devices are not acceptable.

The purpose of high visibility traffic control devices is to enhance the conspicuity of the devices in order to improve both safety and mobility through the work zones. In addition, using new devices helps to ensure they remain in compliance with required retroreflective properties for the full life of the project and to improve the overall appearance of significant work zones throughout the State.

Materials

A) General

Use materials in accordance with the manufacturer's recommendations that will retain both durability and retro-reflectivity as described elsewhere in this project special provision for a period of at least 36 months.

The following are required high visibility traffic control devices to be used for Work Zone Performance applications.

- Drums (Type XI fluorescent orange sheeting)
- Stationary Work Zone Signs
- Rigid Portable Work Zone Signs

All drums shall be new and meet the existing requirements of Section 1089-5 of the 2018 NCDOT *Standard Specifications for Roads and Structures* and shall have Type XI fluorescent orange sheeting that meets the retroreflective requirements of Section 1092-2 of the 2018 NCDOT *Standard Specifications for Roads and Structures*.

All stationary work zone signs shall be new and meet the existing requirements of Section 1089-1 of the 2018 NCDOT *Standard Specifications for Roads and Structures*. Legend overlays are prohibited and shall not be accepted on an interstate / freeway or associated intersecting roadways. Vertical signpost reflector strips shall be added to all stationary sign supports. Use Grade B fluorescent orange for work zone signs and Grade B fluorescent yellow for exit sign supports. Install strips a minimum of 6' in length on sign supports with one sign mounted and a minimum of 4.5' in length for sign supports with two or more signs mounted vertically.

All portable work zone signs shall be new and have composite substrates as described in Section 1089-1 of the 2018 NCDOT *Standard Specifications for Roads and Structures*. The remainder of the existing requirements of Section 1089-1 of the 2018 NCDOT *Standard Specifications for Roads and Structures* remain. Used sign stands are acceptable.

B) Material Qualifications / Certifications

Only use materials as listed above that are on the NCDOT Approved Products List. In addition, provide a Type 3 Material Certification for all materials in accordance with Section 106-3 and Section 1087-4 of the 2018 NCDOT *Standard Specifications for Roads and Structures*.

(C) Performance

Poor performance of any device or sign at any site, whether or not related to a specific contract may be grounds for removing the material from the NCDOT Approved Products List and / or removing from any project under contract.

Construction Methods

All requirements of Section 1110-3 and Section 1130-3 of the 2018 NCDOT *Standard Specifications for Roads and Structures* shall apply except roll up signs are not permitted for use on US or interstate routes. The use of skinny drums is prohibited for any nighttime lane closures on interstates and freeways.

Maintenance

Replace any sign or drum that prematurely fails due to any damage or defect that causes it to perform unsatisfactorily with an "in kind" device of similar quality and age according to the guidelines set forth in the American Traffic Safety Service Association's (ATSSA) Quality Guidelines for Work Zone Traffic Control Devices. An "in kind" replacement sign or drum is not required to be new, however, it shall be less than one year old and have 100% of its original sheeting area and at least 85% of the retroreflective qualities of a new device, so that it is undetectable adjacent to the original devices and signs placed on the project.

SEQUENTIAL FLASHING WARNING LIGHTS

(10/08/2016)

Description

In accordance with this RFP, the Design-Build Team shall furnish and install Sequential Flashing Warning Lights on drums used for merging tapers during nightly work activities on interstates and freeways with speed limits greater than 55 mph and facilities that have significant traffic volumes.

The purpose of these lights is to assist the motorist in determining which direction to merge when approaching a lane closure. It is also designed to reduce the number of late merges resulting in devices being struck and having to be reset to maintain positive guidance at the merge point. The successive flashing of the lights shall occur from the upstream end of the merging taper to the downstream end of the merging taper in order to identify the desired vehicle path.

Materials

The Sequential Flashing Warning Lights shall meet all of the requirements for warning lights within the current edition of the Manual of Uniform Traffic Control Devices (MUTCD).

Each light unit shall be capable of operating fully and continuously for a minimum of 200 hours when equipped with a standard battery set.

Each light in the sequence shall be flashed at a rate of not less than 55 times per minute and not more than 75 times per minute. The flash rate and flash duration shall be consistent throughout the sequence.

Supply a Type 3 Certification (Independent Test Lab results) documenting all actual test results for the specified parameters contained in the Institute of Transportation Engineer's (ITE's) *Purchase Specification for Flashing and Steady Burn Warning Lights*. The laboratory shall also identify all manufacturer codes and part numbers for the incandescent lamp or LED clusters, lenses, battery, and circuitry, and the total width of the light with the battery in place. The complete assembly shall be certified as crashworthy when firmly affixed to the channelizing device.

All Sequential Flashing Warning Lights shall be on the NCDOT Work Zone Traffic Control Approved Products List.

Construction Methods

Sequential Flashing Warning Lights shall be used for nighttime lane closures.

These lights shall flash sequentially beginning with the first light and continuing until the final light.

The Sequential Flashing Warning Lights shall automatically flash in sequence when placed on the drums that form the merging taper.

The number of lights used in the drum taper shall equal the number of drums used in the taper.

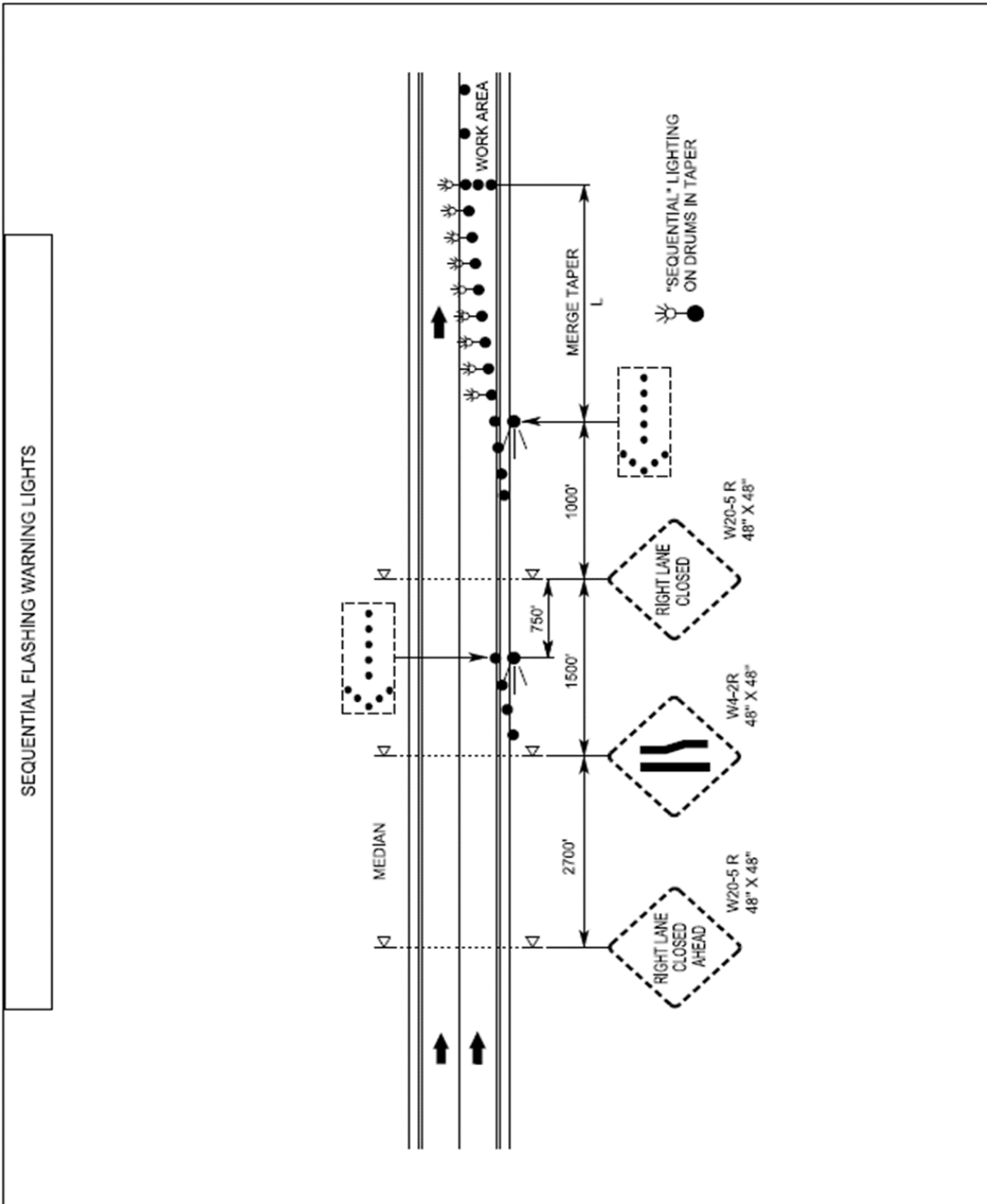
Sequential Flashing Warning Lights shall only be mounted on drums.

The Sequential Flashing Warning Lights shall be weather independent and visual obstructions shall not interfere with the operation of the lights.

The Sequential Flashing Warning Lights shall automatically sequence when placed in line in an open area with a distance between lights of ten to 100 feet. A ten-foot stagger in the line of lights shall have no adverse effect on the operation of the lights.

If one light fails, the flashing sequence shall continue. If more than one light fails, all of the lights shall be automatically turned to the “off” mode. Non-sequential flashing is prohibited.

When lane closures are not in effect, the Sequential Flashing Warning Lights shall be deactivated.



AIR TERMINAL & LIGHTNING PROTECTION SYSTEM

(2018)

1.1. DESCRIPTION

Furnish an air terminal and lightning protection system that is comprised of items meeting UL 96 and UL 467 product standards for lightning protection and installed to be compliant with the National Fire Protection Association 780 Standards for Lightning Protection Systems. The lightning protection system shall consist of, as a minimum, an Air Terminal, vertical Air Terminal Base (wood pole) or Air Terminal Rod Clamps (metal pole), 28-Strand bare-copper lightning conductor, 4-point grounding systems (grounding electrodes), #4 AWG copper bonding conductors, marker tape and other miscellaneous hardware.

1.2 Materials**A. General**

Reference the following Typical Details where applicable:

- CCTV Camera Installation for Metal Pole with Aerial Electrical Service
- CCTV Camera Installation for Metal Pole with Underground Electrical Service
- CCTV Camera Installation for Wood Pole with Aerial Electrical Service
- CCTV Camera Installation for Wood Pole with Underground Electrical Service

B. Wood Pole

Furnish a UL Listed Class II, copper clad minimum 48" long by ½" diameter air terminal. Ensure the air terminal has a tapered tip with a rounded point on one end and is threaded on the connection end with standard Unified Coarse (UNC) 13 threads per inch.

Furnish a copper vertical air terminal base that has internal threading to accept a ½" diameter air terminal with UNC 13 threads per inch. Provide a base that allows for a minimum ¼" mounting hole to secure the base to the vertical side of a wood pole. Ensure the air terminal base includes (2) 5/16" cap screws to secure the bare copper lightning conductor.

Additionally, provide (2) ½" copper tube straps (conduit clamps) to secure the air terminal and bare copper lightning conductor to the pole.

C. Metal Pole

Furnish a UL Listed Class II, stainless steel minimum 48" long by ½" diameter air terminal with a tapered tip with a rounded point on one end. No threading is required on the opposing end.

Furnish an air terminal rod clamp manufactured out of 304 stainless steel. Ensure the air terminal rod clamp has two horizontal support arms that are 2" wide by 3/16" thick and design to offset the air terminal approximately 8" away from the metal pole. Ensure the support arms at the point where the air terminal is to be installed has an internal crease to secure the air terminal along with four (4) bolts to provide the clamping action between the two support

arms. Provide two (2) stainless steel banding clamps to secure the air terminal rod clamp's base plate to the metal pole.

D. Copper Lightning Conductor and Ground Rods

Furnish a Class II rated copper lightning conductor which consists of 28 strands (minimum) of 15 AWG copper wires to form a rope-lay bare copper lightning conductor. Furnish 5/8" diameter, 10-foot-long copper-clad steel ground rods with a 10-mil thick copper cladding to serve as an integral part of the 4-point grounding system. Furnish irreversible mechanical clamps to secure the 28-strand lightning conductor, #4 AWG bare copper ground wires and grounding electrodes together to complete the grounding system.

1.3 Construction Methods

A. Wood Pole

Install the vertical air terminal base approximately 12" below the top of the wood pole and install the air terminal to the threaded connection on the base. Install a 1/2" copper tube strap (conduit clamp) over the air terminal, 6" from the top of the pole. Additionally, secure the copper lightning conductor under both 5/16" diameter cap screws located on the base. Install an additional 1/2" copper tube strap (conduit clamp) over the bare copper lightning conductor, 6" below the air terminal base. Locate the 1/4" mounting hole on the vertical air terminal base and install a 1/4" by 3" (minimum) long lag bolt through the base and into the wood pole to support the air terminal assembly.

Route the bare copper lightning conductor to maintain maximum horizontal separation from any risers that traverse up the pole. Secure the bare copper lightning conductor to the pole on 24" centers using copper cable clips. From the bottom of the pole (ground level) install a 2" by 10' long PVC U-Guard over the bare copper lightning conductor to protect the cable from vandalism.

B. Metal Pole

Install two (2) stainless steel air terminal rod clamps to the side of the metal pole structure starting at 6" below the top of the pole with the second air terminal clamp 12" from the top of the pole (approximately 6" of separation between the 2 clamps). Secure each air terminal rod clamp to the pole structure with two (2) stainless steel banding clamps. Install the air terminal between the horizontal support arms on each air terminal rod clamp and tighten the bolts to provide a secure connection.

C. Copper Lightning Conductor and Ground Rods

Install the 4-point grounding system by installing a central grounding electrode that is surrounded by a minimum of three (3) additional grounding electrodes spaced approximately 20 feet away from the central grounding electrode and approximately 120 degrees apart. Interconnect each grounding electrode using a #4 AWG bare copper conductor back to the central grounding electrode using irreversible mechanical crimps. Additionally, using an irreversible mechanical crimp, connect the bare copper lightning conductor to the central grounding electrode. Install each grounding electrode and its corresponding #4 AWG bare copper grounding wire and 28 strand copper lightning

conductor such that the wires are 24” below grade. Install marker tape 12” below grade and above all grounding conductors.

In instances where right-of-way does not allow for ground rod spacing as required above, reference the 2018 Roadway Standard Drawings - Section 1700.02 “Electrical Service Grounding” for “Limited Shoulder” or “Restricted Space” installation alternatives.

Prior to connecting the lightning protection system to an electrical service, perform a grounding electrode test on the lightning protection system to obtain a maximum of 20 ohms or less. Install additional grounding electrodes as need to obtain the 20 ohms or less requirement. The grounding electrode resistance test shall be verified or witnessed by the Engineer or the Engineer’s designated representative.

Follow test equipment’s procedures for measuring grounding electrode resistance. When using clamp-type ground resistance meters, readings of less than one ohm typically indicate a ground loop. Rework bonding and grounding circuits as necessary to remove ground loop circuits and retest. If a ground loop cannot be identified and removed to allow the proper use of a clamp-type ground resistance meter, use the three-point test method. Submit a completed inductive Loop & Grounding Test Form available on the Department’s website.

1.4 Measurement and Payment

No measurement will be made for furnishing and installing the “Air Terminal and Lightning Protection System” as this will be considered incidental to “CCTV Metal Pole” & “CCTV Wood Pole” installations.

OBSERVATION PERIOD

(2018)

30-Day Observation Period

The 30-Day Observation Period shall be considered part of the work to be completed by the project completion date.

Upon successful completion of all work the 30-day Observation Period may commence. Examples of project work includes but is not limited to:

- Installation of all project devices and communications infrastructure.
- Field Acceptance Testing of all devices.
- Central System Testing of all devices and network communications.
- Correction of all deficiencies and punch list items. (including minor construction items)

This observation consists of a 30-day period of normal, day-to-day operations of the field equipment in operation with new or existing central equipment without any failures. The purpose

of this period is to ensure that all components of the system function in accordance with the Plans and these Project Special Provisions.

Respond to system or component failures (or reported failures) that occur during the 30-day Observation Period within twenty-four (24) hours (one business day). Correct any failures within forty-eight (48) hours (two business days, includes time of notification). Any failure that affects a major system component as defined below for more than forty-eight (48) hours will suspend the timing of the 30-day Observation Period beginning at the time when the Contractor is notified that the failure occurred. After the cause of such failures that necessitate a redesign of any component or a failure in any of the major system components exceeding a total of three (3) occurrences will terminate the 30-day Observation Period for that system. The 30-day Observation Period will be restarted from day zero when the redesigned components have been installed and/or the failures corrected. The major system components are:

- CCTV Cameras and Central Operations
- Dynamic Message Sign (DMS) and Central equipment/Operations
- Portable Changeable Message Sign (PCMS)
- Communications infrastructure (examples: Fiber, Radios, Ethernet Switches, Core Switches, etc.)
- Any other ITS Devices not named above (examples: DSRC radios, Radar and Out-of-Street Detection, signals, etc.)

Final Acceptance

Final system acceptance is defined as the time when all work and materials described in the Plans and these Project Special Provisions have been furnished and completely installed by the Contractor; all part of the work have been approved and accepted by the Engineer; and successful completion of the 30-day Observation Period.

The completed System will be ready for final acceptance upon the satisfactory completion of all acceptance tests as detailed in their respective Section of the Project Special Provisions; the recertification all punch-list discrepancies; and the submittal of all project documentation including as-built plans.

JUNCTION BOXES (LIMITED ACCESS FACILITIES)

1.1 DESCRIPTION

Furnish and install junction boxes with covers, graded stone, concrete collar, and all necessary hardware in accordance with the plans and specifications. Comply with the provisions in the “Limited Access Facilities” junction box typical detail drawing.

Provide Electronic Marking Balls to aid in locating buried junction boxes.

1.2 MATERIALS

A. General

Refer to Division 8 and 10 of the 2018 *Standard Specifications for Roads and Structures*.

Item	Section
Incidental Concrete Construction	825
#57 or #67 Washed Stone	1005
Portland Cement Concrete Production and Delivery	1000
Reinforcing Steel	1070

Furnish material, equipment, and hardware under this section that is pre-approved on the ITS and Signals QPL.

B. Junction Box

Provide junction boxes with at least two size 3/8-inch diameter stainless steel hex head cover bolts to match inserts in the box. Ensure junction boxes are provided with open bottoms. Provide vertical extensions of 6 inches to 12 inches as required by project provisions.

Provide the required logo on the cover. Provide pull slot(s) with stainless steel pin(s).

Provide third party certification that the junction boxes and covers meet ANSI/SCTE 77 2013 and Tier 22 loading. Provide certification that testing methods are compliant with ANSI/SCTE 77 2013.

Provide standard size junction boxes and covers with minimum outside dimensions of 18" (l) x 11" (w) x 12" (d). Provide a cover embossed with the following wording "NCDOT Electrical".

Provide oversized junction boxes and covers with minimum outside dimensions of 30" (l) x 17" (w) x 24" (d) for installing only drop cable.

Provide special oversized junction boxes and covers with minimum outside dimensions of 48" (l) x 30" (w) x 36" (d) where underground fiber-optic splice enclosures and truck line conduits are to be installed or as directed by the plans.

Provide additional oversized junction boxes and covers as identified in the plans where underground fiber-optic splice enclosures and conduit requirements may require a junction box that is larger than what is listed above. Boxes of this nature can be supplied with a cover that is of a single or split cover design, but boxes with a split cover may be supplied with a center brace to support the cover/lid.

For oversized and special oversized junction boxes, provide a cover embossed with the following wording "NCDOT Fiber Optic". Additionally, for junction boxes designated for

fiber optic cable, furnish an access point/hatch on the lid to allow access to the tracer wire bonding/isolation test switch that is located inside the junction box (See “Tracer Wire Bonding/Isolation Test Switch” requirements below).

For oversized and any special oversized junction boxes, provide junction boxes with mouse holes or knock-outs fabricated in the sides to accommodate conduit entrances. Boxes fabricated without mouse holes or knock-outs shall be approved by the manufacturer for field drilling conduit entrance holes. Consult the manufacturer to identify the amount of surface area that can be removed for field drilling conduit entrance holes without violating the boxes structural integrity. Upon request, provide written approval from the manufacturer stating their recommendations.

C. Electronic Marker Ball

Furnish an electronic marking ball, with a minimum life expectancy of 15 years and that are locatable when buried up to 5 feet deep to aid in locating buried Junction Boxes. Ensure the marking ball is designed to be self-leveling to provide precise horizontal positioning of the marker ball electronics (internal passive antenna) once installed in a junction box. Ensure the marker balls are compatible with a Metro Mark - Passive Marker Locator Model #760DX or approved equivalent and are tuned to the following frequencies:

Orange Ball – 101.4 KHz - Fiber Installations

Red Ball – 169.8 KHz – Power Cable Installations

D. Tracer Wire Bonding/Isolation Test Switch

For all junction boxes designated for “communications cable”, furnish as an integral part of the junction box assembly, a tracer wire access testing port via a retractable mechanism that allows easy access to the tracer wire system through a Bonding/Isolation switch. Ensure the Bonding/Isolation switch can be accessed through a small hatch located in the lid of the junction box. The hatch should be designed into the lid and secured via a security bolt. The Bonding/Isolation switch must be retractable so it can be accessed without removing the lid of the junction box. The Bonding/Isolation switch shall include a minimum of (5) termination lugs for trace wires and (1) lug for grounding. Once the Bonding/Isolation switch is moved via the retractable mechanism, ensure the switch can be disengage effectively breaking the bond and allowing individual isolation of tracer wire circuits for locating. Ensure the Bonding/Isolation switch on the retractable mechanism is mounted in a location on the interior wall of the junction box which will not interfere with the installation or removal of the lid. When the Bonding/Isolation switch is pushed back down via the retractable mechanism, the Bonding/Isolation switch shall automatically return to a closed or bonded position.

Furnish a 5/8” * 10’, copper clad, ground rod to be driven inside the junction box.

1.3 CONSTRUCTION METHODS

(A) Junction Boxes

Install standard size junction boxes as shown in the plans. When lateral runs for electrical cables are greater than 150 feet, install additional junction boxes to ensure distances between junction boxes does not exceed 150 feet.

Install oversized junction boxes and any special oversized junction boxes at maximum intervals of 1500 feet unless otherwise stated in the plans.

Backfill beneath and around the boxes using #57 or #67 washed stone in conformance with Section 1005 of the 2018 *Standard Specifications for Roads and Structures*. Backfill beneath the box a minimum of 12-inches and around the exterior of the box a minimum of 3 inches.

Avoid placing junction boxes on slopes of 3:1 or greater.

(B) Concrete Collar

Install a reinforced concrete collar that complies with Section 825 “Incidental Concrete Construction” and extends 12 inches for the edge of the junction box and 8 inches deep. Ensure the reinforcing of the concrete collar consist of two rectangular hoops of #4 rebar tied in the corners. Provide minimum Class B concrete. Fill construction joints between the junction box and the concrete with an expansion joint filler. Ensure concrete collar is installed flush with grade.

(C) Junction Box Installation Requirements

For all junction boxes designated to carry fiber optic communications cable or electrical services, installed the junction box based on its location as listed below:

Communications

- 1) Junction box located at the top of a ramp or within 6 feet of an equipment cabinet:
Install the junction box flush with the surrounding grade with the required concrete collar.
- 2) Junction box located other than at the top of a ramp or within 6 feet of an equipment cabinet:
Install the junction box so that the top of the box falls 6-inches to no more than 8-inches below the surrounding grade. These junction boxes do not require a concrete collar.

Electrical Service

- 1) Junction box located at the bottom of a service pole or within 6 feet of an equipment cabinet or service disconnect:
Install the junction box flush with the surrounding grade with the required concrete collar.

- 2) Junction box located other than at the bottom of a service pole or within 6 feet of an equipment cabinet or service disconnect:
Install the junction box so that the top of the junction box falls 6-inches to no more than 8-inches below the surrounding grade. These junction boxes do not require a concrete collar

(D) Electronic Marker Ball

Install the appropriate colored Marker Ball in each junction box upon completion of the junction box installation. Test to ensure that the Marker Ball is functioning properly with the approved electronic locator device. Record precise latitudinal and longitudinal coordinates for the location of each locate ball/junction box. See “GPS Coordinates” requirements below.

(E) Tracer Wire Bonding/Isolation Switch

For all junction boxes designated for communications cable, install a ground rod (5/8” * 10’, copper clad) in the junction box and secure a minimum of five feet of #14 AWG THWN, green insulated, 19-strand copper tracer wire to the ground rod using an approved bonding clamp. Secure the opposing end of the tracer wire to the main bonding lug located on the Bonding/Isolation switch. Test ground rod resistance to obtain 20 ohms or less reading, install one (1) additional ground rod if the 20 ohms or less reading is not achieved.

Secure all tracer wires that originate from the same side of the junction box together using a gel-filled wire nut along with a minimum of five feet slack Green, #14 AWG, THWN tracer wire to form a connection to one of the termination ports on the Bonding/Isolation switch. Provide a permanent nylon tag to the tracer wire jumper close to the tracer wire terminal port that identifies the direction of the tracer wire system as it leaves the junction box. Use a black indelible ink pen or other approved method, to label the nylon tag.

No splices of tracer wires are allowed outside of the interior portion of the junction box, unless approved by the Engineer. If external splices are necessary, use lockable connectors specifically manufactured for use in underground tracer wire systems. Connectors shall use a dielectric silicon filled compartment to seal out moisture and corrosion and shall be installed in a manner to prevent any uninsulated wire exposure. Gel-filled wire nuts are not acceptable for making splices outside of the junction box.

Upon completion and in the presence of the Engineer or the Engineer’s representative, test all legs of the tracer wire system using a tuned frequency transmitter and locator to ensure the tracer wire system forms a complete and operational system.

(F) GPS Coordinates

Provide real world coordinates for all junction boxes and equipment cabinets installed or used 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

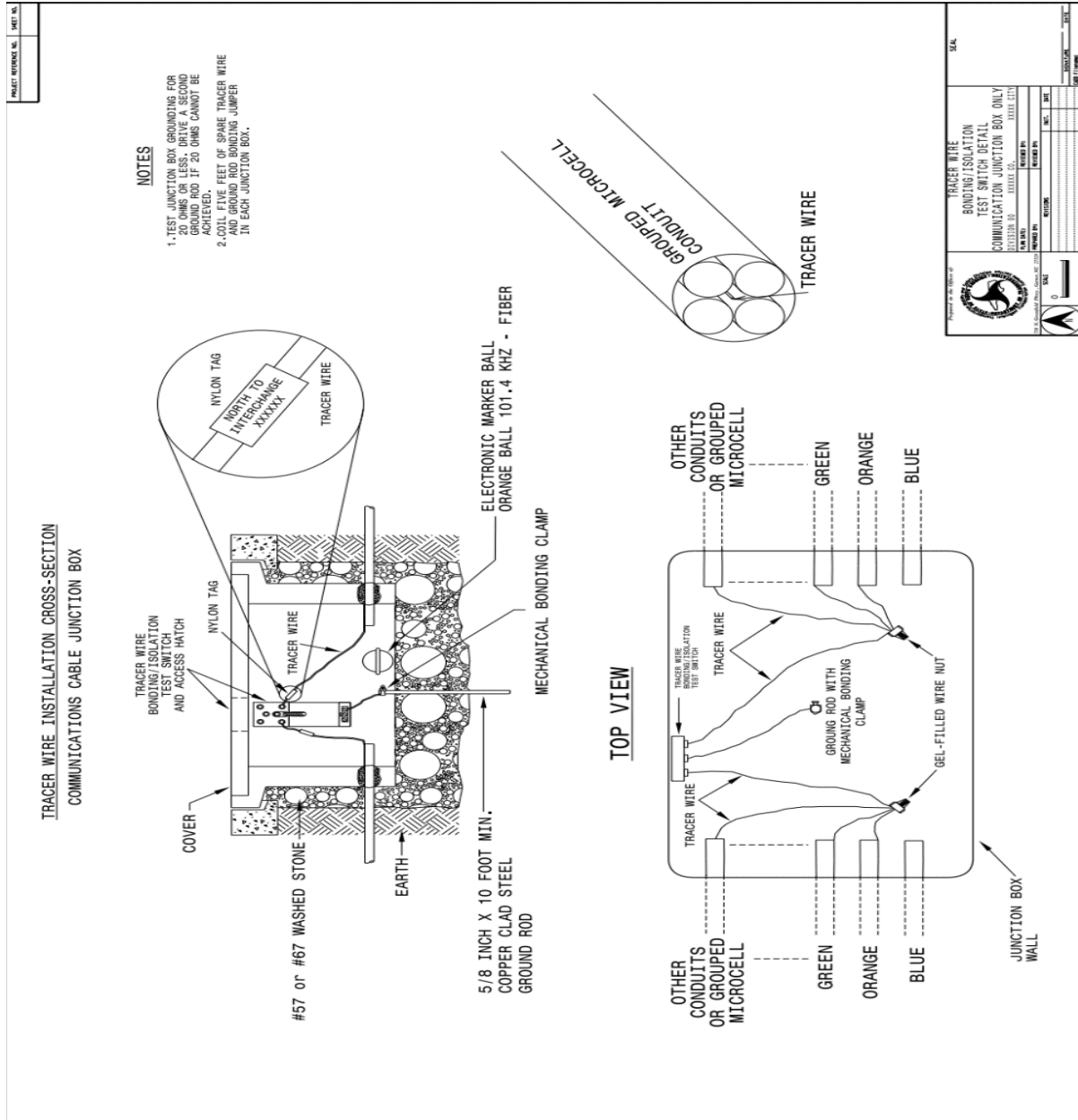
within these tolerances may be used. Submit cut sheets on the GPS unit proposed to collect the data for approval by the Engineer.

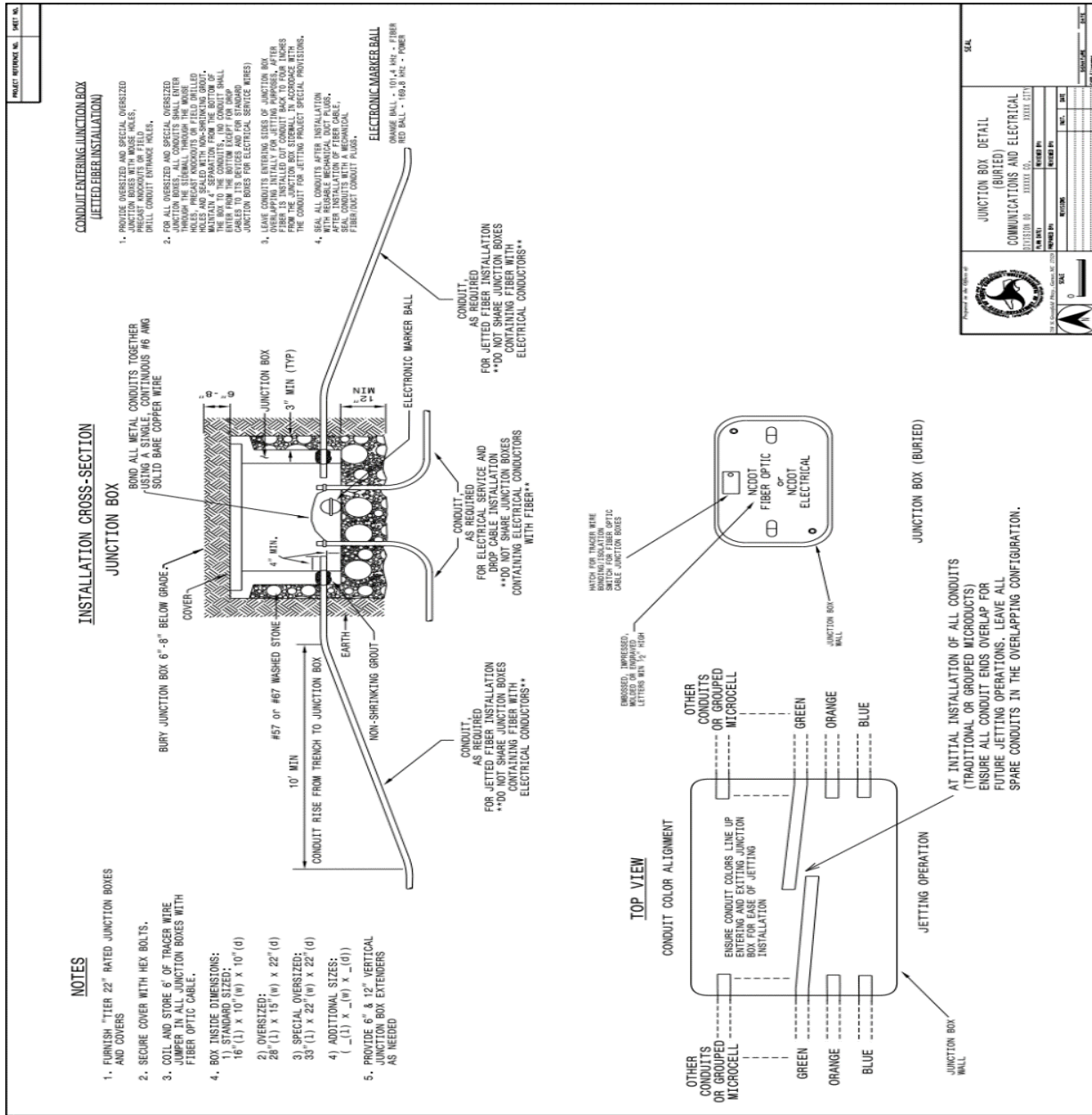
Provide a digital copy of all information regarding the location (including, but not limited to, manufacturer, model number, and NCDOT inventory number) in the Microsoft® spreadsheet shown by example below. Provide this information to the Engineer and the NCDOT ITS (TSMO) Unit.

NCDOT Inv #	Name	Location	Latitude	Longitude	Manufacturer	Model #
05-0134	Equipment Cabinet	US 70 at Raynor Rd./ Auburn-Knightdale	-78.5500	35.6873	McCain	Type-332
05-0134	Junction Box # 1 (Phase 2 Side)	US 70 at Raynor Rd./ Auburn-Knightdale	-78.5516	35.6879	Quazite	PG1118BA12(Box) PG118HA00(Cover)
05-0134	Junction Box # 2 (Phase 2 Side)	US 70 at Raynor Rd./ Auburn-Knightdale	-78.5506	35.6876	Quazite	PG1118BA12(Box) PG118HA00(Cover)
05-0134	Junction Box # 3 (Near Cabinet)	US 70 at Raynor Rd./ Auburn-Knightdale	-78.5501	35.6873	Quazite	PG1118BA12(Box) PG118HA00(Cover)
05-0134	Junction Box # 4 (Phase 6 Side)	US 70 at Raynor Rd./ Auburn-Knightdale	-78.5486	35.6873	Quazite	PG1118BA12(Box) PG118HA00(Cover)
05-0134	Junction Box # 5 (Phase 6 Side)	US 70 at Raynor Rd./ Auburn-Knightdale	-78.5493	35.6876	Quazite	PG1118BA12(Box) PG118HA00(Cover)
05-0134	Junction Box # 6 (Phase 4 Side)	US 70 at Raynor Rd./ Auburn-Knightdale	-78.5503	35.6879	Quazite	PG1118BA12(Box) PG118HA00(Cover)

1.4 MEASUREMENT AND PAYMENT

No measurement will be made of covers, graded stone, ground rods, tracer wire bonding/isolation switch, tracer wire jumpers, or tracer wire testing as these will be incidental to furnishing and installing junction boxes.





- Meets ANSI/TIA 568C.2 Networking Standard
- Supports 10/100/1,000/10,000Mbps
- 1,000Mbps @ 300 Meter Cable Length
- 10,000Mbps @ 50 Meter Cable Length
- 4 twisted pair cables
- 23 AWG (minimum) solid bare copper conductors (Copper clad aluminum is not allowed)
- 2+ twists per centimeter
- Nylon Spline to reduce cross talk
- Gel Filled High-density polyethylene insulation, PVC jacket
- Ascending / Descending Sequential Foot Markings
- Compliant with EIA/TIA standards
- UL/CSA listed
- UV Stabilized PE Jacket
- Meets the following Minimum Electrical Operating Characteristics:
 - Frequency Bandwidth: 1 – 250 MHz
 - Attenuation (Insertion Loss): 19.8 dB
 - Characteristic Impedance: 100 Ohms +/- 15
 - Near-End Cross Talk - NEXT (Min.): 44.3 dB
 - Power Sum Near-End Cross Talk PS-NEXT (Min.): 42.3 dB
 - Equal-Level Far End Crosstalk (ELFEXT): 27.8 dB
 - Power Sum Equal-Level Far End Crosstalk (PS-ELFEX): 24.8 dB
 - Return Loss: 20.1 dB
 - Delay Skew: 45 ns
 - Connector Type: RJ45

The Ethernet cable must be factory tested on reels for each pair's mutual capacitance, crosstalk loss, insulation resistance, and conductor resistance. Furnish the Engineer with a certified factory report for each reel showing compliance with these Project Special Provisions, the factory test results, and the manufactured date of the cable. The contractor shall not use Ethernet cable manufactured more than one year before the date of installation.

Provide RJ-45 connectors with gold conductors that are terminated according to EIA/TIA 568 standards. Provide connectors with eight contacts. Furnish connectors appropriately rated for the cable being installed.

Ethernet patch cables used to interconnect equipment inside of a cabinet or equipment rack shall be factory terminated. Ethernet cables which run outside of the cabinet may be field terminated. Ethernet cables installed inside of buildings to interconnect switching rack equipment shall bear the Low Smoke/Zero Halogen (LSZH) designation. Ethernet cables installed inside of buildings and passes from one equipment room to another may be field terminated. For Ethernet patch cables used to connect equipment inside an equipment rack cabinet provide factory preterminated jumpers that minimize excessive slack that must be dressed inside the cabinet but provides sufficient slack to make neat runs.

1.3 CONSTRUCTION METHODS

Install Ethernet cable in conduits, cabinets, junction boxes, risers, and on aerial messenger cable at locations shown in the Plans. Allow a minimum of 10 feet of cable slack in the cabinet.

Ethernet cables shall not be spliced. Ethernet cables should not exceed lengths of 100 meters or 328 feet. In cases where the Ethernet cables exceed lengths of 100 meters or 328 feet a signal regenerator or Ethernet extender shall be used. All Ethernet cables shall be labeled with waterproof, smear resistant labels. The labels shall denote the equipment cabinets or housing they are routed from and the device and device identifier they are connected to.

The contractor shall not exceed 80 percent of the manufacturer's maximum pulling tension when installing underground Ethernet cable. Use a clutch device (dynamometer) so as not to exceed the allowable pulling tension if the cable is pulled by mechanical means. Do not use a motorized vehicle to generate cable-pulling forces.

Keep tension on the cable reel and the pulling line at the start of each pull. Do not release the tension in the cable if the pulling operation is halted. Restart the pulling operation by gradually increasing the tension until the cable is in motion.

1.4 MEASUREMENT AND PAYMENT

No measurement will be made for Ethernet Cable, Patch Cables, extenders, terminating and testing of the cable, connectors or cable identification markers as these will be considered incidental to the installation of the devices installed under this project.

HUB CABINET

1.1 DESCRIPTION

Furnish and install air-conditioned hub cabinets, hub cabinet base extenders, hub cabinet foundations and all necessary hardware as described herein. Size the cabinet appropriately to fit all the equipment and to allow for 25% free space available after all equipment is installed. Size the cabinet to ensure ease of access to equipment and provide proper ventilation in order to maintain an internal operating environment that does not exceed the environmental operating ranges for devices placed within the cabinet.

1.2 MATERIALS

A. Hub Cabinet

1. Standards

Ensure that the hub cabinets comply with the following standards:

- ANSI;
- ASTM;
- IMSA ;
- ISO 9001;
- NEC;
- NEMA TS-2; and
- UL listed.

2. Functional

Furnish Caltrans Type 340 base-mounted hub cabinets meeting the following minimum requirements:

- Side-by-side, double doors on both front and rear of cabinet.
- Fiber-optic interconnect centers (paid separately).
- Grounding bus bar.
- 19-inch rack system for mounting of all devices in the cabinet.
- Pull-out shelf for laptop and maintenance use.
- Maintenance access connections.
- LED lighting.
- Ventilation fans.
- 120VAC power supply.
- 120VAC ground fault circuit interrupter (GFCI)-protected duplex outlets for tools.
- 120VAC surge-protected duplex outlets for equipment.
- Sunshields constructed of light gauge aluminum that sit approximately one inch above the surface of the cabinet on all sides, including doors.
- Lightning and surge protection on incoming and outgoing electrical lines (power and data).
- Managed Ethernet switch (provided by DIT).
- Door status sensors compatible with provided Managed Ethernet switches
- Power strip along vertical rail.
- HVAC system to maintain optimal temperature and humidity for the Ethernet hub switches and other powered electronics in the cabinet.
- UPS with sufficient capacity to hold hub's electrical load (minus the HVAC) for 4 hours. Cabinet AC system will not be connected to the UPS.

3. Physical Features

Provide cabinets that are completely weatherproof to prevent the entry of water. Provide cabinet and door exterior seams that are continuously welded, and all exterior welds are smooth. Provide cabinets with four full-size doors with full-length stainless-steel piano hinges, with stainless steel pins spot-welded at the top. Provide hinges that utilize stainless steel hinge pins. Provide hinges that are mounted so that they cannot be removed from the door or cabinet without first opening the door. Provide door and hinges braced to withstand a 100-pound per vertical foot of door height load applied vertically to the outer edge of the door when standing open. Ensure that there is no permanent deformation or impairment of any part of the door or cabinet body when the load is removed. Provide cabinet door fitted with a #2 Corbin lock. Provide two keys for each cabinet. Provide cabinet doors that are also pad lockable. Provide door openings that are double flanged on all four sides.

Provide cabinets constructed of unpainted sheet aluminum alloy H5052-H32 with a minimum thickness of 0.125 inch.

Provide the hub cabinet with sunshields outside to deflect solar heat away from the cabinet. The sunshields must be offset a minimum of one inch from the exterior cabinet walls. Ensure that the sunshields are fabricated from 5052-H32 aluminum sheet that is

0.125-inch-thick, and that sunshield corners are rounded and smoothed for safety. Mount the sunshields on standoffs on the top and on each side of the cabinet including the doors.

Provide doorstops at 90 and 180-degree positions. Ensure that both the door and the doorstop mechanism are of sufficient strength to withstand a simulated wind load of five pounds per square foot of door area applied to the both inside and outside surfaces without failure, permanent deformation, or compromising of door position and normal operation. Do not provide auxiliary police doors.

Ensure that cabinet doors include a gasket to provide a dust and weather-resistant seal when closed. Ensure that the gasket material is closed-cell neoprene and maintains its resiliency after exposure to the outdoor environment. Ensure that the gasket shows no sign of rolling or sagging and provide a uniform dust and weather-resistant seal around the entire door facing.

Provide door alarms for all 4 doors that are compatible with the hub switches to be provided and installed by DIT. Door alarms should send a network alert to the switch when a hub cabinet door is opened or if the door alarm fails or is tampered with. Coordinate with the Engineer and DIT for hub switch model information.

Provide cabinets that include predrilled holes of standard diameter and bolt pattern with four (4) anchor bolts with each cabinet unit as part of the unit price bid. Provide a panel with each cabinet that matches the rest of the cabinet; and is held in place by four bolts provided with the panel. Drill or punch the panel to accommodate the bolts; the drill holes shall match the bolt pattern of the base cabinet of the cabinet. Provide a panel designed to be fitted in the interior of the cabinet and fabricated of the same material and thickness as the cabinet bottom.

Provide rails to create a cage to mount hardware, wiring panels and miscellaneous mounting brackets. Provide rails constructed of .1345-inch steel or .105-inch stainless steel. Provide rails with a keyhole design with slots 2 inches on center with a top opening of 5/8 inch in diameter to allow the insertion of a .625-inch by 1-inch carriage bolt. Ensure that the rails are 1.5 to 2 inches wide by .5 inches deep. Drill and tap the rails for 10-32 screws or rack screws with EIA universal spacing.

Provide rack assemblies that have a removable, standard 19-inch EIA compliant rack. The rack shall have a clearance between the rails of 17.5 inches.

Equip each cabinet with an aluminum storage compartment mounted in the rack assembly with the following dimensions (± 0.5 inch): 16 inches wide, 14 inches long, and 1.75 inches deep. Provide compartment with ball-bearing telescoping drawer guides to allow full extension from the rack assembly. Ensure that when extended, the storage compartment opens to provide storage space for cabinet documentation and other miscellaneous items. Ensure that the storage compartment is of adequate construction to support a weight of 20 pounds when extended without sagging. Provide a top to the storage compartment that is hinged aluminum. Provide two (2) removable metal shelves with each cabinet.

Furnish a cabinet base extender with each hub cabinet that complies with the requirements of the "Cabinet Base Adapter and Base Extender" section of these Project Special Provisions.

Install an external generator connection port on the side of the cabinet opposite the air conditioning unit. Port should be designed and sized for the appropriate electrical requirements of the cabinet.

4. Lighting

Provide the field cabinet with four LED lamps (one above each door) and clear shatterproof shield assemblies which are mounted on the inside front and rear top of the cabinet. Ensure that these lamps are unobstructed and able to cast light on the equipment. Equip the field cabinet with door-actuated switches so that the lamps automatically turn on when any cabinet door is opened and go off when all the doors are closed.

5. Electrical

Provide a service panel assembly to function as the entry point for AC power to the cabinet and the location for power filtering, transient suppression, and equipment grounding. Provide AC isolation within the cabinet. Configure cabinet to accept 120 VAC from the utility company.

Provide circuit breakers that meet the NEC requirements, are UL listed and have an interrupt capacity of 5,000 amperes and insulation resistance of 100 M Ω at 500 VDC. Provide the hub cabinet with a main circuit breaker sized according to the NEC. Use appropriately sized branch circuit breakers to protect the electronics in the hub cabinet. Provide a dedicated branch circuit for each of the following items:

- HVAC
- Lighting
- Receptacles
- Ventilation fan
- One circuit per rack
- Others as needed.

Provide UL listed surge protection devices according to the UL 1449, 2nd edition standard that comply with the NEMA requirements as detailed in the NEMA LS 1 (1992) standard.

Provide branch circuits, surge protection devices, and grounding for the connected load served by the cabinet, including ventilation fans, internal lights, electrical receptacles, etc., as shown on the Plans.

Furnish a power distribution assembly that fits in the EIA 19-inch rack and provides for protection and distribution of 120VAC power.

Ensure that ground bus bars are fabricated from a copper alloy material compatible with copper wire. Use ground bus bars that have at least two positions where a #6 AWG stranded copper wire can be attached.

Mount the ground bus bar on the side of the cabinet wall adjacent to the service panel assembly for the connection of AC neutral wires and chassis ground wires. If more than

one ground bus bar is used in a cabinet, use a minimum of a #10 AWG copper wire to interconnect them.

Provide a detailed plan for power distribution within the cabinet. Label all breakers and conductors with size and loads. Have the plans signed and sealed by a registered PE and submit the plans for review and approval.

6. Ventilation

Ensure the cabinet assembly can maintain the temperature and humidity within the environmental requirements of the hub switches and other powered electronics in the cabinet.

Include two cooling fans with 100 CFM, minimum capacity. Provide thermostats to be incorporated into the ventilation system. Mount fans in the top of the cabinet.

Provide the cabinets with vent openings in the lower portion of the door to allow convection cooling of electronic components. Cover them fully on the inside with a commercially available disposable three-layer graded type filter. All air entering the cabinet must pass through the air filter.

7. Air Conditioner

Furnish each hub cabinet with a rack mounted air-cooled air conditioner that operates on 120VAC. The air conditioner shall be fit within a 19-inch EIA communications rack and shall not be external mounted on the cabinet. The air conditioner shall be mounted in the bottom of the cabinet to avoid damage to any communications equipment.

The air conditioners shall have a built-in condensate evaporator and condensate drain fitting and hose that is plumbed to the outside of the cabinet. The air conditioner shall be rated for a minimum of 3500 BTU. There shall be low temperature control to prevent overcooling.

Provide EMI/RFI transient spike protection. Equip the cabinet and air conditioner with remote monitoring of high temperature and low airflow conditions. Intake air shall enter through cabinet door vent and be exhausted through top cabinet vents. Air conditioners shall be CFC free or low ODP (R-22) refrigerant and shall use closed loop cooling. Insulate all cold components (coolant lines, compressor, evaporator, etc.) with high-performance insulation.

Blower motors shall be UL listed. Ensure the blower motors are equipped with automatic reset thermal overload protection. Provide double sealed and double shielded ball bearings.

The air conditioners shall have permanent corrugated aluminum or stainless steel air filters. The filters shall be removable and washable.

All grilles shall be stainless steel.

B. Hub Cabinet Base Extender

Fabricate hub cabinet base extenders from the same materials and with the same finish as the hub cabinet housing. Fabricate base extender in the same manner as hub cabinets, meeting all

of the same applicable specifications called for in these project special provisions. Provide cabinet base extenders with a height of at least 8 inches.

C. Hub Cabinet Foundation

Furnish either poured concrete hub cabinet foundations or preformed hub cabinet foundations. Obtain approval of foundation type from the engineer.

Comply with Section 1000-4 of the *2018 Standard Specifications for Road and Structures*.

Provide hub cabinet foundations with a minimum pad area that extend 24 inches from the front and back of the hub cabinet and 3 inches from the sides of the cabinet.

On the same side as the cabinet generator hookup, cast a three inch inside width galvanized steel U-bolt into the cabinet foundation. A minimum of four inches of the U-bolt shall be cast into the concrete and a minimum of three inches of the U-bolt shall be exposed for securing a generator to the foundation.

Furnish hub cabinet foundations with chamfered top edges. Provide minimum class B concrete.

Provide preformed hub cabinet foundations with 7" (L) x 18" (W) minimum opening for the entrance of conduits. For precast hub cabinet foundations, include steel reinforcement to ensure structural integrity during shipment and placing of item. Include four ¾ inch coil thread inserts for lifting. Comply with Article 1077-16 of the *2018 Standard Specifications for Road and Structures*.

D. Hub Cabinet UPS

Furnish and install one rack mounted UPS in each new cabinet.

Furnish UPS with external temperature monitoring that will shut off when running on battery power and the maximum operating temperature for the hub switch is reached.

Install UPS with RJ-45 ethernet network monitoring ports that can be disabled via the UPS software/firmware.

UPS shall meet the following minimum specifications:

Output

Output Power Capacity	480 Watts / 750 VA
Max Configurable Power	480 Watts / 750 VA
Nominal Output Voltage	120V
Output Voltage Distortion	Less than 5% at full load
Output Frequency (sync to mains)	57 - 63 Hz for 60 Hz nominal
Crest Factor	up to 5:1
Waveform Type	Sine wave
Output Connections	(4) NEMA 5-15R

Input

Nominal Input Voltage	120V
Input Frequency	50/60 Hz +/- 3 Hz (auto sensing)
Input Connections	NEMA 5-15P
Cord Length	6 feet
Input voltage range for main operations	82 - 144V
Input voltage adjustable range for mains operation	75 -154 V

Battery Type

Maintenance-free sealed Lead-Acid battery with suspended electrolyte, leak-proof.

Typical recharge time	2 hours
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Communications & Management

Interface Port(s)	RJ, 45, DB-9 RS-232, USB
Control panel battery	LED status display with load and bar-graphs

Surge Protection and Filtering

Surge energy rating	480 Joules
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Environmental

Operating Environment	-32 - 104 °F
Operating Relative Humidity	0 - 95%
Storage Temperature	5 - 113 °F
Storage Relative Humidity	0 - 95%

Conformance

Regulatory Approvals	FCC Part 15 Class A, UL 1778
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1.3 CONSTRUCTION METHODS**A. Hub Cabinet**

Ensure all cabinet wiring is tagged and identified using insulated pre-printed sleeves and follows the project's cable identification scheme. Ensure that the wire markers identify usage in plain words with sufficient details without abbreviations or codes.

Use stranded copper for all conductors, including those in jacketed cables and solid copper for all grounding. Neatly arrange all wiring, firmly lace or bundle it, and mechanically secure the wiring without the use of adhesive fasteners. Route and secure all wiring and cabling to avoid sharp edges and to avoid conflicts with other equipment or cabling. Terminate all wiring on a terminal block, strip, bus bar, device clamp, lug, or connector. Do not splice any wiring. Label all wiring, cables, terminal strips, and distribution blocks with

permanent and waterproof tags. Provide strain relief for all cabling with connectors, all cabling entering knockouts or ports at the equipment, and where appropriate.

Fasten all components of the cabinet assembly to be mounted on cabinet side panels with hex-head or Phillips-head machine screws. Install the screws into tapped and threaded holes in the panels. The components include, but are not limited to, terminal blocks; bus bars, panel and socket mounted TVSS, circuit breakers, accessory and equipment outlets, and DC power supply chassis.

Fasten all other cabinet components with hex-head or Phillips-head machine screws installed with nuts (with locking washer or insert) or into tapped and threaded holes. Fasten stud-mounted components to a mounting bracket providing complete access to the studs and mounting nuts. Ensure that all fastener heads and nuts (when used) are fully accessible within a complete cabinet assembly, and any component is removable without requiring removal of other components, panels or mounting rails. Do not use self-tapping or self-threading fasteners.

Mount the air conditioner in the bottom of the cabinet and do not obstruct any cable entry into the cabinet. Install condensate drains to drain condensation water out of the cabinet. Ensure the cabinet has provisions to route conduit to the existing cabinet as shown in the drawings.

Furnish and install a 48" 120 VAC power strip vertically along one of the rear rails of the communications rack. Provide a power strip that has at least eight outlets along its length.

Provide a cabinet that is ISO 9001 certified at the time of bid letting.

Locate cabinets as close to the edge of the controlled access as possible and protect hub cabinets with guardrail unless instructed otherwise by the engineer.

Install base mounted cabinets as shown on the Plans and as approved by the Engineer. Refer to the "Hub Cabinet Foundation" section of these Project Special Provisions for installation requirements for the hub cabinet foundations. Install only the required number of conduits as shown on the Plans plus one additional spare stub out conduit. Position the ends of conduits approximately 2 inches above the finished surface of the concrete base.

Mount the hub cabinets on cabinet base extenders in accordance with the "Hub Cabinet Base Extender" section of these Project Special Provisions.

Mount surge protection devices in the cabinet for the field devices that will be connected to that cabinet.

Terminate power service wire, video, and data cabling on the appropriate terminal strips, surge protection devices or jacks in the cabinet with insulated terminal lugs or connectors. Use a calibrated ratchet-type crimping tool to install the insulated terminal lugs onto the field wires.

Label spare circuits of the data cables and connect them to the cabinet ground bus bar.

Neatly bundle and identify all field wiring cables in the cabinet with permanent waterproof tags.

Ground all hub cabinets in accordance with NEC requirements and the Hub Cabinet Grounding Detail included in these Project Special Provisions. Keep the ground wire from

the cabinet ground bus bar to the ground rod assembly or array as short as possible. Ensure the ground wire is not in contact with any other part of the cabinet.

B. Hub Cabinet Base Extender

Install hub cabinet base extender at all hub cabinet locations.

Use permanent, flexible, waterproof sealing material to:

- (a) Seal between the hub cabinet base and hub cabinet base extender.
- (b) Seal 2-piece hub cabinet base extender seams.
- (c) Seal space between hub cabinet base extender and the hub cabinet foundation.

C. Hub Cabinet Foundation

Comply with Section 825 of the *2018 Standard Specifications for Road and Structures*.

When using poured concrete foundations and preformed concrete foundations, use procedures, equipment and hardware as follows:

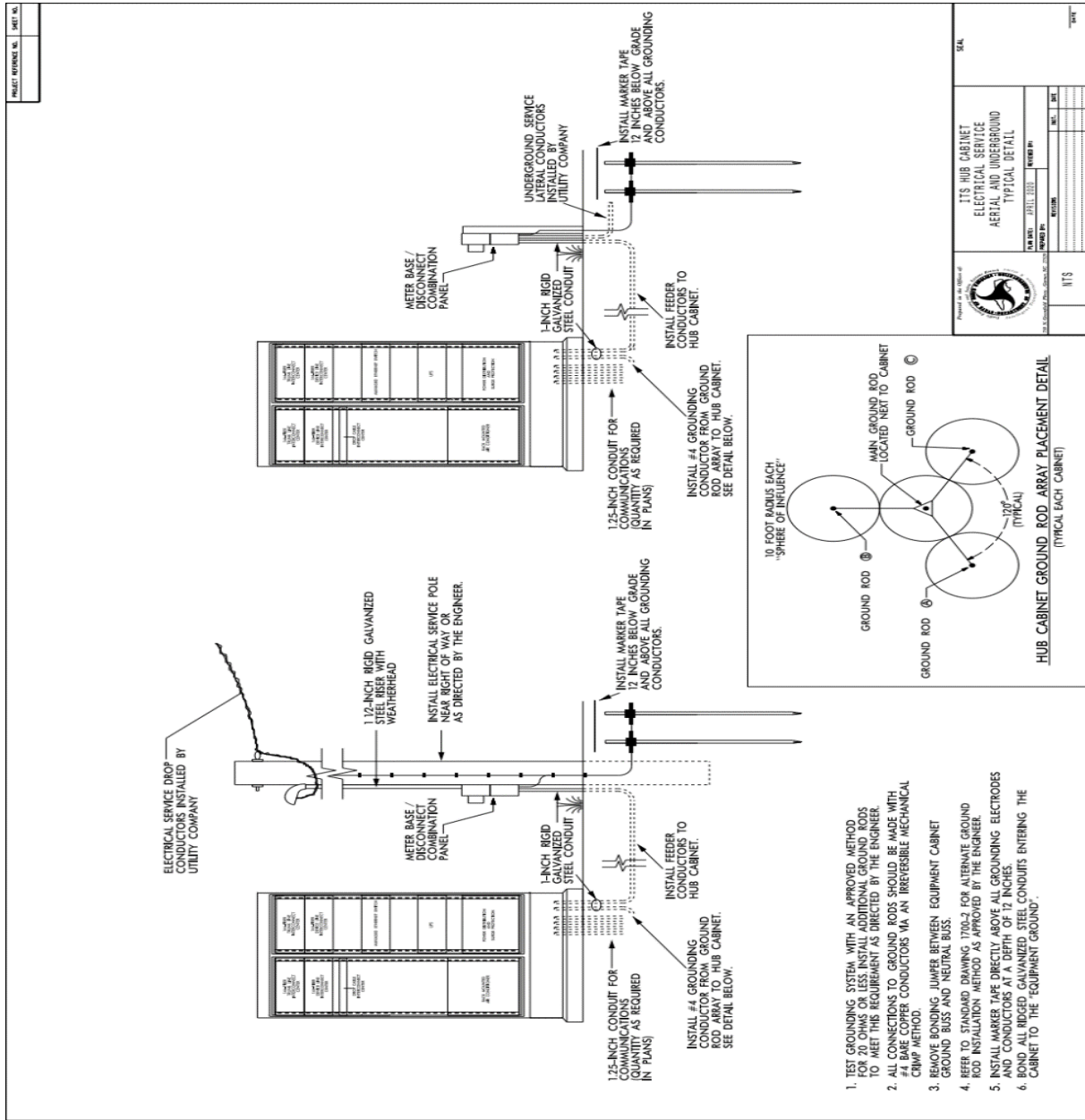
- (d) Locate new hub cabinets in locations as shown on the plans and approved by the Engineer.
- (e) Do not install foundations over uncompacted fill or muck.
- (f) Do not install foundations in low areas or locations prone to standing water.
- (g) Hand tamp soil before placing concrete to ensure ground is level.
- (h) Use a minimum of four ½ inch diameter expanding type anchor bolts to secure cabinet to foundation.
- (i) Install minimum 4 inches above and 4 inches below finished grade.
- (j) Locate external stubbed out conduit at cabinet foundation so conduit is located on the side of the hub cabinet with the UPS, do not locate conduit under the air conditioning system. Install a minimum of 6 conduit stub-outs.
- (k) Give hub cabinet foundation a broom finish and chamfered edges.
- (l) Seal space between cabinet base and foundation with a permanent, flexible, waterproof sealing material.

D. Hub Cabinet UPS

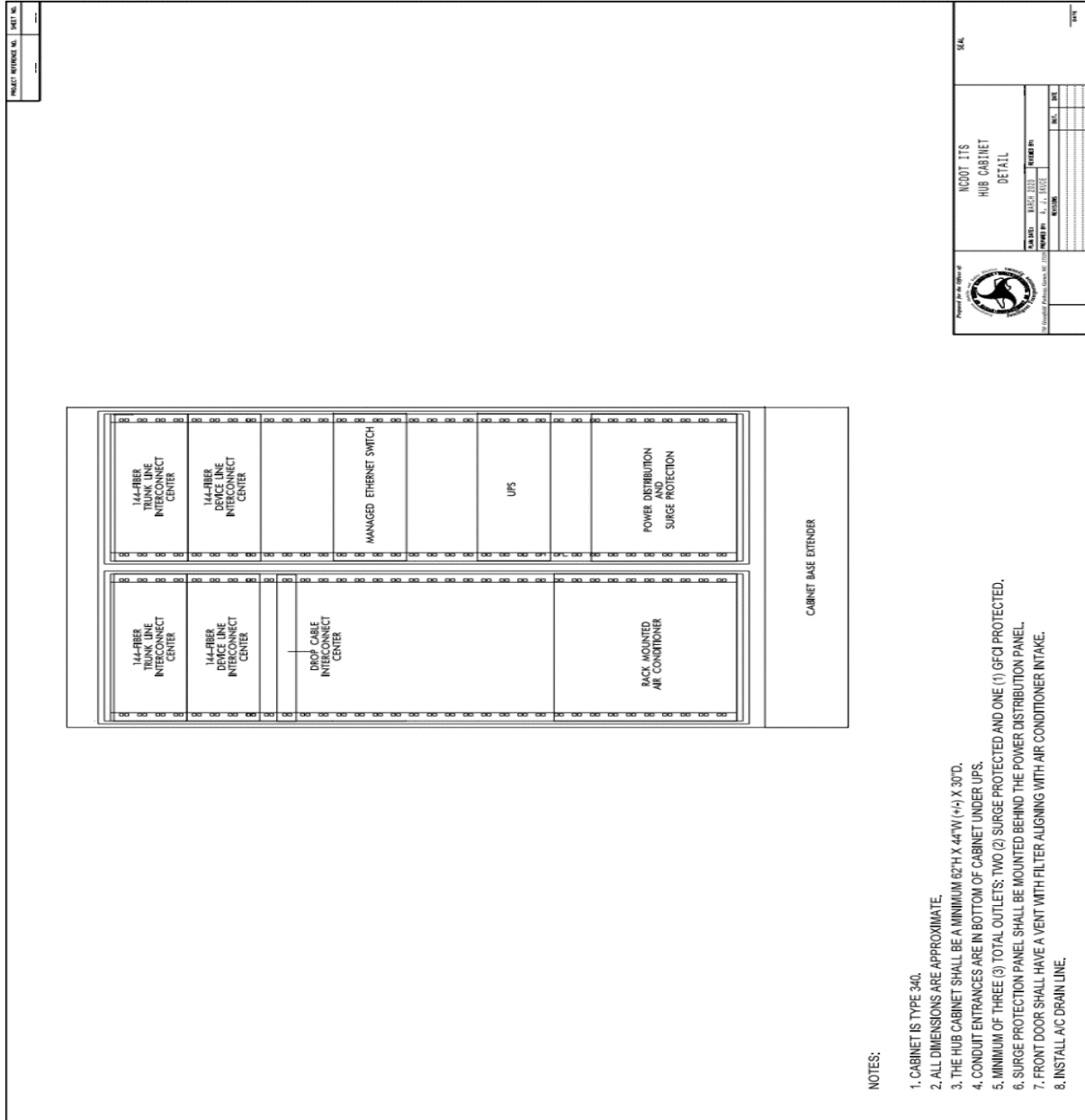
Install rack mounted UPS in each hub cabinet in accordance with the plans and detail drawings.

1.4 MEASUREMENT AND PAYMENT

No payment will be made for the UPS, HVAC, cabling, connectors, cabinet attachment assemblies, conduit, condulets, risers, grounding equipment, surge protectors, DIN rail mounting brackets, DIN rails, signs, decals, labels or any other equipment or labor required to install the hub cabinet as these will be considered incidental to the installation of the hub cabinet.



PROJECT REFERENCE NO.		SHEET NO.	
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FIBER OPTIC CONDUIT SYSTEM (RGC – HANGING) (SPECIAL)**General**

The work covered by this section consists of furnishing and installing a conduit system suspended beneath structures and buried. This conduit system is for the installation of a future fiber optic cable. Perform all work in accordance with these special provisions, the plans, and the National Electrical Code (NEC). Install the conduit system in accordance with NEC requirements as an approved raceway for electrical circuits.

The Contractor actually performing the work described in these special provisions is required to have a license of the proper classification from the North Carolina State Board of Examiners of Electrical Contractors.

The licensed Electrical Contractor is required to be available on the job site when the work is being performed or when requested by the Engineer. The licensed Electrical Contractor is required to have a set of plans and special provisions in his possession on the job site, and they must maintain accurate “as built” plans.

Materials

Submit catalog cuts and/or drawings electronically for all proposed materials for the Engineer’s review and approval. Include the brand name, stock number, description, size, rating, manufacturing specification, and applicable contract item number(s) on each submittal. Allow forty (40) days for submittal review. The Engineer will advise the Contractor of reasons for rejected submittals and will return approved submittals to the Contractor. Do not deliver material to the project prior to submittal approval.

- 1) Use terminations to seal the open ends of each conduit to provide watertight protection.
- 2) Use RGC - rigid galvanized conduit in accordance with UL 6 “Rigid Metallic Conduit” with rigid full weight galvanized threaded fittings. Provide factory installed reverse-spin couplings with 3 set screws, to allow assembly without turning the outer duct, and prevent the coupling from backing off before and after installation. Provide an O-ring gasket in the coupling body to resist pullout and to create a watertight seal. Do not use materials provided by more than one manufacturer.

When deflection couplers are detailed on the plans, use deflection couplers that are designed for use with RGC raceways, and meet all the requirements for RGC conduit stated above. Provide deflection couplers that allow a 30-degree bend in any direction and ¾ inch misalignment in all axis. Provide factory installed reverse-spin couplings with 3 set screws, to allow assembly without turning the conduit, and prevent the coupling from backing off before and after installation. Provide deflection couplers with a middle section consisting of a rubber boot attached by spin couplings and galvanized straps.

Use expansion joints that are designed for use with RGC raceways and meet the requirements for RGC stated above. Provide expansion joints that allow 8 inches of longitudinal movement. Use expansion joints consisting of a female end with a lead-in coupling body and spin coupling, and an exterior sliding joint. Provide expansion joints that have factory installed reverse-spin couplings with 3 set screws, to allow assembly without turning the conduit and prevent the coupling from backing off before and after installation.

Use transition adapters that allow RGC raceway and PVC raceway to be coupled together. Provide adapters consisting of a threaded female adapter, an outer duct adapter, and a modified coupling body with a sleeve, thin wall couplings and an end spacer.

Provide concrete inserts made of galvanized malleable iron, with internal threads for suspending loads from a fixed point beneath a concrete ceiling or deck where no lateral adjustment is required. Use inserts that can be secured to the concrete forms, preventing movement during concrete placement.

For stabilizers and hangers, use galvanized rods that conform to ASTM-A36 or A-575. Galvanized rods may be threaded on both ends or threaded continuously. Use steel stabilizer clamps and attachment brackets, sized as noted in the plans and hot dipped galvanized per ASTM-A123. Provide high strength bolts, nuts and washers that are galvanized in accordance with Article 1072-5 of the Standard Specifications.

Use adjustable clevis-type pipe hangers that allow for vertical adjustment and limited movement of the pipe. Use galvanized pipe hangers that are listed with Underwriters Laboratories or are Factory Mutual approved for the size conduit shown in the plans. Use hangers that comply with Federal Specification WW-H-171E Type 1 and Manufacturers Standardization Society SP-69 Type 1. Plastic-coat the saddle area of the hanger.

Provide pull lines specifically designed for pulling rope through conduit. Use pull lines made of 2-ply line, with a tensile strength of 240 pounds minimum. Use rot and mildew resistant pull lines that are resistant to tangling when being dispensed.

Use mastic that is a permanent, non-hardening, water sealing compound that adheres to metal, plastic, and concrete.

Provide jute that is a burlap-like material used for filling voids and protecting components from waterproofing and adhesive compounds.

Provide zinc rich paint conforming to Section 1080-9 of the Standard Specifications.

Installation

To ensure against corrosion in the area where hot dipped galvanizing has been damaged, cover all raw metal surfaces with a cold galvanized, zinc rich paint.

Stub the raceway out at an accessible location and seal with termination kits designed specifically for that purpose. Use termination kits of the same material as the raceway.

Install Stabilizers as shown on the plans to assure proper movement of the conduit expansion joints. Securely fasten the clamps with attachment brackets and stabilizer rods to the conduit at the indicated locations to assure these locations remain stationary. Install the stabilizer rods parallel to the alignment of the conduit, and tilt rod upward at an orientation of 45 degrees to the bottom of the bridge deck.

Insert a pull line in each inner duct with sufficient slack for future use.

Securely fasten all components to prevent movement during concrete placement.

Smooth all sleeve ends and make them flush with surrounding concrete surfaces. Remove burrs and rough edges by filing or grinding. A torch may be used to cut the ends of metal sleeves. Use shields to protect all surfaces during torch-cutting operations.

Place backfill in accordance with Section 300-7 of the Standard Specifications.

Fill the space between the raceway and the sleeve with mastic and jute. Install the mastic with a minimum distance of 2 inches at each end of the sleeve and the remaining interior space filled with jute. Finish the mastic by making it smooth and flush with the concrete.

Coordinate electrical conduit system work with work by others and allow installation of circuitry or fiber optic cables during the construction process as directed by the Engineer.

Ensure that the concrete inserts are in the proper position and installed correctly, including when they are located in prestressed concrete deck panels.

Keep the raceway system clean of all debris during construction, with the completed system clean and ready for installation of circuitry or fiber optic cables.

The Engineer must inspect and approve all work before concealment.

CONDUIT FOR JETTING FIBER

Description

For jetted fiber installations furnish and install conduit that has internal longitudinal ribbing and factory lubricated. Ensure the conduit is manufactured from High Density Polyethylene (HDPE) materials.

Furnish individual HDPE conduits (Traditional) and Grouped Microcell Conduits that are comprised of individual microducts manufactured into a multi-cell conduit configuration as required by the plans. Furnish individual HDPE conduits (Traditional) with an embedded tracer wire. See Section 1. 2.(C) "Traditional - HDPE Conduit" below. Furnish grouped microcell conduits with an internal tracer wire.

Furnish all HDPE conduit that is suitable for direct buried applications through standard trenching, plowing and/or directional drilling operations.

Ensure the conduit is coilable and can be furnished on reels.

Materials

Furnish material, equipment, and hardware under this section that is pre-approved on the ITS and Signals QPL at the time of project letting.

A. Solid Wall HDPE Conduit with Internal Ribbing (Traditional & Grouped Microcell)

Use HDPE conduit that conforms to the material and dimensional requirements of UL Standard 651A. Provide conduit meeting Conduit trade Size and Standard Dimension Ratio (SDR) based on the fiber count as listed below or as required in the Plans. Ensure the supplied conduits meet or exceed the minimum wall thickness ratios (SDR) corresponding to EPEC-40 (Schedule 40) or EPEC-B (SDR 13.5) as listed in UL Standard 651A,

HDPE CONDUIT SIZE and FIBER COUNT		
Traditional Conduit Trade Size	Fiber Count (None Micro-Fiber)	Furnish
1"	12 - 96	EPEC-40
1 ¼"	12 - 144	EPEC-40
1 ½"	72 - 288	EPEC-B (SDR 13.5)
2"	288 - larger	EPEC-B (SDR 13.5)

Ensure the PE resin compounds used in manufacturing the conduit meet or exceed the cell classification PE 334480C (black with 2% minimum carbon black) or PE 334480E (colored conduit with UV inhibitors) in ASTM D3350 and the table below.

RESIN PROPERTIES		
Property	Requirement	Test Method
Density	0.940 g/cm ³ min.	ASTM D1505 ASTM D792 ASTM D4883
Melt Index (condition 190/2.16 is acceptable)	< 0.4 grams/10 minutes	ASTM D1238
Flexural Modulus	80,000 psi, min.	ASTM D790
Tensile Strength	Tensile Strength 3,000 psi, min.	ASTM D638
Elongation	Elongation 400%, min.	ASTM D638
Slow Crack Growth Resistance	An ESCR as per condition B, 10% IGEPAL requirement of F ₁₀ >96 hrs is allowable	ASTM D1693
Hydrostatic Design Basis	"0" for Non-Pressure Rated Pipe	ASTM D2837
UV Resistance (Outdoor Conduit Only)	Stabilize with at least 2% by weight carbon black or colored with UV Inhibitor	ASTM D4218

Ensure the HDPE conduit is resistant to benzene, calcium chloride, ethyl alcohol, fuel oil, gasoline, lubricating oil, potassium chloride, sodium chloride, sodium nitrate and transformer oil and is protected against degradation due to oxidation and general corrosion.

Furnish all HDPE conduits with internal longitudinal ribbing and that is factory lubricated with a permanent coextruded internal layer to provide a low coefficient of friction of 0.20 or less in accordance with Telcordia GR-356.

Furnish coilable conduit that is supplied on reels in continuous lengths for transportation and storage outside. Ensure that the process of installing the coilable conduit on the reel does not alter the properties or performance of the conduit for its intended purpose.

B. Conduit Color Schemes

Ensure for traditional conduits and grouped microcell conduits that multiple conduit colors can be provided in accordance with the plan requirements. For conduits manufactured with stripes, ensure that a minimum of three stripes are uniformly spaced around the conduit with 120 degrees of separation. Do not use “Solid Yellow” or “Black with Yellow Stripes” conduit, furnish conduits in the following minimum colors (Blue, Orange, Green, Brown, Slate or Grey, Black, Red, White).

Furnish grouped microcell conduit assemblies with an “Orange” outer sheath unless otherwise noted in the plans or these project special provisions. An alternate grouped microcell conduit outer sheath color may be submitted for approval by the Engineer.

C. Traditional - HDPE Conduit

On traditional conduits, where multiple conduits are to be placed at the same time, furnish minimum one HDPE locatable conduit manufactured with a minimum of a #14 AWG solid copper (soft drawn or annealed per ASTM B3) tracer wire attached to the outer shell of the conduit. Ensure the locatable conduit is manufactured to the material and dimensional specifications of NEMA TC-7 for the wall type to be certified by the manufacturer.

Ensure the non-locatable standard wall supplied HDPE conduit is printed in accordance with the requirements of UL Standard 651A and is listed by a Nationally Recognized Testing Laboratory (NRTL). Ensure all non-locatable standard wall HDPE conduits are marked at least with the following information at 2 feet or less intervals per the examples below in a-f. For locatable standard wall HDPE conduit ensure the conduit is marked at least with the following information on 2 feet or less intervals with items a-e below:

- (a) Material: HDPE
- (b) Trade Size: i.e., 2 inches
- (c) Conduit Type: SDR 13.5 or EPEC-B
- (d) Manufacturer’s name or trademark
- (e) Manufacturer’s production code to identify manufacturing date, facility, etc.
- (f) National Recognized Testing Laboratory (NRTL) symbol or listing number for the non-locatable wall types and manufacturer certified for the locatable wall types

D. Traditional – Mechanical Duct plugs, Mechanical Fiber/Conduit Duct Plugs

Provide reusable mechanical duct plugs to seal traditional HDPE conduits that are designated as spare or unused at the time of installation. Ensure the mechanical duct plug is sized to slip inside the conduit and can be tightened using compression to expand a seal creating a snug fit to ensure debris cannot enter the conduit system. Conduit plugs and/or caps that require special adhesive glues that permanently adhere the device to the conduit will not be accepted.

Provide mechanical fiber/conduit sealing split duct plugs designed to slip over the fiber cable and inside the HDPE conduit. Ensure mechanical fiber/conduit sealing split duct plugs through the use of compression have an expandable seal to ensure a snug fit around the fiber's outside diameter and the inside diameter of the conduit to ensure debris cannot enter the conduit system.

The use of a duct and conduit sealer or mastic which is of a putty-like compound shall not be used. Ensure any duct plug used to seal a conduit with or without a fiber cable is removable and reusable. Conduit plugs are not required to be listed electrical devices.

E. Grouped Microcell Conduits

Furnish individual microduct conduits that are bound together within and outer extruded 0.070" sheath of high-density polyethylene to form a grouped microcell conduit assembly. Ensure the individual 22/16 mm microducts that form the grouped microcell conduit assembly have a SDR number less than or equal to 7.3.

Furnish grouped microduct conduit assemblies with a minimum allowable flexural modulus of 5,625 Kg/cm² (80,000 psi) and a minimum Pipe Stiffness of 49.2 Kg/cm² (699 psi).

Ensure the completed grouped microcell conduit assembly is furnished with a minimum of two (2) ripcords located along the outer sheath. The outer sheath of the grouped microcell conduit assembly shall not be adhered (glued) to the internal microcell conduits to allow for easy removal of outer sheath.

Furnish grouped microcell conduits assemblies with a preinstalled 14 AWG THWN solid copper soft drawn per ASTM B3 tracer wire located within the interior of the outer sheath. Grouped Microcell conduit assemblies with and internal tracer wire located inside an individual microduct conduit will not be accepted.

For overriding applications, where a new single microduct will be installed in an existing conduit system, furnish a microduct conduit with an SDR number less than or equal to 11 to serve as the new carrier pipe. For override applications provide a microduct conduit sized as specified in the Plans.

Ensure the individual microducts supplied by the manufacturer meet quality and verification testing in accordance with ASTM F2160 for materials and associated properties for cell classification PE 334480 C for black or E for color. Ensure the outer sheath of the group microcell conduit system is marked every 2 feet in accordance with ASTM F2160 standards to include the following a-f below:

- (a) Material: HDPE
- (b) Trade Sizes and # of microducts: i.e., 4-way 22/16 mm
- (c) Conduit Type: SDR 7.3 or EPEC-7.3
- (d) Manufacturer's name or trademark
- (e) Manufacturer's production code to identify manufacturing date, facility, etc.
- (f) Manufacturer certified meeting the material and dimensional microduct requirements.

F. Microduct Couplers and End Caps

Furnish gasketed couplers and gasketed end caps recommended by the manufacturer of the furnished microduct conduits for joining and sealing off of the microduct conduit ends. Couplers and end caps shall be sized specifically for the microduct conduits and designed to be easily removed by hand and re-useable.

Couplers shall meet, at minimum, the required safety margins testing as outlined under Bell Core GR-356-CORE. Additionally, the couplers shall be tested to illustrate that the couplers are 100% airtight (no air loss) due to failure of couplers when pressure is raised from the 125 psi (maximum Bell Core GR-356-CORE pressure tested) to 175 psi $23^{\circ} C \pm 5^{\circ} C$ ($73^{\circ} F \pm 9^{\circ} F$) for 5 minutes.

G. Pull Tape

Furnish pull tape manufactured out of ½-inch wide polyester material with a minimum of a #22 AWG solid PVC insulated tracer wire woven into the polyester material. Ensure the pull tape is pre-lubricated and has a minimum tensile strength of 1,250 lbs.

Construction Methods

A. General

Install traditional HDPE conduits and grouped microcell conduit assemblies utilizing the method identified in the plans (trench, micro-trench, plow, directional drill, etc.) Comply with the following Sections in Article 1715-3 “Construction Methods” of the North Carolina Standard Specifications for Roads and Structures -Dated January 2018, where applicable:

Section 1715-3 (B) – Trenching

Section 1715-3 (C) – Plowing

Section 1715-3 (D) – Directional Drilling

MINIMUM CLEARANCE REQUIREMENTS	
Man-made Structure or General Installations	Minimum Clearance Requirement (all distances are “averages”)
Minimum/Maximum Conduit Depth Parallel to Interstate	30”/36”
Minimum/Maximum Conduit Depth crossing a Roadway (Perpendicular)	4 feet or 8 times the back reamer’s diameter, whichever is greater
Bridge Foundation	5 ft horizontal and 4 ft vertical (clearances greater than minimum horizontal should continue to use the 4V:5H ratio, i.e., 10 ft horizontal should be no deeper than 8 ft)
Drainage Pipes 60" or Less	4 ft below (while maintaining a minimum depth of 30” below grade)
Drainage Pipes Greater than 60"	4 ft below (while maintaining a minimum depth of 30” below grade)
Box Culverts	4 ft below (while maintaining a minimum depth of 30” below grade)
Slope Protection (rip rap)	2 ft below
Slope Protection Foundation Footing	5 ft below

Crossing Beneath Ditches	32” below bottom of ditch
Navigable Waters/Stream Crossings	6 ft below

If it can be demonstrated that rock would be encountered, a reduction in depth to minimum 18-inches of cover is allowed. Any reduction in conduit dept must be approved by the Engineer.

Follow industry accepted practices for installing the conduit(s) when trenching, plowing and/or directional drilling operations are required. Use pulling eyes or external conduit grips sized in accordance with the manufacture’s recommendations for directional drilling operations. Where external grips are to be used the ends of the conduits should be sealed to prevent debris from entering as the conduit is being installed.

For any installation practices that require pulling of the conduits use a breakaway swivel rated to not exceed the manufactures recommended working tensile load. When a field bend or elevation change in the conduit is required to work around obstructions or obstacles do not violate the manufacturer’s recommend safe working tensile load and minimum allowable bend radius.

Backfill and tamp trenches in 6-inch lifts while removing any rocks or debris that could possibly damage the conduit system. Place non-detectable marker tape 12 inches below the final grade.

During installation of any conduit(s) temporarily install a mechanical duct plug (traditional) or end cap (microduct) on the exposed conduit ends to prevent any debris from entering the conduit. Install conduit(s) to enter and exit the junction boxes through the mouse holes, precast knockouts or field drilled conduit entrance holes. Sufficient slack conduit should be pulled into the junction box so the opposing ends overlap for joining. Adequate time should be given prior to joining to allow the conduit to relax and recover due to any elongation that may have occurred as it was being pulled into place. **Conduits installed for the purpose of jetting in fiber shall not enter or exit junction boxes through the bottom.**

Install quick setting, non-shrinking grout around the conduit openings to seal and hold the conduit in place as it enters and exits the junction boxes. Ensure the lowest conduit entering the junction box maintains a minimum of 4-inch separation from the bottom layer of crushed stone located inside the junction box.

Ensure the orientation for conduits of the same color enter and exit the junction box positioned opposite each other so that when mating the conduit of the same color the ends will be in direct line with one another. During initial installations of the conduits ensure the opposing conduits are pulled into the junction box so the opposing ends overlap for joining and are properly sealed. Install conduits in one continuous length between junction boxes. Joining conduits shall only be performed within junction boxes, unless otherwise approved by the Engineer (see “Conduit Integrity Testing” below).

When temporarily joining conduits inside junction boxes to increase fiber jetting distances use removable split couplers designed to be airtight to temporarily join the opposing ends. Prior to joining two conduits with a removable split coupler use approved conduit shears to provide

smooth, clean, square cuts on ends of the conduits. At the appropriate time during cable installation, the split couplers will need to be removed to allow for the specified slack loop length to be installed.

Final dressing of the conduits shall be done after the cable slack loops have been installed in each junction box. For the conduit sections where the cable has been installed, the conduit is to be slit and removed to 4" from the junction box wall. Consult the conduit manufacturer for the determining the appropriate tools to be used that will protect the installed cables. A split expandable seal is to be placed around the cable into the end of each conduit end, see Section 1.4 (B) - "Jetting Operations" below.

For the spare conduits the duct ends are to be left overlapped for future use. All ends should be sealed using an expandable duct plug which is to be removed when the "Conduit Integrity Testing", see B below, is being done. Once the CIT testing has been completed the ends are to be sealed as outlined in Section 1.4 (C) "Duct Sealing" below.

B. Conduit Integrity Testing

Immediately upon completing the conduit installation or prior to installation of the fiber cable it will be the responsibility of the Contractor to ensure usability of the conduit system. This will be done by conducting a mandatory "Conduit Integrity Tests" (CIT) on each individual conduit in the presence of the Engineer. The purpose of performing the CIT to identify there are no obstructions, leaks or other defects resulting from the conduits installation between access points (junction box locations). The CIT includes a series of three (3) individual steps to be completed, prior to acceptance of the conduit system.

CIT Steps

- 1) Air Pressure Test
- 2) Shuttle/Mandrel Test
- 3) Sponge Test/Cleaning

Air Pressure Test:

Seal the downstream end of the conduit with a pressure rated temporary end cap or plug and attach an airtight fitting with a quick connect air coupling and pressure gauge to compressor end of the conduit. Connect the compressor hose to the fitting with an inline pressure gauge and fill the conduit with compressed air raising the pressure to 6 bars (87 psi). Once the pressure has reached the designated level wait to see if the pressure drops slightly and add additional air to reach the desired pressure level. Once the pressure level appears to have stabilized at the prescribed level wait 5 minutes to see if the pressure remains stable. If the pressure reading remains stable or does not drop significantly (Minimal reductions of 1 to 2 pounds is acceptable) after a 5 minutes lapse of time, then there is no leakage in the duct and the section being tested has passed.

If the pressure reading shows a significant drop-in pressure, then determine where the leakage is occurring, and corrective actions shall be taken. Note the loss of pressure may be occurring at the coupler, if it has not been properly installed. If it is at the coupling in a handhole for example correct it and retest. If the problem is found to be in the conduit between access points notify the

Engineer and make arrangements to replace or repair that section of conduit at no additional expense to the Department (see repair of conduit segments later)

Shuttle/Mandrel Test:

An obstruction or kink or some other defect in the installed conduit can be determined by a shuttle test. The test is conducted by using a shuttle that is 70-80% of conduits inner diameter that is either a sphere or a segment of fiber optic cable with a length of 3 times the diameter of the conduit being tested. The shuttle is to be inserted into the conduit and passed through the conduit by applying compressed air. The pulling option is to pull a segmented mandrel through the conduit, designed for proving duct runs.

Provided the shuttle or mandrel passes through from end to end of the conduit then the duct is considered to be acceptable for cable installation. If the shuttle mandrel fails to pass from end to end, then the conduit is either kinked or blocked. It will be the installers obligation to find the blockage or kinked location. For conduits that do not pass this test notify the Engineer and make arrangements to replace or repair that section of conduit at no additional expense to the Department (see repair of conduit segments later).

Sponge Test/Cleaning:

Installation of a test sponge as recommended by the jetting equipment or conduit manufacturer is to be used for cleaning and/or lubricating the conduits inner diameter from end to end, prior to cable installation. Two sponges are to be used for this purpose using the steps listed below:

1. From the jetting end blow one or two sponges through the conduit to the destination handhole. Inspect the sponges and repeat this step until the sponges are clean of dirt and debris after passing through the conduit system, then move to step 2.
2. At the jetting end of the conduit insert one sponge pushing it into the end of the conduit several inches.
3. Leave enough room to then pour in the lubricant manufacturer's suggested amount of lube for the diameter and distance the cable is to be jetted.
4. Lubricate and insert the second sponge into the end of the conduit.
5. Secure the conduit lead end to the jetting machine's sealed air block and apply compressed air to blow the sponge and lubricant through the conduit.
6. The last step is to jet the fiber cable into the conduit.

Repair of Conduit Segments

For HDPE Conduit segments (traditional and/or multicell), where the conduit has been discovered to have been damaged (failing to pass the Conduit Integrity Testing) notify the Engineer. The Engineer has the authority to require any of the following options regarding the damaged section of conduit:

- 1) Replace the damaged section of conduit
- 2) Allow the use of conduit couplers to replace the damaged section of the conduit
- 3) Allow the damaged section to be repaired using the "HDPE pipe welding heat fusion" process.

C. Conduit Sealing

Immediately upon completing the Conduit Integrity Testing install an approved mechanical duct plug or gasketed end coupler over the ends of all conduits to guard against debris or water entering the conduit.

D. Spare Conduits and Pull Tape

For conduits designated to be used as spares, install a continuous section of Pull Tape through the conduit. Place the embedded tracer wire of the pull tape under the gel filled wire nut along with the other conduit's internal tracer wire. (See "Tracer Wire Bonding/Isolation Test Switch" in the "Junction Boxes (Limited Access Facilities)" found elsewhere in these Specifications).

Jetting Fiber

A. General

Furnish personnel trained in the operation of the fiber jetting machine and all safe operating procedures. Provide a fiber jetting machine complete with a head and feeder system with all necessary seals and nozzle attachments including a compressed air machine to facilitate installation of the fiber.

Provide couplers and split half couplers as necessary to make temporary joints of conduits to facilitate jetting of the fiber cable through midspan junction boxes. Ensure the couplers and split half couplers are designed to provide an airtight seal around the HDPE conduits and that they are reusable. Ensure split half couplers can be easily assembled and disassembled using standard wrenches and/or nut drivers and that couplers can easily be removed and reused.

Furnish a UL approved blowing lubricant recommended by the conduit manufacturer and approved by the fiber manufacturer that will not adversely affect the HDPE conduit nor the fiber optic cable both during and after the cable jetting installation process. Ensure the lubricant is designed to meet or exceed all cable blowing requirements with respect to viscosity, cling, drag, wetting and designed for use in the temperature range indicative of the environmental temperature when the cable is installed. Ensure the lubricant is safe to use and is non-toxic, non-corrosive, non-flammable and does not stain, alter or cause a smearing effect to the required markings found on the outer sheath of the fiber optic cable.

B. Jetting Operations

Upon successful completion of the CIT procedures begin jetting operations to install the fiber. Ensure the fiber reel and jetting machine are synchronized to minimize unnecessary pulling and jerking on the fiber cable as it is being removed from the reel during the installation process. Apply cable pulling lubricant as recommend by manufacturers to minimize the Coefficient of Friction allowing the cable to slide effortlessly through the conduit system.

During the jetting process provide spare fiber at junction boxes and/or cabinets as required by the plans. After the jetted fiber is installed ensure that all spare conduits are sealed off with a mechanical sealing plug or gasketed end cap. For conduits that contain a fiber cable install a mechanical fiber/conduit sealing split duct plug to seal the fiber and conduit from debris. Moldable Duct Seal will not be acceptable for spare conduits or conduits containing fiber when those conduits are installed for the future installation of fiber using the "Fiber Jetting Process" and when the installation of the conduit system is along a "Limited Access" or "Controlled Access Facility".

Ensure any conduits designated as spare have a mechanical duct plug (Traditional) or gasketed end cap (Microcell) installed in the open ends to seal against debris entering the conduit system.

SOLAR POWER ASSEMBLY

Description

Install new solar power assembly equipment cabinets and all necessary hardware in accordance with these Project Special Provisions and the Plans. Comply with the provisions of Section 1700 of the Standard Specifications.

Materials

Furnish and install a solar power assembly at the locations shown in the Plans consisting of the following:

- Solar Array
- Solar Charge Controller
- Batteries
- Assembly Cabinet
- Concrete Cabinet Pad

A. Solar Array

Furnish solar modules made in North America and have a minimum 20-year factory warranty. The solar array should have a minimum peak output of 100W. Solar modules must be UL listed, FM Class I, Div II, Group C & D approved. For the solar array, power wiring should be 10-2, stranded copper, double insulated, sunlight resistant, 600V 90C rated cable. The array mount will attach to the side of the CCTV pole with stainless steel fasteners. The array mount must be aluminum alloy or stainless steel. The array must be capable of withstanding 125 mph winds.

B. Solar Charge Controller

Furnish solar charge controllers that are UL listed, a minimum 45A with solid state, low voltage disconnects. Ensure that the solar charge regulator is sealed with internal temperature compensation, lightning protection, reverse polarity protection, and LED indicators. Provide controllers with the capability of 3 functions: battery charging, load control, and diversion regulation. Controllers must be furnished with fully adjustable DIP switches and RD-232 and RJ45 communications ports to adjust the unit's operational modes and monitor the battery health via the network. Ensure the solar charge regulator is FMS Class I, Groups ABCD and have the CE mark.

C. Batteries

Provide 12V gel electrolyte, non-spillable, maintenance free batteries. Furnish batteries capable of providing power for 10 days without being charged by the Solar Array and Solar Charge Controller. Furnish batteries with a minimum operating temperature of -76°F to 140°F.

D. Ground Mounted Battery Cabinet

Furnish and install a ground mounted cabinet, constructed of 0.125" aluminum with stainless steel hardware, that is separate from the CCTV equipment cabinet to house the batteries. Cabinet shall not be installed in a ditch line or an area prone to flooding. The enclosures must be NEMA 3R rated and large enough to contain the batteries plus 20% spare space. Mount the battery cabinet on a concrete pad. Install a rigid metal conduit from the CCTV Equipment Cabinet to the ground mounted battery Cabinet.

Construction Methods

Furnish and install new solar power assemblies. Install solar power equipment as shown in the Plans. Provide wiring, disconnects, and all other required equipment as required by Article 690 of the NEC. Install all solar charging electronics and the solar charge controller in the CCTV cabinet. Install the batteries in the ground mounted battery cabinet. Install solar panel collectors at a height that will prohibit theft and/or vandalism. At a minimum, mount the solar panel collectors 20ft from ground level. Install the solar array with the orientation and tilt angle that provide the maximum solar-hours and gain. Installation of multiple collector panels shall be approved by the Engineer prior to installation. Ensure that the maximum resistance between the grounding electrode and all points in the ground system does not exceed 5 ohms. In addition to the requirements of the NEC, test grounding electrode resistance at the connection point to the electrical service ground bus for a maximum of 20 ohms. Furnish and install ground rods to the grounding electrode system as necessary to meet the test requirements.

Testing

In addition to any testing requirements of the applicable ITS device, before a solar site is accepted the contractor must demonstrate that the solar array is functioning properly and that the batteries can power the ITS device for 10 days without charging.

Measurement and Payment

No measurement will be made for solar arrays, solar power assembly equipment cabinet, installing breakers, temperature sensors, concrete cabinet pad, mounting system, conduits, risers, wiring, and hardware as these will be considered incidental to furnishing and installing the solar power assembly.

GENERAL

The State will not be bound by oral explanations or instructions given at any time during the bidding process or after award. Only information that is received in response to this RFP will be evaluated; reference to information previously submitted will not suffice as a response to this solicitation.

NO CONTACT CLAUSE

To ensure that information is distributed equitably to all short-listed Design-Build Teams, all questions and requests for information shall be directed to the State Contract Officer through the Design-Build e-mail address. This precludes any Design-Build team member, or representative, from contacting representatives of the Department, other State Agencies or Federal Agencies either by phone, e-mail or in person concerning the Design-Build Project.

USE OF TERMS

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

Throughout this RFP and all manuals, documents and standards referred to in the RFP, the terms NCDOT, Department, Engineer and State are synonymous.

DESIGN REFERENCES

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

REVIEW OF SUBMITTALS

Major design milestones and required design submittals shall be identified as activities on a CPM, bar chart or other scheduling tool. This schedule shall be submitted to the Design-Build Unit and Resident Engineer concurrently with the first design submittal, or within 30 days of the contract award, whichever is earlier. The schedule shall be revised and resubmitted as design milestones change or as directed by the Design-Build Unit. Submittals will be reviewed within ten working days (15 days for temporary structures, overhead sign assemblies, MSE walls, FEMA compliance documents, and temporary shoring) from the date of receipt by NCDOT unless otherwise stipulated in the scope of work. All submittals shall be prepared and submitted in accordance with the *Design-Build Submittal Guidelines*, which by reference are incorporated and made a part of this contract. All submittals shall be made simultaneously to the Design-Build Unit and the Resident Engineer. The Department will not accept subsequent submittals until prior submittal reviews have been completed for that item. The Design-Build Team shall inform the Design-Build Unit in writing of any proposed changes to the NCDOT preliminary designs

and / or previously reviewed submittals and obtain approval prior to incorporation. The Design-Build Team shall prioritize submittals in the event that multiple submittals are made based on the current schedule. All submittals shall include pertinent Special Provisions. No work shall be performed prior to Department review and acceptance of the design submittals.

OVERVIEW

The Design-Build Project R-5777D, I-5986C and HO-0002A, B & C is the installation of conduit containing broadband fiber optic cable to be installed in the right-of way of the border-to-border span of I-95, traverse the length of US 70 (future I-42) from I-40 to the Morehead City Port and US 74 between Asheville and I-40 near Wilmington.

Project services shall include, but are not limited to:

- **Design Services** – completion of construction plans
- **Construction Services** – necessary to build and ensure workmanship of the designed facility
- **Intelligent Transportation System** – design and construction of ITS components, including CCTV cameras, dynamic message sign (DMS), fiber-optic communications cable and conduit, and ITS integration
- **Permit Preparation / Application** - development of all documents for required permits
- **Right of Way** – acquisition of right of way necessary to construct project
- **As-Constructed Drawings**
- **As-Built Plans**

Construction Engineering Inspection will be provided by the NCDOT Division personnel or will be performed under a separate contract.

The R-5777D and I-5986C Categorical Exclusion Type-I (B) (Ground Disturbing Action) is approved.

The HO-0002A, B & C Categorical Exclusion Type-I (B) (Ground Disturbing Action) will be approved prior to Preferred Proposer.

GENERAL SCOPE

The scope of work for this project includes design, construction and management of the project. The design work includes the addition of broadband for 181 miles on I-95 from the South Carolina to the Virginia border, 125 miles on US 70 between I-40 and the Morehead City Port, and 280 miles on US 74 from Asheville to Wilmington. Unless allowed otherwise elsewhere in this RFP, the designs shall meet the 2018 AASHTO *A Policy on Geometric Design of Highways and Streets* and all appropriate latest versions of AASHTO *LRFD Bridge Design Specifications*, *Manual of Uniform Traffic Control Devices* and all NCDOT design policies that are current as of the Price Proposal submittal date or the Best and Final Offer submittal date, whichever is later.

Unless noted otherwise elsewhere in this RFP, all documents referenced herein shall be the edition / version, including all interim revisions, effective on the Design-Build submittal date or the Best and Final Offer submittal date, whichever is later.

Construction shall include, but not be limited to, all necessary clearing, grading, conduit, fiber, roadway, drainage, structures, utility coordination and relocation, and erosion and sediment control work items for the proposed broadband infrastructure installation. Construction engineering and management shall be the responsibility of the Design-Build Team. Construction shall comply with 2018 NCDOT *Standard Specifications for Roads and Structures* and any special provisions.

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

- Structure Design, Conduit attachment to Structures
- Permit Application Modification, if required
- Erosion and Sedimentation Control Design and Implementation
- Transportation Management Plan Design and Implementation
- Intelligent Transportation Systems (ITS) Design
- Construction
- Design and Construction Management
- Utility Construction
- R/W Utilities, Conflicts and / or Construction
- Construction Surveying
- Location and Surveys

All designs shall be in Microstation format using Geopak software (current version used by the Department).

DESIGN AND CONSTRUCTION PERFORMED BY DESIGN-BUILD TEAM

The design work consists of the design and implementation of a fiber optic broadband network on approximately 586 miles of limited access facilities along the I-95, U.S.70 and U.S. 74 corridors. The Design-Build Team shall prepare complete engineering drawings, typical details, engineering calculations, and technical specifications for the Project.

Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall acknowledge that project documents furnished by the Department are preliminary and provided solely to assist the Design-Build Team in the development of the project design. The Design-Build Team shall be fully and totally responsible for the accuracy and completeness of all work performed under this contract and shall save the State harmless and shall be fully liable for any additional costs and all claims against the State which may arise due to errors, omissions and negligence of the Design-Build Team in performing the work required by this contract.

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

The Design-Build Team shall certify all plans, specifications, estimates and engineering data furnished by the Team.

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

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

The Design-Build Team shall not change team members, subconsultants or subcontractors identified in the Statement of Qualifications (SOQ) or Technical Proposal without written consent of the Engineer or the State Contract Officer. In addition, subconsultants and subcontractors not identified in the SOQ or Technical Proposal shall not perform any work without written consent by the Engineer. Individual offices of the Design-Build Team not identified in the Statement of Qualifications submitted shall not perform any work without written consent by the Engineer. Failure to comply with this requirement may be justification for removing the Team from further consideration for this project and disqualification from submitting on future Design-Build Projects.

All firms shall be prequalified by the Department for the work they are to perform. Joint Ventures, LLCs or any legal structure that are different than the existing prequalification status must be prequalified prior to the Price Proposal submittal deadline. Subcontractors need only be prequalified prior to performing the work. Design firms should be prequalified prior to the Price Proposal submittal deadline. If not prequalified at the time of the Price Proposal submittal deadline, the prime contractor shall be solely responsible for either (1) ensuring that the design firm is prequalified prior to its first design submittal or (2) replacing that firm with a prequalified firm.

ACCESS TO PROVIDED MATERIALS

To facilitate distribution of documents that may be helpful to the Design-Build Teams in their development of a Price Proposal and subsequent designs, project material will be made accessible through a secure web portal. The Design-Build Project Manager for each short-listed team shall provide a list of team members that will require access to this portal. This list shall include the name, e-mail address and North Carolina Identity Management (NCID) for each individual team member. Once the list is complete, it shall be submitted to the Design-Build e-mail address (designbuild@ncdot.gov). No distribution of Provided Materials will be possible prior to this list being submitted and the access privileges established as noted herein.

To create an NCID account, each individual shall go to NCDOT's Connect website (<https://connect.ncdot.gov>) and click on the "How to get an Account" link and then, "Create NCID".

The Department will obtain access rights for these individuals and notify the Design-Build Project Manager accordingly. Individuals may then re-enter the "Connect" site and login with their NCID account. Once logged in, the Teamsite "Broadband I-5986C and R-5777D" link will be apparent on the left side of the webpage.

Please note that all material provided, including the material provided through this portal, is provided for informational purposes only and is provided solely to assist the Design-Build Team in the development of the project design unless noted otherwise elsewhere in this RFP. By submitting a Price Proposal, the Design-Build Team acknowledges that they are fully and totally responsible for the project design, including the use of portions of the Department design, modification of such design, or other designs as may be submitted by the Design-Build Team, unless noted otherwise elsewhere in this RFP. The Design-Build Team further acknowledges that they are fully and totally responsible for the accuracy and completeness of all work performed, including the determination of the accuracy of the information provided through this portal, and to the extent that the Design-Build Team chooses to rely on such information.

ELECTRONIC PLAN SUBMITTALS AND E-SIGNATURES

The Design-Build Team shall submit all Release for Construction Plans in accordance with the NCDOT e-Signature requirements, including but not limited to providing signed and sealed searchable .pdf files. Reference the website noted below for additional information:

<https://connect.ncdot.gov/projects/roadway/pages/private-engineering-firm-resources.aspx>

ETHICS POLICY

Employees employed by the Design-Build Team or employees employed by any subconsultant for the Design-Build Team to provide services for this project shall comply with the Department's Ethics Policy. Failure to comply with the Ethics Policy will result in the employee's removal from the project and may result in removal of the Company from the Department's appropriate prequalified list.

APPROVAL OF PERSONNEL

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

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

- Drafting the contract or contract Scopes of Work
- Design-Build Team selection
- Negotiation of the contract cost (including calculating manhours or fees)
- Contract administration

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

The Design-Build Team and their subconsultants / subcontractors shall restrict all personnel embedded within the Department, including but not limited to Design Units and Divisions, from working on any Design-Build procurement / project. Except as allowed otherwise below, the Design-Build Team shall provide a list of all embedded personnel to the Department and a signed Confidentiality Agreement for each embedded employee, as well as their employer and NCDOT Unit Manager. If the Design-Build Team has previously provided a signed Confidentiality Agreement for an embedded employee who's employer and / or NCDOT Unit Manager have not changed, the Design-Build Team shall 1) indicate on the aforementioned list when the original Confidentiality Agreement was provided to the Design-Build Unit (date and TIP Project), 2) provide a copy of the original signed Confidentiality Agreement, or 3) provide a new signed Confidentiality Agreement. The Design-Build Team shall submit the aforementioned list and Confidentiality Agreements to Mr. Ronald E. Davenport, Jr., P.E., State Contract Officer, within ten business days of the issuance of the Industry Draft RFP, and provide updated lists and Confidentiality Agreements, as appropriate, throughout the project procurement / duration.

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

STRUCTURES SCOPE OF WORK

General

The Design-Build Team shall be responsible for the design and installation of all fiber optic conduit attachment systems (conduit) necessary to complete the project.

Unless allowed otherwise in this RFP, designs shall be in accordance with the latest edition of AASHTO LRFD Bridge Design Specifications (with exceptions noted in the NCDOT *Structures Management Unit Manual*), NCDOT *Structures Management Unit Manual* (including Policy Memos) and NCDOT *Bridge Policy Manual*.

Unless allowed otherwise in this RFP, all construction and materials shall be in accordance with the 2018 NCDOT *Standard Specifications for Roads and Structures*, NCDOT Structures Management Unit Project Special Provisions, and NCDOT Structures Management Unit Standard Drawings.

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

Additional conduit attachments to structures may be permitted with the approval of the Engineer and review by Structures Management Unit.

Project Scope

I-5986C

Fiber Optic Conduit Attachment Systems (Conduit) may be attached to the following structures on I-95:

Robeson County: - none

Cumberland County:

Bridge No. 250111 on I-95 (Southbound) over Cape Fear River

Bridge No. 250134 on I-95 (Southbound) over SR 1006 and CSX Railroad

Harnett County - none

Johnston County

Bridge No. 500101 on I-95 (Southbound) over Neuse River

Bridge No. 500107 on I-95 (Northbound) over SR 1927, SR 2305, and CSX Railroad

Bridge No. 500118 on I-95 (Northbound) over CSX Railroad

Wilson County

Bridge No. 970099 on I-95 (Northbound) over CLNA Railroad

Nash County

Bridge No. 630133 on I-95 (Southbound) over Sapony Creek

Bridge No. 630192 on I-95 (Southbound) over CSX Railroad

Bridge No. 630201 on I-95 (Northbound) over Stony Creek

Halifax County

Bridge No. 410131 on I-95 (Northbound) over SR 1742 and CSX Railroad

Bridge No. 410139 on I-95 (Northbound) over Roanoke River

Northampton County

Bridge No. 650009 on I-95 (Northbound) over Roanoke River

R-5777D

Fiber Optic Conduit Attachment Systems (Conduit) may be attached to the following structures on US 70:

Carteret County: noneCraven County:

Bridge No. 240085 on US 70 (Eastbound) over SR 1004 and NSRR & NCRR Railroad

Bridge No. 240084 on US 70 (Westbound) US 17N / NC 55N over Trent River

Jones County: - noneLenoir County:

Bridge No. 530062 on US 70 (Westbound) over Neuse River

Bridge No. 530057 on US 70 (Westbound) over Neuse River Overflow

Wayne County:

Bridge No. 950383 on US 70 Bypass (Westbound) over New Hope Rd & NCRR/NSRR

Bridge No. 950381 on US 70 Bypass (Westbound) over Bear Creek

Bridge No. 950379 on US 70 Bypass (Westbound) over Reedy Branch

Bridge No. 950366 on US 70 Bypass (Westbound) over Stoney Creek

Bridge No. 950358 on US 70 Bypass (Westbound) over CSX Railroad

Bridge No. 950353 on US 70 Bypass (Westbound) over I-795

Bridge No. 950375 on US 70 Bypass (Westbound) over SR 1326 and Little River

Johnston County:

Bridge No. 500103 on US 70 (Westbound) over NCRR/NS Railroad

Bridge No. 500521 on US 70 Bypass (Westbound) over CSX Railroad

Bridge No. 500601 on US 70 Bypass (Eastbound) over Little Creek

Bridge No. 500579 on US 70 Bypass (Westbound) over Austin Pond

Bridge No. 500597 on US 70 Bypass (Westbound) over Tributary Swift Creek

Bridge No. 500603 on US 70 Bypass (Eastbound) over SR 1563 (Little Creek Church Rd)

HO-0002A, B & C

Fiber Optic Conduit Attachment Systems (Conduit) may be attached to the following structures on US 74:

Buncombe County:

Bridge No. 100238 on I-26/ US 74 over Hominy Creek

Bridge No. 100214 (EBL) or 100211 (WBL) on I-26/ US 74 over French Broad River

Henderson County:

Bridge No. 440234 (EBL) or 440233 (WBL) on I-26/ US 74 over Cane Creek

Bridge No. 440230 (EBL) or 440228 (WBL) on I-26/ US 74 over Norfolk Southern Railroad

Bridge No. 440212 (EBL) or 440211 (WBL) on I-26/ US 74 over Clear Creek

Bridge No. 440112 (EBL) or 440108 (WBL) on I-26/ US 74 over Green River

Polk County:

Bridge No. 740224 (EBL) or 740225 (WBL) on US 74 over Green River and River Crest Pkwy.

Rutherford County:

Bridge No. 800647 (EBL) or 800646 (WBL) on US 74 over Broad River and Coxe Rd.

Bridge No. 800044 (EBL) or 800047 (WBL) on US 74 over CSX Railroad

Bridge No. 800083 (EBL) or 800084 (WBL) on US 74 over Second Broad River

Bridge No. 800092 (EBL) or 800093 (WBL) on US 74 over Webbs Creek

Cleveland County:

Bridge No. 220006 (EBL) or 220008 (WBL) on US 74 over abandoned railroad

Bridge No. 220048 (EBL) or 220049 (WBL) on US 74 over Sandy Run

Bridge No. 220059 (EBL) or 220050 (WBL) on US 74 over Beaverdam Creek

Bridge No. 220073 (EBL) or 220074 (WBL) on US 74 over Brushy Creek

Bridge No. 220079 (EBL) or 220080 (WBL) on US 74 over First Broad River

Bridge No. 220101 (EBL) or 220102 (WBL) on US 74 over Buffalo Creek

Gaston Country:

Bridge No. 350071 on US 74 over Norfolk Southern Railroad

Bridge No. 350082 on US 74 over South Fork Catawba River

Bridge No. 350091 on US 74 over Catawba River

Mecklenburg County:

Bridge No. 590830 (NBL) or 590829 (SBL) on US 74/ I-485 over Norfolk Southern Railroad

Bridge No. 590638 (WBL) or 590639 (EBL) on US 74/ I-485 over Sugar Creek

Bridge No. 590604 (WBL) or 590603 (EBL) on US 74/ I-485 over Little Sugar Creek

Bridge No. 590671 (WBL) or 590670 (EBL) on US 74/ I-485 over McMullen Creek

Bridge No. 590673 (WBL) or 590672 (EBL) on US 74/ I-485 over McAlpine Creek

Bridge No. 590802 (WBL) or 590803 (EBL) on US 74/ I-485 over CSX Railroad

Union County:

Bridge No. 890550 (WBL) or 890551 (EBL) on US 74 Bypass (Monroe Expressway) over South Fork Crooked Creek

Bridge No. 890491 (WBL) or 890492 (EBL) on US 74 Bypass (Monroe Expressway) over Stewarts Creek

Bridge No. 890499 (WBL) or 890500 (EBL) on US 74 Bypass (Monroe Expressway) over Richardson Creek

Bridge No. 890501 (WBL) or 890502 (EBL) on US 74 Bypass (Monroe Expressway) over East Fork Stewart Creek

Bridge No. 890507 (WBL) or 890508 (EBL) on US 74 Bypass (Monroe Expressway) over McIntyre Rd & Meadow Branch

Bridge No. 890511 (WBL) or 890512 (EBL) on US 74 Bypass (Monroe Expressway) over CSX Railroad and US 74

Anson County:

Bridge No. 030004 (WBL) or 030003 (EBL) on US 74 over Lanes Creek

Bridge No. 030033 (WBL) or 030032 (EBL) on US 74 over Brown Creek

Bridge No. 030050 (WBL) or 030049 (EBL) on US 74 over Goulds Fork

Bridge No. 030074 (WBL) or 030073 (EBL) on US 74 over CSX/ Seaboard Coastline Railroad

Bridge No. 030081 (WBL) or 030078 (EBL) on US 74 over Pee Dee River

Richmond County:

Bridge No. 760215 (WBL) or 760216 (EBL) on US 74 Bypass over CSX Railroad & Hitchcock Creek

Bridge No. 760203 (WBL) or 760204 (EBL) on US 74 Bypass over CSX Railroad

Bridge No. 760207 (WBL) or 760208 (EBL) on US 74 Bypass over Marks Creek

Bridge No. 760210 (WBL) or 760209 (EBL) on US 74 Bypass over NC 381 & CSX Railroad

Bridge No. 760211 (WBL) or 760212 (EBL) on US 74 Bypass over CSX Railroad

Scotland County:

Bridge No. 820016 (WBL) or 820009 (EBL) on US 74 over CSX Railroad

Bridge No. 820023 (WBL) or 820022 (EBL) on US 74 over Gum Swamp

Bridge No. 820060 (WBL) or 820057 (EBL) on US 74 over Norfolk Southern Railroad

Bridge No. 820072 (WBL) or 820071 (EBL) on US 74 over Little Creek

Bridge No. 820073 (WBL) or 820094 (EBL) on US 74 over US 74 Bus & CSX Railroad

Bridge No. 820096 (WBL) or 820095 (EBL) on US 74 over Big Shoe Creek

Bridge No. 820098 (WBL) or 820097 (EBL) on US 74 over SR 1436 & CSX Railroad

Robeson County:

Bridge No. 770455 (WBL) or 770454 (EBL) on US 74 over CSX Railroad

Bridge No. 770457 (WBL) or 770456 (EBL) on US 74 over CSX Railroad

Bridge No. 770480 (WBL) or 770481 (EBL) on US 74 over CSX Railroad

Bridge No. 770110 (WBL) or 770465 (EBL) on US 74 over Lumber River Overflow

Bridge No. 770118 (WBL) or 770466 (EBL) on US 74 over Lumber River

Columbus County:

Bridge No. 230004 (WBL) or 230097 (EBL) on US 74 over Lumber River Overflow

Bridge No. 230018 (WBL) or 230398 (EBL) on US 74 over Lumber River Overflow

Bridge No. 230054 (WBL) or 230053 (EBL) on US 74 over White Marsh Swamp

Bridge No. 230384 (WBL) or 230383 (EBL) on US 74 over Friar Swamp

Bridge No. 230385 (WBL) or 230386 (EBL) on US 74 over Friar Swamp
Bridge No. 230387 (WBL) or 230388 (EBL) on US 74 over Friar Swamp
Bridge No. 230086 (WBL) or 230083 (EBL) on US 74 over Livingston Creek

Brunswick County:

Bridge No. 090005 (WBL) or 090004 (EBL) on US 74 over Hood Creek

Project Details

All Conduit shall be on the exterior face of bridge structures.

Conduit shall not be carried through existing backwall or wingwall elements of bridge structures.

Conduit shall not be carried through interior girder bays.

Conduit attachment will not be permitted on girder elements of any bridge structures.

When attached, Conduit shall not affect the existing vertical clearance of the bridge.

Epoxy anchor systems will only be permitted for horizontal attachment connections. No overhead or vertically loaded epoxy anchoring connections will be allowed.

Conduit alignment shall be designed without disturbance of the existing approach slabs and guardrail posts. Conduit may be attached to outside face of wingwall.

Conduit shall include Limited Access Junction Boxes (see Project Special Provision- Junction Boxes (Limited Access Facilities) for details) at both ends of each bridge structure. Limited Access Junction Boxes shall be located as close to approach shoulder as practical without disturbance to existing approach slabs and guardrail posts.

Conduit shall include all expansion joints as required by manufacturer. Conduit assembly shall also be designed to accommodate bridge thermal movements calculated per Section 6.2.3 of the Structures Management Unit Manual.

Structures Management Unit detail for Fiber Optic Conduit attachment to barrier rail may be used. The standard detail is found in Structures English Cell Library for "Fiber Optic Conduit" and can be found in the Special Provision "Fiber Optic Conduit System (RGC-Hanger)". Consideration for an alternate conduit material other than Rigid Galvanized Conduit will be made at the discretion of, and upon review of such alternative by, the Department.

RAILROAD COORDINATION SCOPE OF WORK

General:

The Design-Build Team shall be responsible for coordinating with Norfolk Southern Railway, North Carolina Railroad, Coastal Carolina Railroad (CLNA), and CSX Transportation (Collectively referred to as Railroad Owners) to secure the necessary agreements or amendments to the existing railroad agreements for the addition of conduit attached to the highway bridges over, or bored under, the tracks operated and maintained by each Railroad Owner. Any new agreement or existing agreement modification that is necessary, as determined by NCDOT and/ or each Railroad Owner, shall be the responsibility of the Design-Build Team.

Costs:

The Design-Build Team shall be responsible for all costs associated with this project to include, but not be limited to, plan reviews, materials furnished by Railroad Owners, signals and communications work, track and related construction by Railroad Companies and/or their representative(s), any delays to train operations or maintenance crews, required insurances, railroad flagging, right of way acquisition, and construction engineering.

The Design-Build Team shall be responsible for all construction required. The Railroad Owners will not incur cost, and the Design Build Team shall not enter into or onto any rail corridor until an Agreement has been amended or executed, insurance requirements are met, and each Railroad Owner receives written authorization to incur cost.

Preparation for Construction within the Existing Railroad Owners Right of Way

- I. The Design-Build Team shall comply with the following applicable documents, unless noted otherwise elsewhere in this RFP and / or a design exception is received from the Railroad Owner and NCDOT via the NCDOT Design-Build Unit:
 - A. *AREMA Manual for Railway Engineering*, latest edition
 - B. Norfolk Southern Railway – *Standard Specifications for Materials and Construction*, latest edition
 - C. Norfolk Southern Railway - *Public Projects Manual*, latest edition
 - D. *CSX Transportation Public Project Information*, latest edition
 - E. *Federal Aid Policy Guide 23 CFR 140I*
 - F. *Federal Aid Policy Guide 23 CFR 646*
 - G. NCDOT *Construction Manual* Section 105-8
 - H. NCDOT *Standard Specifications for Roads and Structures*, Section 107-9 (Excluding Paragraph 2)

- I. *North Carolina Administrative Code* Section T19A: 02B, 0150 through 015
- II. The Design-Build Team shall verify the number of trains per day and the maximum speed allowed with the Railroad Owners.

Railroad inspection and maintenance requirements, in addition to normal train operations, will occur that may impact construction activities.
- III. Railroad traffic shall be maintained at current levels at all times.
- IV. The Design-Build Team shall design and construct conduit attachments over existing track that will not decrease any existing vertical or horizontal clearance from the existing track to the bridge.

Arrangements for Protection and Adjustments to Existing and Proposed Railroad Crossings Surface and Roadbeds:

- I. The Design-Build Team shall make the necessary arrangements with the Railroad Owners for the installation of temporary grade crossing surfaces, if necessary. Temporary grade crossing surfaces shall conform to the Railroad Owners standard. All crossing surfaces, including but not limited to all grade crossing signals, gates, and any related train control signals/communications systems, shall be procured, installed and removed by the Railroad Company, or their representative, at the Design-Build Team's expense.

The Design-Build Team shall not commence any work on the Railroad Owners right of way / easement until all agreements have been executed, insurance acquired and approved in accordance with the Railroad Owners policies and procedures, and all construction plans have been approved by NCDOT and Railroad Owners. The Design-Build Team shall make the necessary arrangements with the Railroad Owners that are required to protect against property damage that may result in loss of service, expense, or loss of life. The Design-Build Team shall be responsible for all damage to the Railroad Owners resulting from their operations and the Railroad Owners may issue a stop order until all dangerous situations are remedied.

The Design-Build Team shall be responsible for providing Railroad Protective Liability Insurance for Bodily Injury Liability, Property Damage Liability, and Physical Damage to Property to the Railroad Owners and the Railroad Operators, identifying the Railroad Owners as the insured party, during the duration of the time work is being performed on or over the railroad right of way / easement. Separate policies shall be required for each Railroad Owner or Operator. The Design-Build Team shall be responsible for verifying and obtaining the appropriate insurance and coverage with the Railroad Owners. Other insurance requirements, including those for all subcontractors, are detailed in the documents referenced herein. Although not anticipated, the Design-Build Team shall be responsible for any required Roadway Worker Protection training / certifications.

- II. Prior to any utility installation, removal or relocation across the Railroad Owners right of way / easement, including but not limited to pipelines and / or electrical and communication cable routings over or under railroad-owned facilities, the Design-Build Team shall coordinate with the Railroad Owners and private utility owners to obtain the necessary permits and secure the appropriate Encroachment Agreements. At a minimum, the Design-Build Team shall assist the private utility owners in obtaining their respective Encroachment Agreements in the private utility owner's name. In accordance with the requirements noted herein and the Railroad Owners' specifications, the private utility owner will be responsible for all associated fees and provide the necessary insurance coverage.

All work associated with any utility installation across the Railroad Owners' right of way / easement shall adhere to the requirements noted herein and the Railroad Owners' specifications.

- III. After negotiations among the Department, the Design-Build Team and the Railroad Owners have been finalized, and approval obtained from the Board of Transportation, the Design-Build Team shall submit executed agreements and plans to NCDOT's State Structures Engineer, via the NCDOT Design-Build Unit, for plan approval and final agreement execution by NCDOT, prior to authorizing railroad work. After approval by NCDOT, one copy of the executed agreement will be returned to the Design-Build Team and one copy forwarded to the NCDOT's Resident Engineer, prior to any construction work by the Design-Build Team or NSR / CSXT. This section particularly applies if a modification to an agreement is necessary.

Coordination with Norfolk Southern Railway and North Carolina Railroad

The Design-Build Team shall coordinate with NSR through the NSR General Engineering Consultant (GEC), TGS Engineers. The Design-Build Team shall coordinate with Mr. Jeffrey Brittain at TGS Engineers, 107-A Mica Avenue, Morganton, NC 28655, (828) 437-4681 Ext. 16) . to obtain plan approval and a partially executed legal agreement with NSR and the Department of Transportation (which includes NCDOT Rail Division plan review) as the parties in the agreement for the NS overpass grade separation conduit installation. For crossings of the rail line owned by NCR and operated by NS, The Design-Build Team shall coordinate with NCR through the NCR Vice President, Mr. Donald Arant, 2809 Highwoods Blvd, Raleigh, NC 27604 at 919 954 7601.

Plan approval shall be based on multiple submittals including at minimum a preliminary plan submittal and 90% plan submittal. The preliminary plan submittal to the NCR/NS shall include the NSR's "Overpass Grade Separation Data Sheet," as applicable, appropriate roadway plan sheets showing impacts to the right of way / easement, erosion control plans, and drainage calculations for any drainage on or across the NCR/NS's right of way / easement, and bridge plans showing a vertical and horizontal alignment and preliminary general drawings. The 90% plan submittal shall include all necessary details, insets, and notes for construction with no substantial changes to the alignments or layout shown in the preliminary plan submittal and all supporting design calculations. An electronic copy (pdf format) of all review plans and associated

data shall be submitted to NCR/NS through the NCDOT Design-Build Unit. If any re-submittals of plans or any additional information is required, an electronic copy (pdf format) shall be submitted to the NCDOT Design-Build Unit for forwarding to the NCR/NS. RFC Plans shall be submitted to NCR/NS before construction begins. For RFC Plans, a minimum of three (3) half-size sets and an electronic copy of the plans (pdf format) shall be submitted to the NCDOT Design-Build Unit for forwarding to the NCR/NS. Working Drawings affecting the NCR/NS's operations and / or right of way / easement shall follow the submittal process as outlined in the 2018 NCDOT *Standard Specifications for Roads and Structures* or Special Provisions. The Department will review all agreement modifications prior to submittal to NCR/NS. The Department will execute and distribute the agreement modifications within 14 calendar days of Board of Transportation approval. The agreements, and any modifications thereto, shall include necessary Force Account items, including but not limited to, preliminary engineering, construction engineering, crossing surfaces, track materials, track construction, signals and flagging. The railroad agreements state that the Department will be responsible for payment of the NSR's Force Account work and NSR expenses; however, the Design-Build Team shall reimburse the Department for these costs including all Force Account estimate overruns. This reimbursement shall be incidental to the lump sum price bid for the project. Upon request, the Department will provide copies of the NSR invoices to the Design-Build Team for review. The Design-Build Team shall have ten (10) days to provide written comments to the NCDOT Design-Build Unit, after which the Department will pay the invoice. The Design-Build Team shall be responsible for maintaining records to verify the invoice items.

Coordination with CSX Transportation

The Design-Build Team shall coordinate with the primary owner of CSXT through the CSXT general Engineering Consultant (GEC), to be named at project kickoff. The Design-Build Team shall coordinate with Mr. Troy Creasy of CSX, 4900 Old Osborne Tnpke., Suite 200, Richmond, VA 23231, (804) 226-7718 to obtain coordination procedures for plan approval and, if needed, a partially executed legal agreement with CSXT and the NCDOT as the parties in the agreement for proposed roadway work. The Department will review the agreement prior to submittal to the CSXT. The Department will execute and distribute the Agreement within 14 calendar days of Board of Transportation approval. The agreement, and any modifications thereto, shall include necessary Force Account items, including but not limited to, preliminary engineering, construction engineering, flagging, signal and communication lines, and other work performed by the CSXT, as necessary. CSXT has sole authority to determine the need for flagging required to protect its operations and property. The railroad agreements state that the Department will be responsible for payment of the CSXT's Force Account work and CSTX expenses; however, the Design-Build Team shall reimburse the Department for these costs including all Force Account estimate overruns. This reimbursement shall be incidental to the lump sum price bid for the project. Upon request, the Department will provide copies of the CSXT invoices to the Design-Build Team for review. The Design-Build Team shall have ten (10) days to provide comments to the Department, after which the Department will pay the invoice. The Design-Build Team shall be responsible for maintaining records to verify the invoice items.

The preliminary plan and final plan submittals to CSXT shall include roadway plans, the Railroad's "Overhead Bridge Crossing Data," appropriate roadway plan sheets showing impacts to the CSXT right of way / easement, erosion control plans, and drainage calculations for any drainage on or across the CSXT's right of way / easement and bridge plans showing a vertical and

horizontal alignment and preliminary general drawings. Electronic versions of the preliminary plans, final plans and data shall be submitted to Arcadis through the NCDOT Design-Build Unit. If plan re-submittals, RFC Plans and / or any additional information are required, the Design-Build Team shall submit electronic versions to Arcadis through the NCDOT Design-Build Unit. Working Drawings affecting CSXT's operations and / or right of way / easement shall follow submittal process as outlined in the 2018 NCDOT *Standard Specifications for Roads and Structures* or Special Provisions.

Coordination with Coastal Carolina Railroad (CLNA)

The Design-Build Team shall coordinate with Alan Bridgers, General Manager Carolina Coastal Railway at 252-237-8259 to obtain coordination procedures for plan approval and, if needed, a partially executed legal agreement with CLNA and the NCDOT as the parties in the agreement for proposed roadway work. The Department will review the agreement prior to submittal to the CLNA. The Department will execute and distribute the Agreement within 14 calendar days of Board of Transportation approval. The agreement, and any modifications thereto, shall include necessary Force Account items, including but not limited to, preliminary engineering, construction engineering, flagging, signal and communication lines, and other work performed by the CLNA, as necessary. CLNA has sole authority to determine the need for flagging required to protect its operations and property. The railroad agreements state that the Department will be responsible for payment of the CLNA's Force Account work and CLNA expenses; however, the Design-Build Team shall reimburse the Department for these costs including all Force Account estimate overruns. This reimbursement shall be incidental to the lump sum price bid for the project. Upon request, the Department will provide copies of the CLNA invoices to the Design-Build Team for review. The Design-Build Team shall have ten (10) days to provide comments to the Department, after which the Department will pay the invoice. The Design-Build Team shall be responsible for maintaining records to verify the invoice items.

The preliminary plan and final plan submittals to CLNA shall include roadway plans, appropriate roadway plan sheets showing impacts to the CLNA right of way / easement, erosion control plans, and drainage calculations for any drainage on or across the CLNA's right of way / easement and bridge plans showing a vertical and horizontal alignment and preliminary general drawings. Electronic versions of the preliminary plans, final plans and data shall be submitted through the NCDOT Design-Build Unit. If plan re-submittals, RFC Plans and / or any additional information are required, the Design-Build Team shall submit electronic versions through the NCDOT Design-Build Unit. Working Drawings affecting CLNA's operations and / or right of way / easement shall follow submittal process as outlined in the 2018 NCDOT *Standard Specifications for Roads and Structures* or Special Provisions.

Coordination with NCDOT Rail Division

All plans submitted to NCR, NSR, CLNA and / or CSXT, as required above, shall be submitted to the NCDOT Rail Division through the NCDOT Design-Build Unit.

TRANSPORTATION MANAGEMENT SCOPE OF WORK (09-29-20)

LAWS, STANDARDS, AND SPECIFICATIONS

The Design-Build Team shall design the Transportation Management Plan (TMP) in accordance with the requirements of this RFP and the version of the standards listed below that are effective on the Technical Proposal submittal date.

- NCDOT *Standard Specifications for Roads and Structures*
- NCDOT *Roadway Standard Drawings*
- FHWA *Manual on Uniform Traffic Control Devices* (MUTCD)
- NCDOT *Supplement to the Manual on Uniform Traffic Control Devices* (NCSMUTCD)
- AASHTO *A Policy on Geometric Design of Highways and Streets*
- NCDOT *Roadway Design Manual*
- AASHTO *Roadside Design Guide*
- Americans with Disabilities Act of 1990 (ADA)
- FHWA *Standard Highway Signs*
- NCDOT *Design-Build Submittal Guidelines*
- FHWA *Rule on Work Zone Safety and Mobility* (23 CFR 630 Subpart J and K)
- Transportation Research Board *Highway Capacity Manual*
- NCDOT *Transportation Management Plans Design Manual*

References

The Design-Build Team shall use the references provided on the site below as supplementary guidelines and requirements for the design and implementation of the Transportation Management Plan (TMP).

<https://connect.ncdot.gov/projects/WZTC/Pages/default.aspx>

Prequalification

The Design-Build Team shall select a Private Engineering Firm (PEF) that has experience developing TMPs on comparable projects for the North Carolina Department of Transportation (NCDOT) and maintains prequalification code 00541 (Traffic Management Plan - Level 1 and 2).

TRANSPORTATION MANAGEMENT PLANS

The Design-Build Team shall prepare Transportation Management Plans (TMP) that include Temporary Traffic Control Plans (TTCP) and a Traffic Operations Plan (TOP).

The Design-Build Team shall produce TMPs for each phase of work that impacts road users. The TMPs shall include details of all traffic control devices, and signage applicable to each phase of work. The information on the TMP shall be of sufficient detail to allow verification of design criteria and safety requirements. The Design-Build Team shall develop TMPs that include procedures to communicate TMP information to the public about road and travel conditions within the work zone and affected roadway network.

A Transportation Management Phasing Concept (TMPC) shall be prepared by the Design-Build Team to present the Design-Build Team’s approach to all areas covered under the TMP, including hauling of materials to, from, and within the project right of way. The Design-Build Team shall include the TMPC in the Technical Proposal. The Design-Build Team shall submit the TMPC for Department review and acceptance and shall address NCDOT comments on the TMPC prior to commencing production of the TMP for each phase of work or any construction. Any changes to the TMPC after acceptance by NCDOT shall require a submittal for review prior to any future phasing submittals.

LANE AND ROAD CLOSURE NOTIFICATION

Lane Closure Notice (LCN)

The Design-Build Team shall issue a Lane Closure Notice (LCN) to NCDOT and affected government entities a minimum of thirty (30) calendar days prior to the publication of any notices or placement of any traffic control devices associated with lane closures, or other change in traffic control requiring lane closures. The Design-Build Team will be allowed to issue a single LCN for multiple / consecutive lane closures that occur in the same location.

For an LCN utilizing a non-NCDOT controlled facility, the Design-Build Team shall secure concurrence in writing from the controlling government entity. An LCN shall contain the estimated date, time, duration, and location of the proposed work. The Design-Build Team shall keep NCDOT informed of any and all changes or cancellations of proposed lane closures prior to the date of their implementation.

If an emergency condition should occur, an LCN shall be provided to NCDOT within two (2) days after the event. For non-NCDOT controlled facilities, the Design-Build Team shall immediately notify the controlling government entity.

GENERAL DESIGN AND CONSTRUCTION REQUIREMENTS

Maintenance of Access

Maintain access to all businesses, schools, residences, bus stops, mass transit facilities, park and ride lots, and emergency services at all times. Prior to incorporation, obtain written approval from the Engineer on the method to maintain access.

In accordance with the Department’s Policy on Evaluating Temporary Accommodations for Pedestrians during Construction, found on the website noted below, the Design-Build Team shall maintain pedestrian accommodations in all areas as follows:

Roadway	Minimum Level of Pedestrian Accommodation
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US-70 from Hestron Drive to the NC Ports, Morehead City	Basic
US-74 from SR-1472 (Salisbury St) to SR-1714 (Stanback Ferry Ice Plant Rd), Wadesboro	Basic
Any other -L- location or -Y- Line containing sidewalks, shared use paths or worn foot paths	Basic
All Other Roads	Absence of Need

<https://connect.ncdot.gov/projects/WZTC/Documents/AccomPedinWZProc.pdf>

Traffic Control Devices

The Design-Build Team shall use traffic control devices that conform to all NCDOT requirements and are listed on the NCDOT Approved Products List. The Approved Products List may be referenced on the website noted below:

<https://apps.ncdot.gov/vendor/approvedproducts/>

The use of any devices that are not shown on the NCDOT Approved Products List shall require written approval from the Design-Build Unit prior to incorporation.

When within 1000' of a signalized intersection, channelizing device spacing shall not exceed a distance in feet equal to the posted speed limit. When beyond 1000' to a signalized intersection, channelizing device spacing shall not exceed a distance in feet equal to twice the posted speed limit. Channelizing devices shall be spaced ten feet on-center in radii. Channelizing devices shall be two feet off the edge of an open travelway when lane closures are not in effect. Skinny drums shall only be allowed as defined in Section 1180 of the *NCDOT Standard Specifications for Roads and Structures*.

Portable changeable message signs (PCMS) should be placed off the shoulder of the roadway and outside of the clear zone. If a PCMS must be placed on the roadway shoulder or within the clear zone, it shall be delineated with retroreflective temporary traffic control (TTC) devices. When PCMSs are not being used to display TTC messages, they should be relocated such that they are outside of the clear zone and turned away from traffic. If relocation is not practical, the PCMS shall be delineated with retroreflective TTC devices.

Lane and Shoulder Requirements

On I-95, US-70 and US-74, the Design-Build Team shall not install more than two (2) miles of lane closure in any one direction, measured from the beginning of the merge taper to the end of the lane closure.

For simultaneous lane closures in any one direction on any road within the project limits, a minimum of three (3) miles shall be provided between lane closures. The distance between lane

closures shall be measured from the end of one closure to the beginning of the taper of the next lane closure.

On two-lane, two-way facilities, that cross I-95, US-70 or US-74, the Design-Build Team shall not install more than five hundred (500) feet of lane closure in any one direction on any roadway within the project limits or in conjunction with this project, measured from the beginning of the merge taper to the end of the lane closure.

The Design-Build Team shall remove lane closure devices from the lane when work is not being performed behind the lane closure or when a lane closure is no longer needed.

The Design Build Team shall place the necessary traffic control procedures for either a Lane closure, Shoulder closure or the display of portable Advance Warning signs using NCDOT Roadway Standard Drawings when personnel and /or equipment are working within the following distances from an open travel lane and not protected by existing traffic barrier:

All Interstates and all roads with a posted speed limit of 50 MPH or greater:

- From 10 feet or less, close the nearest open travel lane.
- From 11 to 20 feet, close the nearest open shoulder.
- From 21 to 30 feet, display Utility Advance Warning signs (W21-7).
- Greater than 30 feet, no traffic control signs, or devices are required.

All other roads:

- From 5 feet or less, close the nearest open travel lane.
- From 6 to 15 feet, close the nearest open shoulder.
- From 16 to 20 feet display Utility Advance Warning signs (W21-7).
- Greater than 20 feet, no traffic control signs, or devices are required.

Impacts to Other Network Roadways

The Design-Build Team shall coordinate with the Division Maintenance Engineer, Resident Engineer, Division Traffic Engineer, Rail Division, and Statewide Transportation Operations Center (STOC) to manage traffic operations within the work zone and other roadways within the network that may be affected by the work zone activities. Coordination shall include providing notification of planned lane or shoulder closures, traffic management, access management, and incidents.

The Design-Build Team shall take steps to minimize disruptions to existing roadway facilities during construction and shall demonstrate how the traffic control phasing minimizes inconvenience to motorists on all roads.

Signing

When portable work zone signs are not in use for periods longer than 30 minutes, the Design-Build Team shall lay the portable work zone sign flat on the ground and collapse the sign stand and lay it flat on the ground.

The Design-Build Team shall ensure proper signing is in place at all times during construction as required by the MUTCD. Guide signs shall be maintained or modified as required by the TMP throughout the project duration. All temporary signing shall be shown on the Traffic Control Plans or Temporary Signing Plans to be reviewed and approved by the Work Zone Traffic Control Section and the Signing and Delineation Unit prior to incorporation.

PROJECT REQUIREMENTS AND TIME RESTRICTIONS

All time restrictions and notes shall be included in the TMP General Notes, unless noted otherwise elsewhere in this RFP.

Intermediate Contract Times 2 through 7 for Lane Narrowing, Lane Closure, Holiday and Special Event Restrictions

Except as allowed otherwise elsewhere in this RFP, the Design-Build Team shall maintain the existing traffic pattern and shall not close or narrow a single lane of traffic during the times listed in ICT 2 through 7.

Intermediate Contract Time	Facility	Days	Time Restrictions
2	I-95, including all ramps and loops	Monday through Thursday	7:00 a.m. to 7:00 p.m.
		Friday through Sunday	7:00 a.m. to 9:00 p.m.
	I-40 and US-70 from I-40 to NC-581, including all ramps and loops	Monday through Sunday	5:00 am to 9:00 pm
	I-85, I-485, and I-26, including all ramps and loops	Monday through Sunday	6:00 am to 9:00 pm
3	US-70, east of NC-581 and more than 1 mile from a signalized intersection	Monday through Friday (Year-round)	5:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m.
		Friday through Sunday (May 15 thru Sept. 15)	Friday at 5:00 a.m. Until Sunday at 8:00 p.m.

	US-70, east of NC-581 and within 1 mile of a signalized intersection	Monday through Thursday	5:00 a.m. to 7:00 p.m.
		Friday through Sunday	Friday at 5:00 a.m. Until Sunday at 8:00 p.m.
4	US-74, US-74 Bypass, & US-74 Alternate (Mecklenburg, Union, Gaston, Cleveland, and Brunswick Counties), including all ramps and loops	Monday through Sunday	6:00 am to 9:00 pm
5	US-74 (other counties and more than 1 mile from a signalized intersection), including all ramps and loops.	Monday through Friday	6:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m.
	US-74 (other counties and within 1 mile of a signalized intersection), including all ramps and loops	Monday through Friday	6:00 a.m. to 7:00 p.m.
		Saturday and Sunday	9:00 a.m. to 6:00 p.m.
6	-Y- Lines with AADT less than 8,000	Monday through Sunday	No Restrictions
	-Y- Lines with AADT 8,000-20,000	Monday through Friday	6:00 a.m. to 9:00 a.m. And 4:00 p.m. to 7:00 p.m.
7	-Y- Lines with AADT greater than 20,000	Monday through Sunday	6:00 a.m. to 7:00 p.m.
		Monday through Friday	6:00 a.m. to 9:00 p.m.

	NC-146 and NC-280 (Buncombe County)	Saturday and Sunday	6:00 a.m. to 9:00 p.m.
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Official AADT volumes for determining time restrictions are available at the following link:

<https://connect.ncdot.gov/resources/State-Mapping/Pages/Traffic-Volume-Maps.aspx>

In addition, the Design-Build Team shall not close or narrow a lane of traffic on the aforementioned facilities, detain, and / or alter the traffic flow on or during holidays, holiday weekends, special events, or any other time when traffic is unusually heavy. At a minimum, these requirements / restrictions shall apply to the following schedules:

- For New Year's between the hours of 5:00 a.m. December 31st and 9:00 p.m. January 2nd. If New Year's Day is on a Friday, Saturday, Sunday or Monday then between the hours of 5:00 a.m. December 31st and 9:00 p.m. the following Tuesday.
- For Easter, between the hours of 5:00 a.m. Thursday and 9:00 p.m. Monday.
- For Memorial Day, between the hours of 5:00 a.m. Friday and 9:00 p.m. Tuesday.
- For Independence Day, between the hours of 5:00 a.m. July 3rd and 9:00 p.m. July 5th. If Independence Day is on a Friday, Saturday, Sunday or Monday, then between the hours of 5:00 a.m. the Thursday before Independence Day and 9:00 p.m. the Tuesday after Independence Day.
- For Labor Day, between the hours of 5:00 a.m. Friday and 9:00 p.m. Tuesday.
- For Thanksgiving Day, between the hours of 5:00 a.m. Tuesday and 9:00 p.m. Monday.
- For Christmas, between the hours of 5:00 a.m. the Friday before the week of Christmas Day and 9:00 p.m. the following Tuesday after the week of Christmas Day.

Liquidated Damages for Intermediate Contract Time #2 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on I-95, I-40, I-85, I-485, I-26 and US-70 from I-40 to NC-581, including all ramps and loops, are \$2,500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #3 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on US-70 east of NC-581, including all ramps and loops, are \$500.00 per hour or any portion thereof.

Liquidated Damages for Intermediate Contract Time #4 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on US-74, US-74 Bypass, & US-74 Alternate (Mecklenburg, Union, Gaston, Cleveland, and Brunswick Counties), including all ramps and loops, are \$500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #5 for the above lane narrowing, lane closures, holiday and special event time restrictions for a single lane on US-74 (other Counties), including all ramps and loops, are \$500.00 per hour or any portion thereof.

Liquidated Damages for Intermediate Contract Time #6 for the above lane narrowing, lane closure, holiday and special event time restrictions on all -Y- Line Roads with AADTs between 8,000 and 20,000 are \$500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #7 for the above lane narrowing, lane closure, holiday and special event time restrictions on all -Y- Line Roads with AADTs greater than 20,000, NC-146, and NC-280 are \$1250.00 per 15-minute period or any portion thereof.

ITS SCOPE OF WORK

GENERAL

Design, furnish, and install new ITS Communications Fiber as described in this RFP. Integrate the new fiber with the existing ITS devices as well as any existing ITS fiber within the project limits. ITS devices include but are not limited to CCTV Cameras, Dynamic Message Signs and Traffic Signal Systems. Major items of work include, but are not limited to, the following:

- Approximately 600 Miles of ITS Trunk Line Fiber
- Approximately 600 Miles of ITS Device Line Fiber
- Drop Cables to Existing CCTV Cameras
- Drop Cables to Existing DMS
- Drop Cables to Existing Signal Systems
- Drop Cables to Weigh Stations
- Drop Cables to Rest Areas
- Drop Cable to Remote Weather Information System (RWIS)
- 35 ITS Fiber Hub Cabinets
- Cellular Connected Vehicle Site
- Junction boxes (Electrical and Oversized)
- Wood Poles
- Electrical service equipment

Furnish and install guardrail to protect ITS devices and ITS Fiber Hub Cabinets as required.

A pre-design meeting shall take place between the NCDOT ITS Section, the Design-Build Team, the Division 2, 3, 4, 5, 6, 8, 10, 12, 13 & 14 Traffic Engineers, the Regional ITS Engineers, Statewide Transportation Operations Center (STOC) Engineer and any other pertinent NCDOT personnel before ITS designs begins. The pre-design meeting shall, at a minimum, address equipment types, intended placement locations and scheduled installation and removal of devices. ITS Plan submittals shall only be reviewed and accepted by the NCDOT ITS Section after this pre-design meeting.

Acceptance of plans does not relieve the Design-Build Team of any obligation to design and build a complete system that meets the functional requirements of the RFP. The Design-Build Team is solely responsible for the correctness and constructability of the designs meeting all applicable standards.

The Design-Build Team shall coordinate with the Division Traffic Engineer, the Regional Traffic Engineer, the ITS Design Unit and the STOC throughout the project duration.

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.

Furnish and install all equipment and perform all work in accordance with ITUT, IEEE and TIA standards as well as in accordance with the relevant ITS Project Special Provisions found elsewhere in this RFP, the 2018 NCDOT *Standard Specifications for Roads and Structures*, the 2018 NCDOT *Roadway Standard Drawings* and the *ITS & Signals Generic Project Special Provisions Version 18.3* or the latest version at the time of letting found at the following website:

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

DESIGN REQUIREMENTS

➤ Communications

Design, furnish and install the field-to-center communication network using Fiber-optic cable. For all equipment not specified herein, provide product specifications for the Department's review and approval prior to incorporation. Furnish and install all new field equipment within the project limits.

The Department will furnish all cellular modems used on the project. The Design Build Team shall request the modems through the Engineer at least eight (8) weeks prior to scheduled installation.

The MCAS property that lies between Holly Drive and Jackson Drive in Havelock must be avoided. The fiberoptic cable must be installed within NCDOT right-of-way in the grassy median between Mimosa Drive and US Highway 70 west, where there is an existing line of trees and power poles.

The conduit shall be placed at a location which will avoid conflicts with future roadway widening (8-lane typical) within Control-of-Access areas. All other conduit shall be placed within the existing right-of-way to the farthest, most outer edge of right-of-way, while being in compliance with all environmental permits and minimizing utility impacts to the greatest extent possible.

The Design-Build Team shall place the conduit and trunk lines at all interchanges, up and down interchange ramps to avoid future relocations. Boring underneath overpass structures at interchanges will not be allowed.

NCDOT 144-Fiber Trunk Line

Design, furnish and install a minimum 144-fiber trunk line that runs between ITS hub cabinets. This trunk line is to run expressed between hub cabinets and should not be cut or spliced unless necessary for fiber installation purposes. All 144 fibers are to be terminated in a fiber-optic interconnect center in each hub cabinet and jumpered through. Label this 144-fiber cable and its interconnect centers "NCDOT ITS TRUNK LINE" in all junction boxes and hub cabinets. Store 50 feet of spare Trunk cable in each junction box and hub cabinet.

ITS devices should NOT be spliced into this 144-fiber trunk line. See the ITS Device Line concept drawing included in this RFP for additional information.

NCDOT 144-Fiber ITS Device Line

Design, furnish and install a separate minimum 144-fiber ITS device line that runs between hub cabinets and connects all ITS devices between the hub cabinets. These devices are listed later in this RFP. All 144 fibers are to be terminated in a fiber-optic interconnect center in each hub cabinet and jumpered through. Label this 144-fiber cable and its interconnect centers “NCDOT ITS DEVICE LINE” in all junction boxes and hub cabinets. Store 50 feet of spare Trunk cable in each junction box and hub cabinet. See the ITS Device Line concept drawing included in this RFP for additional information. Device line buffer tubes should be assigned as follows:

- CCTV, DMS, Signal Systems and other NCDOT facilities starting in Blue Buffer Tube
- Rest Areas in the Aqua buffer tube
- Weigh Stations in the Rose buffer tube

NCDOT 12-Fiber Drop Cable

Design, furnish and install 12-fiber drop cables from the ITS Device Line fiber to each ITS device in the project limits. Drop cables should be spliced into the ITS Device Line with a splice enclosure and terminated in the ITS device cabinet with a fiber-optic interconnect center. Drop Cables for devices that are co-located with, or within 100 feet, of a hub cabinet may be terminated in a fiber optic interconnect center in the hub cabinet. Label these 12 fiber drop cables and their interconnect centers “<DEVICE ID> DROP CABLE” in all junction boxes and hub cabinets. Store 50 feet of spare Drop cable in each junction box and ITS device cabinet.

NCDOT ITS Fiber Hub Cabinet

Design, furnish and install ITS Fiber Hub Cabinets as specified in the project special provisions and detail drawings included with this RFP. Hub cabinets should be climate controlled NEMA 4, 340 ITS cabinets adequately sized to accommodate all electrical equipment and communications equipment including but not limited to four (4) minimum 144-fiber interconnect centers, one (1) Ethernet hub switch, one (1) UPS and the cabinet air conditioning system. Approximate hub cabinet locations are as follows:

- NC/VA state line – HUB 13
- I-95 exit 173 – HUB 12
- I-95 exit 160 - HUB 11
- I-95 exit 138 (US 64) – HUB 10
- I-95 exit 119 (US 265/I-795) – HUB 9
- I-95 south of exit 97 (US 70 BYP) – HUB 8
- I-95 exit 81 (I-40) – HUB 7
- I-95 exit 73 (US 421) – HUB 6
- I-95 exit 56 (Bus 95) – HUB 5
- I-95 exit 38 (Future I-295) – HUB 4
- I-95 exit 22 – HUB 3
- I-95 exit 13 (I-74) – HUB 2

- NC/SC state line – HUB 1
- US 70 Bypass at I-40 and NC 540 – HUB 14
- US 70 at I-795 (Goldsboro) – HUB 15
- US 70 at Harvey Parkway (Kinston) – HUB 16
- US 70 at Trenton Rd. (MM 400) – HUB 17
- US 70 at S. Glenburnie Rd. (New Bern) – HUB 18
- US 70 at Slocum Rd. (Havelock) – HUB 19
- US 70 at NC Port (Morehead City, North side of road just before the Newport River Bridge) – HUB 20
- US 74 at I-140 (Wilmington) – HUB 21
- US 74 at NC 211 (Bolton) – HUB 22
- US 74 at US 76 – HUB 23
- I-74 at US 501 (Laurinburg) – HUB 24
- US 74 at US 1 (Rockingham) – HUB 25
- US 74 at US 52 (Wadesboro) – HUB 26
- US 74 at US 74 BYP (Monroe Expy East) – HUB 27
- I-485 at I-77 (Existing Node 20*) – HUB 29
- I-485 3300' North of I-85 South Interchange (Existing NCDOT Hub 6) – HUB 30
- I-85 at US 74 Interchange – HUB 31
- US 74 at US 74 BYPASS (Shelby) – HUB 32
- US 74 at US 221 (Forest City) – HUB 33
- US 74 at I-26 Interchange – HUB 34
- I-26 at US 64 (Hendersonville) – HUB 35
- I-26 at I-40 Interchange (Existing NCDOT Splice Cabinet*) – HUB 36

* - Existing hub to be replaced per this Scope of Work.

HUB numbers are for the purposes of this project only. Do not mark the HUB cabinets with these numbers. HUB 28 was intentionally skipped in the numbering.

HUB 8 at I-95 exit 97 (US 70) will have 2 backup ISP circuits installed by DIT. The design build team shall coordinate with the engineer and DIT to facilitate the installation of these circuits during the installation of this hub cabinet.

HUBs 1, 13, 20, 21, 27, 29 & 36 will be the end points of the fiber at these ends of the project. The fiber trunk lines will terminate in these hub cabinets in fiber-optic interconnect centers. The design-build team shall loop all fibers of each trunk cable back with jumpers in these interconnect centers in a manner that creates a continuous loop. (Example: Blue buffer tube, loop fiber 1 back to fiber 3, fiber 2 back to fiber 4, etc.)

Existing ITS Integration Locations

US 70 Bypass at I-40

The ITS hub cabinet at US 70 Bypass and I-40 will connect to the 144-fiber ITS cables along I-40 (running north and south installed under I-5111) and to existing 144-fiber ITS cable along

NC-540 (running west, installed under R-2828). The design build team shall extend these 3 cables into the new hub cabinet along with the two new 144-fiber Trunk lines installed under this project and terminate all 144 fibers of each cable in a fiber-optic interconnect center. Jumper the two 144-fiber I-40 cables through and loop the two new 144-fiber cables back with jumpers.

U-5713/R-5777A&B

U-5713/R-5777A&B will install 4x two-inch conduits and 1x 144-fiber cable along US 70 in James City from Thurman Rd. to north of Elder St. The design-build team may use this existing conduit and fiber as the ITS Device Line. The design build team shall be responsible for ensuring conduit and fiber are usable and shall be responsible for any repairs needed to use this fiber. The design-build team shall resplice the existing cable as needed to follow the same configuration as the rest of the fiber installed under this project.

US 74 at I-140

The Design-Build team shall install new HUB 21 at the US 74 & I-140 interchange. Route the Existing 72-fiber cable running both directions along I-140 and the existing drop cables into the new hub cabinet and terminate all fibers of each cable in separate interconnect centers.

I-95

US 74 fiber will tie into the I-95 fiber at HUB 2.

HUB 29 (Existing Node 20)

The Design-Build team shall replace existing Node 20 at I-485 and I-77 with new INFRA HUB 29. Route the 144-fiber NCDOT cable from the east and the 12-fiber NCTA drop cable (both installed under I-5507) as well as the two new 144-fiber cables from the west into this hub cabinet. Terminate all fibers of each cable in separate interconnect centers and jumper them through.

HUB 30 (Existing HUB 6)

The Design-Build team shall route all four 144-fiber cables, two from I-85 to the west and two from I-485 to the south, into existing NCDOT HUB 6 roughly 3300 feet north of the I-85/I-485 interchange. Terminate all fibers of all four cables in separate interconnect centers in the existing racks and jumper them through.

Forest City HUB Cabinet

The Design-Build team shall run a 48-fiber cable in a separate conduit from new HUB 33 to the DIT Data Center at 1371 Old Caroleen Rd Forest City, NC 28043. Terminate all 48 fibers in an interconnect center in HUB 33 and in the existing racks in the Data Center. Coordinate with DIT to identify building entrance and existing rack location for the fiber.

HUB 36

The design-Build Team shall replace the existing splice cabinet located at the I-26 & I-40 interchange (installed under I-4700) with a new INFRA hub cabinet. The design build team shall maintain all existing communications equipment located in this cabinet.

Hub Ethernet Switch

Hub switches shall be installed in each hub cabinet according to the Project Special Provisions and detail drawings included with this RFP. Hub switches shall be procured, programmed and installed by the Department of Information Technology (DIT). Contact the Engineer to request the hub switches from DIT 4 weeks in advance of installation. Allow one week for DIT to install each hub switch and limit requests to no more than 3 hub switches at a time unless otherwise instructed by the engineer or DIT.

Field Ethernet Edge Switch

Ethernet edge switches will be furnished, installed, and programmed by the design build team. DIT will provide the edge switch programming information to the Design build team. Design build team will provide Ruggedcom model RS900G or Comnet model CNGE11FX3TX8MS edge switches with minimum 2 100/1000 Base X fiber-optic ports and 4 copper RJ45 ports.

Ensure that all fiber-optic ports operate at 1310 or 1550 nanometers in single mode. Design all SFP ranges according to the actual distance between devices in the field. Provide Type LC connectors for the optical ports. Do not use mechanical transfer registered jack (MTRJ) type connectors. Ensure that each optical port consists of a pair of fibers; one fiber will transmit (TX) data and one fiber will receive (RX) data. Ensure that the optical ports have an optical power budget of at least 15 dB. NCDOT utilizes a “2-fibers in 2-fibers out” network design from device to device.

Ensure all copper ports are RJ-45 and auto-negotiate speed (i.e., 10/100/1000 Base) and duplex (i.e., full or half). Ensure that all are compliant with the IEEE 802.3 standard pinouts.

➤ **CCTV Cameras**

Design, furnish and install fiber-optic drop cables, fiber-optic interconnect centers and field ethernet switches to the existing CCTV locations listed below.

- I-95 Exit or Mile Marker near:

180 (Analog)	73 (I-5986B)
173 (Analog)	Exit 72 (I-5986B) *
171 (Analog)	71 (Analog)
168 (Analog)	70 (I-5986B)
160 (Analog)	MM 68 on DMS (I-5986A)
154 (Analog)	65 (I-5986A)
150 (Analog) on DMS	MM 64 on DMS (I-5986A)
145 (Analog)	61 (I-5986A)
141 (Analog) Solar	MM 61 on DMS (I-5986A)
138 (Analog) Solar	MM 60 (I-5986A)

132 (Analog) Solar	MM 59 on DMS (I-5986A)
127 (Analog)	58 (I-5896A)
121 (Analog)	MM 58 on DMS (I-5986A)
119 (Analog) *	56 (I-5986A)
116 (Analog)	55 (I-5986B)
107 (Analog)	52 (Analog) -Critical-
102 (Analog)	49 (Analog)
97 (Analog)	46 (2 CCTV locations)
95 (Analog)	(Analog) *
90 (Analog)	41 (I-5987)
87 (Analog)	40 (I-5987)
81 (2 CCTV locations)(I-5986B)	MM 37 (I-5987)
* -Critical-	MM 34 (I-5987)
79 (I-5986B) *	33 (I-5987)
MM 78 (I-5986B)	31 (I-5987) (2 CCTV
77 (I-5986B)	Locations)
MM 76 (I-5986B)	30 (I-5987)
75 (I-5986B)	28 (I-5987)
MM 74 (I-5986B)	25 (I-5987)
	MM 24 (I-5987)
	MM 23 (I-5987)
	22 (I-5987)
	21 on DMS (I-5987)
	20 (I-5987)
	19 (I-6064)
	17 (I-6064)
	13 (I-6064) (2 CCTV locations)

- US 70 Exit or Mile Marker:

MM 319(Analog)	70 Bypass exit 361(Digital)
MM 320(Analog)	70 Bypass exit 364(Digital)
MM 323(Analog)	70 Bypass exit 370(Digital) Solar
MM 326(Analog)	MM 416(Analog)
70 Bypass exit 350(Digital) Solar	US 70 at US 17(Analog) Solar
70 Bypass exit 351(Digital)	US 70 at Williams Rd.
70 Bypass exit 355(Digital) Solar	(Digital)(R-5777A&B)
70 Bypass exit 356(Digital) Solar	US 70 at Grantham Rd. (Digital)
70 Bypass exit 358(Digital)	(R-5777A&B)
	US 70 at Taberna Way. (Digital)
	(R-5777A&B)
	US 70 at Thurman Rd. (Digital)
	(R-5777A&B)
	US 70 at NC 24(Analog)
	US 70 at Atlantic Beach
	Bridge(Analog)

- US 74 Exit or Mile Marker

US 74 at I-140	US 74 at Exit 170
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US 74 at US 701	I-26 at MM 64.5
US 74 West of MM 225 (R-5797)	I-26 at Exit 59 (Green River Bridge Project)
I-74 at Exit 213	I-26 West of Green River Bridge (Green River Bridge Project)
I-74 at Exit 210	I-26 at US 25 (Green River Bridge Project)
I-74 at Exit 203	I-26 at Exit 53 (I-4400)
I-74 at Exit 200	I-26 at Tracy Grove Rd. (I-4400)
I-74 at Exit 194	I-26 at Exit 49 (I-4400)
I-74 at MM 192	I-26 North of Clear Creek Rd. (I-4400)
I-485 at NC-49/Tryon St.	I-26 North of Brookside Camp Rd. (I-4400)
I-485 at Exit 3	I-26 near Naples Rd. (I-4400)
I-485 at Exit 4	I-26 at Exit 44 (I-4400)
I-485 at Exit 6	I-26 at MM 41 (Weigh Station)(I-4400)
I-485 at MM 6	I-26 at Exit 40 (I-4700)
I-485 at MM 7	I-26 at Glen Bridge Rd. (I-4700)
I-485 at Exit 9	I-26 at Exit 37 (I-4700)
I-485 at Exit 10	I-26 at Blue Ridge Parkway (I-4700)
I-85 Exit 29	I-26 at MM 35 (I-4700)
I-85 at MM 28	I-26 at Ferry Rd. (I-4700)
I-85 at exit 27	I-26 at Exit 33 (I-4700)
I-85 at exit 26	I-26 at MM 32
I-85 at MM 24	
I-85 at Exit 23	
I-85 at Exit 22	
I-85 at Exit 21	
I-85 at Exit 20	
I-85 at Exit 19	
I-85 at Exit 17	
I-85 at Exit 14	
I-85 at Exit 13	

Assume all US 74 corridor CCTVs not being installed by a current project are Analog .

Replace all existing analog cameras listed above with new digital cameras in accordance with the Project Special Provisions included with this RFP. Return all removed equipment to the engineer.

Camera locations with a project number denoted (I-5986A & B, I-5987A & B, I-6064) are to be installed or replaced as part of those projects. The design build team will be responsible for coordinating with those projects on installing fiber drops and ethernet edge switches once the devices are installed.

Install a field ethernet edge switch in all existing CCTV cabinets listed above. CCTVs that are mounted on a DMS structure may share a switch and cabinet with the DMS.

The list above is as accurate as possible as of the date of this RFP. Any CCTV upgrades, Drop Cables or Ethernet Edge Switches needed shall be provided at no additional cost for up to 10 additional CCTV cameras.

For the existing solar sites listed above replace the existing solar assembly with all new hardware in accordance with the Project special provisions included with this RFP. Return the existing solar assembly equipment to the engineer. Existing equipment cabinets, solar mounting brackets and battery cabinets may be reused with the approval of the engineer. Comply with the National Electrical Code (NEC), the National Electrical Safety Code (NESC), the 2018 NCDOT *Standard Specification for Roads and Structures*, the Project Special Provisions, and all local ordinances.

Design, furnish and install new CCTV camera assemblies, equipment cabinets, electrical services, solar power assemblies, wood poles, fiber-optic interconnect centers, Ethernet edge switches and fiber optic drop cables at the following locations:

- I-95 Exit:

176	38 (2 CCTV locations) Solar
106	22
105	10
101	7 Solar
98 Solar	2
97	1
44	

- US 70:

US 70 Bypass at I-795 - Solar	Exit 409
Exit 372	Exit 411 - Solar
US 70 at Washington St.	US 70 at S Glenburnie Rd.
US 70 at NC-148 - Solar	US 70 at Old Airport Rd.
US 70 at NC 58	

- US 74

US 74 at NC 87	US 74 at Williams/Harmon Rd.
US 74 at Exit 258 (NC 211)	US 74 Bypass at Exit 199 (NC 226)
US 74 at Exit 244 (BUS 74)	US 74 Bypass at Exit 197 (Washburn Switch Rd.)
US 74 at Exit 233 (NC 410)	US 74 at US 74 Bypass (West)
US 74 at Exit 228 (NC 242)	US 74 at Exit 193
I-74/US 74 at Exit 311 (US 1)	US 74 at US074 BUS (Mooresboro)
US 74 at Exit 306 (US 74 BUS)	US 74 West of Exit 163 (In Curve)
US 74 at Pee Dee River (East side)	US 74 at Exit 161
US 74 at Pee Dee River (West Side)	
I-85 at MM 11.5 (Weigh Station)	
I-85 at Exit 10A	
I-85 at Exit 10B	

	I-26 at MM 63.5 I-26 at MM 62 I-26 at MM 60
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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. Furnish site surveys, including but not limited to bucket truck surveys or drone surveys, to ensure camera coverage areas are acceptable.

Furnish and install new electrical service equipment at all new CCTV locations. Install solar power assembly equipment at the sites identified above as “solar”. New solar CCTV locations do not require a UPS in the cabinet. Comply with the National Electrical Code (NEC), the National Electrical Safety Code (NESC), the 2018 NCDOT *Standard Specification for Roads and Structures*, the Project Special Provisions, and all local ordinances. All work involving electrical service shall be coordinated with the appropriate utility company and the Engineer.

For new CCTV camera sites listed as “2 CCTV locations” or existing CCTV camera sites where a second camera is being installed the design-build team shall install these new cameras on separate poles with separate cabinets in locations that give the greatest combined view of the interchange or location between all cameras at the site.

The Design-Build team shall maintain CCTV communications with existing cell modems (or replacement cell modems supplied by the department) until they are ready to be switched over to the fiber network and communicate with the STOC via fiber. If a replacement cell modem is needed allow 8 weeks lead time for the department to supply the modem.

➤ **Dynamic Message Signs (DMS)**

Design, furnish and install fiber-optic drop cables, fiber-optic interconnect centers and field ethernet switches to the existing DMS locations listed below.

I-95 DMS Locations:	US 70 DMS Locations:	US 74 DMS Locations:
<ul style="list-style-type: none"> • MM 177 • MM 175 • MM 174 • MM 172 • MM 157.5 • MM 150 • MM 142 • MM 134 • MM 124.5 • MM 114.5 • MM 102 • MM 101 	<ul style="list-style-type: none"> • MM 319 • MM 322 -Critical- • MM 323 • MM 328 -Critical- • MM 349.5 • MM 352.5 • MM 358 • MM 372 • MM 416 • Front Street SB at US 17/US 70 	<ul style="list-style-type: none"> • US 74 West of Malmo Loop Rd. (dual DMS) • US 74 WB MM 365.5 • US 74 West of MM 225 (2 DMS locations) (R-5797) • I-74 WB MM 208 • I-74 WB MM 203 • I-74 EB MM 198 • I-74 EB MM 191 • US 74 East of Exit 273

<ul style="list-style-type: none"> • MM 92 -Critical- • MM 85 -Critical- • MM 78 (Dual DMS) (I-5986B) -Critical- • MM 71 • MM 68 (I-5986A) • MM 64 (I-5986A) • MM 61 (I-5986A) - Critical- • MM 59 (I-5986A) • MM 58 (I-5986A) • MM 53 • MM 49 • MM 44 • MM 38 • MM 34 • MM 31 • MM 27 • MM 21 (I-6064) (Dual DMS) • MM 16 (I-6064) • MM 9 Critical 	<ul style="list-style-type: none"> • MM 418 -Critical- 	
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Install a field ethernet edge switch in all existing DMS cabinets listed above that do not already have one in accordance with the Project Special Provisions included with this RFP. Return all removed equipment to the engineer.

DMS locations with a project number denoted (I-5986A & B) are to be installed or replaced as part of those projects. The design build team will be responsible for coordinating with those projects on installing fiber drops and ethernet edge switches once the devices are installed.

The list above is as accurate as possible as of the date of this RFP. Any Drop Cables or Ethernet Edge Switches needed shall be provided at no additional cost for up to 2 additional DMS sites.

➤ **Signal Systems**

Design, furnish and install fiber-optic drop cables to the existing closed loop signal systems listed below. Terminate the drop cable in a fiber-optic interconnect center and install a field ethernet switch in the closest signal cabinet to the I-95 or US 70 trunk lines. Signal inventory numbers listed are potential closest cabinets. DO NOT connect the ethernet switch to the signal controller. Upon termination of the fiber-optic drop cable in the signal cabinet and installation of the edge switch, no further work will be required.

<p>I-95 Signal Systems:</p> <ul style="list-style-type: none"> • D06-18_Lumberton 06-0344, 06-0345 • D04-13_Roanoke Rapids 04-1176, 04-1177 • D04-19_Selma 04-0962, 04-0562 • D04-20_Benson 04-0209, 04-0218 • D04-07_Smithfield 04-0804 • D04-21_Kenly 04-0224 • D04-22_Roanoke Rapids 04-0364, 04-0365 • D06-02_Dunn 06-0762, 06-0766 • D06-17_Lumberton 06-0375, 06-0531 	<p>US 70 Signal Systems:</p> <ul style="list-style-type: none"> • D02-01_Havelock 02-0563 • D02-04_Newport 02-0305 • D02-08_James City 02-0197*, 02-0914* • D02-11_Morehead City 02-0252 • D02-12_Morehead City 02-0149 • D02-13_Morehead City 02-0491 • D02-14_New Bern 02-0428, 02-0625 • D02-15_New Bern 02-0356, 02-0775 • D02-22-TBS_New Bern 02-0767, 02-0766 	<p>US 74 Signal Systems:</p> <ul style="list-style-type: none"> • D03-34 Malmo 03-1070, 03-1076 • 03-0170 Isolated Signal • D06-06 Lumberton 06-1262, 06-1263 • D08-01 Laurinburg 08-0392 • 08-0867 Isolated Signal • 08-0216 Isolated Signal • D10-37 Wadesboro 10-0371 • D10-35 Marshville 10-1683 • D12-09 Belmont 12-0158, 12-0985 • D14-08_Flat Rock 14-0932 • D14-01_Hendersonville 14-0736 • D14-05_Fletcher 14-0901 • D13-06_Ashville 13-0814 • D13-02_Ashville 13-0646
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* Installed under R-5777A&B projects, tie both signals into the device trunk line.

The list above is as accurate as possible as of the date of this RFP. Any Drop Cables or Ethernet Edge Switches needed shall be provided at no additional cost for up to 10 additional Signal locations.

➤ **Cellular Connected Vehicle Site**

Design, furnish and install a Cellular Connected Vehicle site at the locations listed below in accordance with the functional requirements listed below. Design, furnish and install a fiber-optic drop cable and field ethernet switch at this site for communications. DO NOT connect the CV system to the edge switch unless instructed to by the Engineer and DIT. The Design-build team shall provide four (4) training sessions for up to 15 people each on the setup, programming, and operation of the connected vehicle system.

- I-95 at I-795

- I-95 at US 70
- I-95 at I-40
- US 70 Bypass at I-40
- US 70 at I-795

The CV System shall have the following minimum requirements:

- a. The system shall provide CV applications to mobile phones via cellular communications.
- b. The system shall provide TIMs messages to mobile phones with the proper application open and running via a cloud-based system.
- c. The system shall support MAP files that determine the approaches and individual lanes and in turn provide TIMs Messages. An approaching vehicle should only receive the messages that relate to their approach or lane.
- d. The system shall use the GPS position of the vehicle/smart phone to determine when to provide the TIMs information.
- e. A web-based configuration utility for easy editing of the MAP information and programing of TIMS messages that is workable on any modern web browser.
- f. The CV system must be able to be accessed and programmed remotely.
- g. The CV TIMs messages shall be programmable, customizable and provide audible alerts for the end users.
- h. The CV system setup shall require username and password to log on.
- i. The CV system should have the latest authentication and protection measurements to secure public safety, privacy and the integrity of data/information.
- j. The CV system shall have policies for accessing and sharing data, measurements to protect Data Privacy, security and Intellectual Property.
- k. The CV System shall meet all current FCC requirements and licenses.
- l. The CV system shall meet all applicable requirements of USDOT RSU Standard 4.1 and NCTIP 1218 v01. The RSU shall be certified by OmniAir Consortium.
<https://omniair.org/>
- m. The hardware must be field hardened and contained in a NEMA 4X cabinet properly sized for all CV, power and communications equipment (may be located in existing equipment cabinet as long as it does not affect the operation of the existing equipment).
- n. Hardware and cabinet should be mounted on a fifty-foot (50') wood pole. Pole and cabinet installation, power and grounding requirements shall follow the same NCDOT requirements as CCTV cameras.
- o. The hardware must be capable of being upgraded to support the future 5G cellular communications.
- p. Issue real time alerts via SMS and email to the appropriate response personnel immediately when a fault occurs.

- q. The field device must be capable of receiving software and security updates remotely without having to physically go to the field devices.
- r. Cellular connectivity for the system should be included with the hardware for a minimum of 5 years.
- s. The hardware shall be under warranty for the same period of time as the cellular connectivity mentioned above.
- t. The CV System should be easy to maintain, replace and have continued technical support.
- u. The “over the air” updates shall have the ability to add new connected vehicle functionality and keep the units up to date within SAE J2735 standards to support future connected vehicle communication protocols.
- v. The CV System shall support the following minimum applications:

Minimum Requirements:

1. RSU to Phone Applications
2. RSU to Vehicle Applications
3. Visual display and audible alerts to users through the mobile application
4. Virtual Wrong Way detection
5. DMS Annunciation
6. Congestion Alerts
7. Accident/Incident Alerts
8. Work Zone Alert

The Design-Build Team shall demonstrate each of these applications as part of the testing and acceptance of the CV system.

The CV system must be submitted to the Department for review and approval before it can be installed.

➤ **Remote Weather Information System**

- Design, furnish and install a fiber-optic drop cable to the existing Remote Weather Information System listed below. Terminate the drop cable in a fiber-optic interconnect center and install a field ethernet switch in the device equipment cabinet. DO NOT connect the field ethernet switch to any existing communications equipment in the cabinet. I-95 near MM 174.5 – Roanoke river bridge.

➤ **Traffic Count Station**

Design, furnish and install a fiber-optic drop cable to the existing Traffic Count Station listed below. Terminate the drop cable in a fiber-optic interconnect center and install a field ethernet switch in the device equipment cabinet. DO NOT connect the field ethernet switch to any existing communications equipment in the cabinet.

- I-95 North near MM 86

➤ **Weigh Stations & Rest Areas**

Design, furnish and install fiber-optic drop cables to the Weigh Stations and Rest Areas listed below. Terminate the drop cable in a new fiber-optic patch panel in the existing network racks at each weigh station and install a new network rack at each Rest Area. DO NOT connect the patch panel to any existing communications equipment in the Weigh Station or Rest Area. For Rest Areas that do not have an existing network rack, work with the Authority having jurisdiction over those premises to identify a pathway into the facilities to terminate the fiber-optic drop cable. Termination of the fiber-cable drop cable shall be in fiber-optic interconnect center in an equipment rack or enclosure approved by the engineer. Upon terminating the drop cable in the appropriate location, no further work will be required.

All work associated with adding conduit and piping into the Weigh Stations and/or Rest Stop facilities shall adhere to NEC and NESC codes and all local jurisdictional work requirements and be subject to inspections by the Authority have jurisdictional control.

I-95 South Bound MM 181	Weigh Stations
I-95 North and South Bound MM 142	I-95 North and South Bound MM 151
I-95 North and South Bound MM 99	I-95 North and South Bound MM 24
I-95 North and South Bound MM 48	I-85 North and South Bound MM 28
I-95 North Bound MM 5	I-85 North Bound MM 12
I-26 East and West Bound MM 41.5	I-26 North and South Bound MM 41

MATERIALS & CONSTRUCTION

Furnish and install new materials and hardware unless stated otherwise elsewhere in this RFP. Adhere to the requirements of the ITUT, IEEE and TIA standards as well as the 2018 NCDOT *Standard Specifications for Roads and Structures*, the 2018 NCDOT *Roadway Standard Drawings*, the *ITS & Signals Generic Project Special Provisions Version 18.3* or latest version at time of letting and the project special provisions included with the RFP.

➤ **CCTV Cameras**

Install each stand-alone CCTV camera on a 60-foot Class 3 wood pole. Install CCTV equipment in a 336 equipment cabinet mounted on the pole. Install the following minimum equipment in each CCTV equipment cabinet:

- Power equipment including power supplies, circuit breakers, surge protectors, and other related materials.
- New solar assembly at existing and new CCTV locations identified above.
- Ethernet Edge Switch
- Fiber-optic Interconnect center with a 20’ slack loop of spare drop cable.

Perform all work in accordance with the applicable Project Special Provision found elsewhere in this RFP, and other standards listed elsewhere in this RFP.

➤ **Conduit**

○ **Power Conduit**

Furnish and install conduit (for power) and all necessary hardware by trenching, plowing or directional drilling in accordance with Section 1715 of the 2018 NCDOT *Standard Specifications for Roads and Structures* for installing the power service to the ITS devices. Conduit shall not be placed in the median or under the roadway, except for lateral traverse crossings. (Reference the Electrical Service Section below)

○ **Communications Conduit**

Main Trunk Line Conduit – Furnish and install:

- Two (2) – 1.25-inch conduits for NCDOT communications trunk lines.
 - One Blue conduit for the minimum 144-fiber ITS Trunk Line
 - One Orange conduit for the minimum 144-fiber ITS Device Line
- Minimum One (1) – 1.25-inch conduit for possible future commercialization.
 - One Green conduit with pull tape.

*Note pull tape requirement does not apply if a commercialization track is selected. *

Drop Cable Conduit – Furnish and Install

- Two (2) 1.25-inch conduits for NCDOT drop cables passing under the roadway
 - One (1) 1.25-inch conduit for NCDOT drop cables not passing under the roadway
- Drop cable conduits shall be White.

Furnish and install conduit and all necessary hardware by trenching, plowing or directional drilling in accordance with the Project Special Provisions included with this RFP for installing fiber-optic conduit to the ITS devices. Conduit shall not be placed in the median or under the roadway, except for perpendicular crossings. Seal all conduits with mechanical sealing devices as described in the Project Special Provisions included with the RFP.

Bundled 1.25-inch conduits are allowed for NCDOT use as long as they meet all specifications and requirements stated in this RFP.

Split NCDOT 1.25” conduit and any spare/commercialization conduits into separate junction boxes at the top of interchange ramps on one side of the crossing street. All conduits may share junction boxes between interchanges.

The Design-Build Team shall be responsible for providing 811 services for newly constructed segments of infrastructure until NCDOT has accepted the infrastructure. The Track 1a Contractor shall notify the Track 1b Contractor one (1) month in advance of acceptance testing to enable the Track 1b Contractor one (1) month to prepare for NC811 work to be performed. The Track 1b Contractor will be responsible for providing NC 811 services for new construction infrastructure immediately following acceptance by NCDOT of Track 1a construction segments as identified in the Track 1a scope of work.

➤ **Junction Boxes**

○ **Electrical**

Furnish and install “Tier 22” junction boxes (pull boxes) for electrical services with all necessary hardware in accordance with Limited Access Junction Box specifications included with this RFP. Provide standard size junction boxes accordance with Limited Access Junction Box specifications for electrical service. Electrical junction boxes within 6 feet of the meter base or the ITS device with should be protected with a concrete collar/skirt of 8-inch depth, 12 inches wide all around, and flush with the top surface. Electrical junction boxes between the meter base and the ITS device should be buried 6”-8” below grade in accordance with the project special provisions included with this RFP. Install electrical junction boxes at maximum intervals of three hundred (300) feet or at locations where underground splicing is necessary. For concrete collar/skirt requirements reference the “Junction Box (Limited Access facilities)” Project Special Provisions and Junction Box detail drawings included with this RFP. Install locate balls and delineator markers at all electrical junction boxes in accordance with the special provisions included with this RFP.

DO NOT bury junction boxes until all appropriate inspections have been conducted.

Provide junction box covers with standard “Electric” logo, pull slots and stainless-steel pins.

○ **Communications**

Furnish and install junction boxes (pull boxes) with all necessary hardware in accordance with the Project Special Provisions included with this RFP. Provide Tier 22 load rated junction boxes accordance with Limited Access Junction Box specifications, with “mouse holes” to accommodate horizontal conduit entrances into the junction box for fiber installations.

For communications junction boxes installed at the top of exit ramps or within 6 feet of an ITS device, install a concrete collar/skirt of 8-inch depth, 12 inches wide all around, and flush with the top surface grade. For concrete collar/skirt requirements reference the Project Special Provisions and Junction Box detail drawings included with this RFP.

For communications junction boxes installed between interchanges and further than 6 feet from an ITS device bury the junction box 6”-8” below grade in accordance with the project special provisions included with the RFP. Install locate balls and delineator markers at all communications junction boxes in accordance with the special provisions included with this RFP.

DO NOT bury junction boxes until all appropriate inspections have been conducted.

Provide Tier 22 junction box covers with standard “NCDOT Fiber Optic” logo, pull slots and stainless-steel pins.

Space trunk line junction boxes roughly 1500 feet apart between interchanges.

Install communications junction boxes at the base of each ITS device pole/cabinet and at each hub cabinet within six feet.

Every junction box shall house 50 feet of spare cable for each NCDOT cable entering the junction box.

Every junction box with a splice enclosure shall house 50 feet of spare cable for each direction of the cables being spliced. (i.e. 50 feet of spare trunk line in each direction and 50 feet of spare of each drop cable)

Ground all tracer wires in junction boxes designated for communications fiber in accordance with the “Junction Boxes (Limited Access facilities)” PSP and details drawings included with this RFP.

Communications cables and power cables shall NOT share junction boxes.

➤ **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 60-foot CCTV Class 3 wood poles as defined in the ITS Project Special Provision.
- Use 40-foot Class 4 wood poles for approved applications.
- Use 6” x 6” x 8’ treated wood posts for underground electrical service structures.

Furnish and install related items of work including but not limited to risers with weatherhead or heat shrink tubing, Air terminals and all necessary hardware in accordance with Section 1720 of the 2018 NCDOT *Standard Specifications for Roads and Structures* and the Air Terminal and Lightning Protection System Project Special Provision included with this RFP.

➤ **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 service entrance equipment, service entrance conductors, feeder conductors, disconnects, 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*.

Electrical Services and Service Disconnects with regards to voltage drop calculations shall be rated to accommodate the following breaker sizes:

CCTV = 15 AMPS

DMS = 50 AMPS or 30 AMPS (dependent on the sign manufacturer)

Calculations using actual equipment load amperage will not be allowed.

➤ **Generator Hookups**

For devices listed above as “Critical” devices install an external generator connection port on the device cabinet exterior. Port should be designed and sized for the appropriate electrical requirements of the cabinet it is for. ALL hub cabinet locations are considered “Critical” other critical devices are noted in the lists earlier in this RFP. Supplying generators is not required as part of this project.

OTHER 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*.

SUBMITTALS

Submit a set of 60% preliminary plans by HUB to HUB segment, 90% unsealed set of project plans by HUB to HUB segment, including specifications for materials, catalog cuts, and installation and testing requirements for review. 60% and 90% submittals will have separate 10-day review periods by HUB to HUB segment submitted with no more than four (4) HUB to HUB segment submitted for review at once. The design build team shall submit one HUB to HUB segment for the initial 60% submittal so that common errors can be addressed to avoid repeating corrections across future submittals. Upon acceptance of the Department, provide a 100% set of sealed plans by HUB to HUB segment and specifications to the Department. No construction of the ITS devices and infrastructure shall begin until the Department has accepted the 100% sealed plans and specifications. Provide the Department 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/default.aspx>

ADDITIONAL REQUIREMENTS

For all ITS devices and components within the entire project limits, the Design-Build Team shall comply with the following requirements:

➤ Maintenance and Repair

The Design-Build Team shall maintain and repair all ITS components within the track 1A 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. The Design-Build Team shall be responsible for conducting 811 locates for newly constructed fiber until acceptance. 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)/As-built 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 11 x 17-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. **This plan of record documentation shall be provided to both the Engineer and the NCDOT ITS Section.**

➤ Systems Engineering Documentation

The Design-Build Team shall perform systems engineering to ensure consistency with the Statewide ITS Architecture and to ensure conformance with the requirements of 23 CFR 940.11. The Design-Build Team shall develop and submit to NCDOT the following systems engineering deliverables for review:

- a. A Systems Engineering Management Plan
- b. A Concept of Operations
- c. A requirement document that specifies system requirements, high level design, and detailed design requirements
- d. Development of test plans for unit/device testing, subsystem verification, system verification and validation.

Systems Engineering Documentation shall follow the same submittal review structure as detailed in the Submittals section above.

➤ **Integration**

Upon completion of the ITS device installations, coordinate with DIT to integrate all ITS devices with the NCDOT ITS network and verify accessibility of all devices at the STOC unless instructed otherwise by this RPF or by the Engineer.

Coordinate with DIT and the Engineer to modify, as necessary, the existing central hardware and software modules including but not limited to databases, to provide operators access to new devices through the operators' Graphical User Interface.

➤ **Testing**

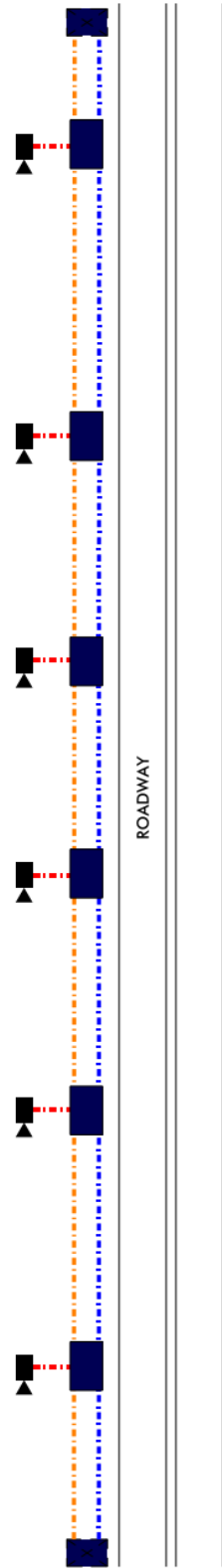
Develop unit and system test plans and procedures for each ITS device and all associated components, in accordance with the appropriate testing requirements found in the Project Special Provisions included with this RFP and submit to the Engineer for review and approval.







Upon completion of the ITS device installations, conduct unit and system 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 and system tests, submit the test reports along with the record of repairs and part replacements to the Engineer.

ITS DEVICE LINE CONCEPT DRAWINGS



LEGEND	
	ITS HUB CABINET
	ITS DEVICE
	JUNCTION BOX
	144-FIBER TRUNK CABLE (BLUE CONDUIT)
	144-FIBER ITS DEVICE CABLE (ORANGE CONDUIT)
	12-FIBER DROP CABLE (RED CONDUIT)

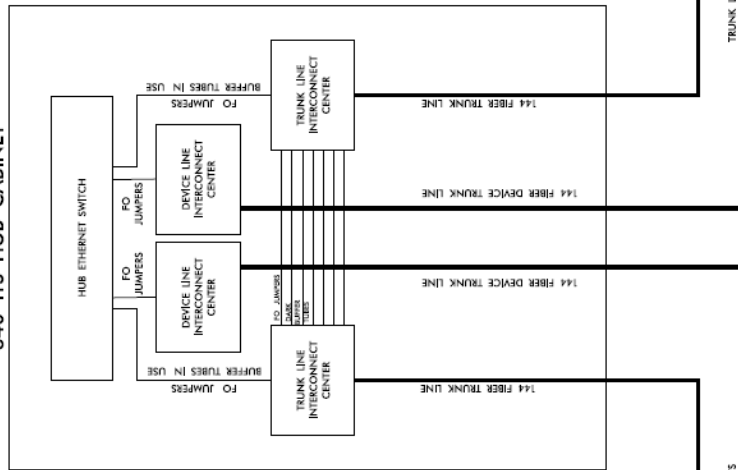
DEVICE LINE RUNS FULL DISTANCE BETWEEN 2 HUB CABINETS WITH DEVICES SPLICED IN AND CONNECTS TO BOTH HUB CABINETS FOR DEVICE COMMUNICATION REDUNDANCY.

TRUNK LINE RUNS FULL DISTANCE BETWEEN 2 HUB CABINETS WITH NO SPLICES AND CONNECTS TO BOTH HUB CABINETS FOR HUB TO HUB COMMUNICATIONS.

ITS HUB SPlice /REGENERATION CABINET CONCEPT BLOCK DIAGRAM

"DRAWING IS CONCEPTUAL"
SEE ITS SCOPE OF WORK FOR BUFFER TUBE SPlice ASSIGNMENTS
AND HUB CABINET PHYSICAL LAYOUT DETAIL

340 ITS HUB CABINET



TRUNK LINE TO NEXT HUB CABINET

TRUNK LINE TO ITS DEVICES BETWEEN HUB CABINETS

TRUNK LINE TO NEXT HUB CABINET

TRUNK LINE TO ITS DEVICES BETWEEN HUB CABINETS

UTILITIES COORDINATION SCOPE OF WORK (2-5-18)

The Design-Build Team shall obtain the services of a Professional Services Firm (PSF) knowledgeable in the NCDOT Utility Coordination Process involved with utility relocation / installation and highway construction. The Design-Build Team shall be responsible for coordinating all utility relocations, removals, and / or adjustments where the Design-Build Team and utility owner, with concurrence from the Department, determine that such work is essential for highway safety and performance of the required highway construction. Coordination shall be for all utilities whether or not they are specifically identified in this Scope of Work and shall include any necessary utility agreements when applicable. NCDOT will be the approving authority for all utility agreements and utility plans.

The Design-Build will only be allowed direct contact with the utility owners when the aforementioned PSF is present. (Reference the *Individual Meeting with Proposers* Project Special Provision found elsewhere in this RFP)

In accordance with the requirements herein, the Design-Build Team shall relocate / coordinate the relocation of all existing facilities if they are in physical conflict with construction.

Project Details

The Design-Build Team shall be responsible for verifying the utility locations, type of facilities, and identifying the utility owners in order to coordinate the relocation of any utilities, known and unknown, in conflict with the project. The following utilities are known to be located within the project construction limits:

<u>Utility Owner</u>	<u>Utility Type</u>	<u>Cost Responsibility</u>
<u>Varies</u>	<u>CATV</u>	<u>Design-Build Team</u>
<u>Varies</u>	<u>Gas (Distribution)</u>	<u>Design-Build Team</u>
<u>Varies</u>	<u>Gas (Transmission)</u>	<u>Design-Build Team</u>
<u>Varies</u>	<u>Power (Distribution)</u>	<u>Design-Build Team</u>
<u>Varies</u>	<u>Power (Transmission)</u>	<u>Design-Build Team</u>
<u>Varies</u>	<u>Telecommunications</u>	<u>Design-Build Team</u>
<u>Varies</u>	<u>Water and Sewer</u>	<u>Design-Build Team (NCDOT will obtain an agreement with Utility Owners allowing the Design-Build Team to work on their facilities)</u>
<u>Varies</u>	<u>Petroleum</u>	<u>Design-Build Team</u>

Water and Sewer

If the Design-Build Team's design and / or construction requires the relocation and / or encasement of existing water and / or sewer facilities, designs shall be coordinated with the NCDOT Utilities Unit. All costs associated with the design and construction for relocation and / or encasement of

these existing water and / or sewer facilities shall be the responsibility of the Design-Build Team and shall be included in the lump sum bid for the project. The Design-Build Team shall develop designs; prepare all plans for needed agreements and permits; submit permits directly to the agencies and obtain approval from the agencies. The Design-Build Team shall be responsible for all permit fees.

Designs shall be coordinated with the NCDOT Utilities Unit and the utility owners or their representatives. In .pdf format, the Design-Build Team shall electronically submit one half-size set and one full size set of utility construction drawings to the State Utilities Manager, via the Design-Build Unit, for further handling. Each set shall include a title sheet, plan sheets, profiles and special provisions, if required. Once accepted by the State Utilities Manager, the plans, with the appropriate agreement, will be sent to the utility owner for review and concurrence.

The relocation of all water and sewer facilities shall be done in accordance with the NCDOT Policies, as well as the latest water and sewer design requirements / specifications or each effected owner. In the event of conflicting design parameters in the requirements noted above, the proposed design shall adhere to the most conservative values. The materials and appurtenances proposed by the Design-Build Team shall require approval by both NCDOT and the aforementioned appropriate utility owner prior to installation.

Utility Relocation Plans

Excluding water and sewer conflicts, if the Design-Build Team's design and or construction create a utility conflict, the Design-Build Team shall request that the utility owner submit relocation plans (Highway Construction Plans to be provided by the Design-Build Team to utility owners) that show existing utilities and proposed utility relocations for approval by the NCDOT.

In .pdf format, the Design-Build Team shall electronically submit one half-size set and one full size set of the Utility Relocation Plans to the NCDOT State Utility Manager, via the Design-Build Unit, for review and approval. The Department shall approve the Utility Relocation Plans prior to any utility relocation work beginning. The Design-Build Team shall also be responsible for submitting the appropriate agreements to be used with the Utility Relocation Plans (See Agreements found elsewhere in this Scope of Work). After the review process is complete, the NCDOT Utilities Unit will submit an electronic copy of the authorization letter to the Design-Build Team. The NCDOT Utilities Unit will also submit an electronic copy of the approved Utility Relocation Plans, estimate and agreement to the Department's Resident Engineer. If the Utility Relocation Plans are approved subject to changes, it shall be the Design-Build Team's responsibility to coordinate these changes with the appropriate utility owner.

Cost Responsibility

The Design-Build Team shall be responsible for all costs associated with utility relocations resulting from the Design-Build Team's methods of operation or sequence of work.

Compensable Interest

Typically, affidavits, recorded easements or NCDOT agreements can serve as evidence of prior rights. A compensable interest is identified as follows:

- (A) Existing or prior easement rights within the limits of the project, either by recorded right of way or adverse possession (Utility occupying the same location for twenty (20) plus years outside the existing highway rights of way).
- (B) Entities covered under *General Statute 136-27.1* and *136-27.2*. Statute requires the NCDOT to pay the non-betterment cost for certain water, sewer and gas relocations.
- (C) Utilities that have a joint-use agreement that constitutes a compensable interest with entities that have existing or prior easements rights within the project limits.

Work Performed by Design-Build Team for Utility Owners

If the Design-Build Team elects to make arrangements with a utility owner for proposed utility construction not required herein, in which the utility owner shall be responsible for the costs of work to be performed by the Design-Build Team, the Design-Build Team shall be responsible for negotiating all costs associated with the proposed construction. Once the Design-Build Team and the utility owner agree on a plan and a lump sum estimated cost for the utility construction, the Design-Build Team shall electronically submit one half-size set and one full size set of the utility construction drawings, in .pdf format, to the State Utilities Manager, via the Design-Build Unit, for further handling. Each set shall include a title sheet, plan sheets, profiles and special provisions if required. Also, a letter from the utility owner agreeing to the plans and lump sum cost must accompany this package. The NCDOT will reimburse the Design-Build Team the estimated lump sum cost under a Supplemental Agreement. The necessary Utility Agreement to the utility owner for reimbursement shall be a two-party agreement between the NCDOT and the utility owner; and will be developed and executed by the Department.

If the Design-Build Team is requested, in writing, by a utility owner to relocate facilities not impacted by the project's construction, and / or upgrade or incorporate new facilities as part of the highway construction, designs shall be coordinated with the utility owner and the NCDOT Utilities Unit. The associated design and construction costs shall be negotiated and agreed upon between the Design-Build Team and the utility owner. The Design-Build Team shall develop designs; prepare all plans for needed agreements and permits; submit permits directly to the agencies and obtain approval from the agencies. The Design-Build Team shall be responsible for all permit fees.

Cable TV

The NCDOT will not permit CATV to place poles within the highway right of way but will allow down guys for their facilities within the highway right of way. Under most circumstances, the CATV Company will continue a joint-use attachment with the local Power and Telephone Company. If the CATV proposed relocation places buried facilities within the highway right of way then plans and encroachment agreements shall be required by the NCDOT.

Communication Cables / Electrical Services for Lighting, Traffic Signals and ITS Devices

Prior to establishing the location for new meter poles, the Design-Build Team shall coordinate with the local Power Distribution Company concerning accessibility of E/C service and safety in maintenance of the meter.

Prior to installation, the Design-Build Team shall provide plans for review and approval for all service taps that require a parallel installation within the control of access (C/A).

Parallel service installation within a C/A shall be buried.

The Design-Build Team shall be responsible for all coordination activities, including deposit fees, required for the utility company to provide service taps. Prior to the Design-Build Team developing the associated design and / or instructing the utility company to proceed with providing the service taps, the Design-Build Team shall obtain written approval of the service tap locations from the Resident Engineer.

Adjusting Existing Utilities due to Proposed Traffic Management Systems Fiber Optic Communications Cables

The Design-Build Team shall be responsible for all costs for coordinating and adjusting any utilities that conflict with any proposed communication cables.

Requirements for Attachments to Existing and / or Proposed Structures

The Design-Build Team shall avoid attachments to structures where feasible excluding the allowable attachments as identified elsewhere in the RFP and Structure Scope of Work. Attachments shall only be considered when other alternatives are cost prohibitive and / or are not feasible due to environmental or geographical features. All utility related attachments must be evaluated and approved by the State Utilities Manager, including any existing attachments to any structure(s) that require modification or replacement. Attachments shall be prohibited under the following criteria:

- (A) No attachments shall be allowed to cored-slab superstructures.
- (B) No attachments shall be allowed to curved bridges without the Engineer's approval.

Attachments to structures, if approved by the State Utilities Manager, shall meet the following criteria:

- (A) No attachments shall be allowed below the bottom of the beams and / or girders.

- (B) Drilling of, or attachments to, beams and / or girders shall not be allowed. Attachments shall only be allowed to the backside of barrier unless otherwise approved.

Documentation of adverse conditions or cost estimates of all feasible alternatives shall be submitted to the NCDOT State Utilities Manager, via the Design-Build Unit, when seeking approval of a structure attachment. Cost estimates shall consider all costs involved with each alternative and impacts to the utility and the highway project as a whole.

General

The Design-Build Team shall not commence work at points where the highway construction operations are adjacent to utility facilities, until making arrangements with the utility owner to protect against damage that might result in expense, loss, disruption of service or other undue inconvenience to the public or utility owner. The Design-Build Team shall be responsible for damage to the existing or relocated utilities resulting from the Design-Build Team's operations. In the event of interruption of any utilities by the project construction, the Design-Build Team shall promptly notify the utility owner and cooperate with the utility owner in the prompt restoration of service.

The Design-Build Team shall accommodate utility adjustments, reconstruction, new installation and routine maintenance work that may be underway or take place during the progress of the contract.

If total property acquisition is unavoidable due to encroachment into wells and / or septic systems, the Design-Build Team shall investigate and determine if extending water and / or sewer lines to the affected property is cost effective. If the Department concurs with the determination that a utility extension is cost effective, the costs associated with the utility design and construction shall be addressed in accordance with Article 104-7 of the 2018 NCDOT *Standard Specifications for Roads and Structures*.

The Design-Build Team shall be required to use the guidelines as set forth in the following:

- (A) *NCDOT Utility Accommodation Manual (Expected January 2021)* will supersede the existing *NCDOT Utility Manual – Policies & Procedures for Accommodating Utilities on Highway Rights of Way* and the *NCDOT Utilities Policy Manual*. Reference the website noted below for the current version of the NCDOT utility manuals, and additional information on the transition to the new utility manuals shall be adhered to:

<https://connect.ncdot.gov/municipalities/Utilities/Pages/UtilitiesManuals.aspx>

- (B) *Federal Aid Policy Guide* - Subchapter G, Part 645, Subparts A & B
- (C) *Federal Highway Administration's Program Guide, Utility Adjustments & Accommodations on Federal Aid Highway Projects*

- (D) *NCDOT Construction Manual* Section 105-8
- (E) *NCDOT Right of Way Manual* - Chapter 16 Utility Relocations
- (F) *NCDEQ, Public Water Supply* - Rules governing public water supply
- (G) *NCDEQ, Division of Water Resources* - Title 15A - Environment and Natural Resources

Agreements

If a utility company can provide evidence of prior rights of way or a compensable interest in their facilities, the Design-Build Team shall coordinate the non-betterment utility relocation costs with the utility company and develop the Utility Relocation Agreement.

The NCDOT State Utilities Manager must execute approved agreements on Design-Build projects. The Utility Relocation Agreements (Cost Agreement) and Encroachment Agreements are available from the NCDOT Utilities Unit. Reference Pages 59 and 60 of the *NCDOT Utility Manual - Policies & Procedures for Accommodating Utilities on Highway Rights of Way* for the different types of Encroachment Agreements available for use.

The Design-Build Team shall submit all Utility Relocation Agreements, (URAs), all Utility Encroachment Agreements, and all supporting documents to the NCDOT State Utilities Manager, via the Design-Build Unit, in electronic format. Prior to submittal, all agreements shall be signed electronically by an authorized representative of the utility owner. These electronic agreement packets will be reviewed, approved and signed electronically by the NCDOT Utilities Manager, or designated representative, before being distributed to the field.

The Design-Build Team shall utilize the NCDOT Standard Utility Encroachment Agreements, as necessary, in relocating utilities. The encroachment agreements shall be used under the following conditions:

- (A) If a utility company is not occupying a valid right of way / compensable interest and the proposed relocation will place the relocated utilities within the existing or proposed highway right of way.
- (B) For **all** new utility installations not covered under a Utility Agreement and within the existing or proposed highway right of way. This includes all water, sewer and gas lines owned by entities covered under *General Statute 136-27.1* and *136-27.2*.

EROSION AND SEDIMENT CONTROL SCOPE OF WORK

(9-28-2020)

1. GENERAL

The NCDOT Roadside Environmental Unit (REU) shall review and accept all Erosion and Sedimentation Control Plans in accordance with NCDOT's delegation agreement with the North Carolina Sedimentation Control Commission including authority to (1) identify special needs for this project, including the acquisition of additional right-of-way; (2) mandate special details to be included in the design plans or special provisions; (3) conduct on site plan reviews for compliance and require design changes to accommodate field changes; (4) inspect all construction sites including waste and borrow pits and haul roads; and (5) issue violation notifications or cease and desist orders. The NCDOT REU will also retain authority in plan, detail, and special provision review and acceptance. Clearing & Grubbing, and any necessary Final Grade or Intermediate Release for Construction (RFC) Erosion Control Plans shall be submitted, accepted and distributed to all NCDOT personnel listed in the Design-Build Submittal Guidelines before **any** land disturbing activities, including clearing and grubbing, can commence. If the Design-Build Team chooses to perform the work in discrete sections, then a complete set of Clearing & Grubbing and any necessary Final Grade RFC Erosion Control Plans shall be submitted, accepted, and distributed, as noted above, prior to land disturbing activities, including clearing and grubbing, commencing in that section. No land disturbing activities, including clearing and grubbing, shall occur in any location that does not have accepted Clearing & Grubbing and Final Grade RFC Erosion Control Plans. Refer to the most recent versions of the NCDOT *Erosion and Sediment Control Design and Construction Manual* and of the NCDEQ - *Erosion and Sediment Control Planning and Design Manual* for erosion control design guidelines not addressed in this Scope of Work.

2. EROSION AND SEDIMENTATION CONTROL DESIGN**2.1. Design Process and Requirements****2.1.1. Pre-Submittal Meeting**

- A pre-submittal meeting shall take place between the NCDOT Roadside Environmental Unit Soil & Water Engineering Section, the Design-Build Team, and any other pertinent NCDOT personnel before any Erosion and Sedimentation Control Designs are submitted to NCDOT Roadside Environmental Unit. Erosion and Sedimentation Control Plan submittals shall only be reviewed and accepted by NCDOT Roadside Environmental Unit after the Erosion and Sedimentation Control Pre-Submittal Meeting. The Design-Build Team shall be required to submit a tentative Erosion and Sedimentation Control Plan submittal schedule at the pre-submittal meeting.
- At a minimum, the Design-Build Team shall bring one erosion control plan sheet with a Clearing & Grubbing erosion control design to the Erosion and Sedimentation Control Pre-Submittal Meeting.

2.1.2. Design and Plan Submittals

- All erosion and sediment control design shall be in accordance with North Carolina *Design Standards in Sensitive Watersheds* (DSSW) for areas within regions of regulated riparian buffers (Neuse River), High Quality Water Zones (within 1 (one) mile and draining to an EMC identified High Quality Water (575 feet for inland high quality water bodies in Carteret and Craven Counties)), Outstanding Resource Water, 303d listed stream for turbidity impairment or identified primary nursery area (PNA) water body, within 0.5 (one-half) mile of a critical area (CA) identified water body, and as required by permits.
- All jurisdictional streams within the project limits requiring DSSW shall be identified as ‘Environmentally Sensitive Areas’ on the Sediment and Erosion Control Plan.
- Plan submittals shall include all pertinent design information required for review, such as design calculations, drainage areas, etc. Within the entire project limits, provide disturbed and undisturbed drainage areas in MicroStation format for all phases.
- Plans shall address any environmental issues raised during the permitting process.
- The NCDOT Roadside Environmental Unit will provide a sample set of Erosion and Sedimentation Control Plans (including any special details or special provisions used by the NCDOT Roadside Environmental Unit) and MicroStation Erosion Control Workspace to the Design-Build Team for reference upon request.
- Temporary access and haul roads, other than public roads, constructed or used in connection with the project shall be considered a part of the project and addressed in the Erosion and Sedimentation Control Plans. Temporary access and haul roads located within the footprint and / or the right of way / easement corridor of the project shall be part of the highway Erosion and Sedimentation Control Plans. As needed, temporary access and haul roads associated with borrow pits and staging areas shall be included in the Reclamation Plan.
- The Design-Build Team shall allow sufficient time in the proposed schedule to address any comments to the Erosion and Sedimentation Control Plans, as deemed necessary by the NCDOT Roadside Environmental Unit.
- At any time requested by the Engineer or the NCDOT Roadside Environmental Unit, the Design-Build Team shall provide an updated version of the Erosion and Sedimentation Control Plans for distribution to all parties involved in the construction process.
- Once RFC Erosion and Sedimentation Control Plans are issued, any major design change or addition, any change that involves calculations, and any addition, deletion, or relocation of a sediment basin shall be submitted to the NCDOT Roadside Environmental Unit for review and acceptance. Minor changes such as moving silt fence, adding or moving temporary ditches (unless adding new runoff flow to a sediment basin), and adding or moving slope drains shall be reviewed by the Engineer in the field.
- The Design-Build Team’s erosion and sedimentation control designer shall submit design calculations, for the Department’s review and acceptance, for all modifications to the Erosion and Sedimentation Control Plans that result in dimension modifications

and / or relocations, other than minor shifts to accurately place, to the devices noted below:

- Riser Basin
 - Skimmer Basin and all devices with Skimmers
 - Temporary Rock Sediment Dam Type A
 - Temporary Rock Sediment Dam Type B
 - Temporary Rock Silt Check Type A
- All RFC Erosion and Sedimentation Control Plans, including any red line revisions, shall be kept on site at all times throughout the duration of the project.

2.2. Clearing and Grubbing Phase Plans

The Design-Build Team shall submit an Erosion and Sediment Control (E&SC) plan for all work associated with the project, hereby referenced in this document as the Clearing and Grubbing (C&G) E&SC plan. The C&G plan shall be required for all construction activities and shall address both construction stormwater from disturbed areas and stormwater drainage onto the disturbed portion of the project and be designed to manage and provide treatment for stormwater using existing topography and drainage systems. Any planned changes to the existing topography or drainage systems for construction of this project shall be addressed in additional Final Phase or Intermediate phase E&SC plan sheets. The C&G plans may utilize typical ES&C plan designs and details for repetitive construction operations to minimize the number of individual E&SC plan sheets. Unique individual E&SC plan sheets shall be required for construction and installation operations that do not conform to the aforementioned typical E&SC designs and details, encroachments into jurisdictional or environmentally sensitive areas or larger land disturbing activities (examples may include but not limited to lay down or construction yards, temporary construction office sites, or fiber huts). Methods of installation that minimize ground disturbance and can be completed and stabilized within the same workday may utilize the aforementioned typical ES&C plan design and may not require further planned E&SC devices.

- 2.2.1. Use correct NCDOT symbology.
- 2.2.2. E&SC to-scale plan sheets shall be 50:1.
- 2.2.3. Protect existing drainage structure inlets with Rock Inlet Sediment Trap Type ‘A’ (RIST-A), Rock Inlet Sediment Trap Type ‘C’ (RIST-C), Rock Pipe Inlet Sediment Trap Type ‘A’ (PIST-A), etc.
- 2.2.4. Utilize adequate perimeter controls (temporary silt ditches (TSD), temporary silt fence (TSF), etc.).
- 2.2.5. Clean Water Diversions (CWD) shall be used to the maximum extent practical to direct offsite drainage around the disturbed project limits. CWD should not be used to divert offsite runoff through the project construction limits without temporary piping or additional E&SC measure to separate construction stormwater from the CWD.

- 2.2.6. Utilize skimmer basins and rock measures with sediment control stone (Temporary Rock Sediment Dam Type 'B' (TRSD-B), Temporary Rock Silt Check Type 'A' (TRSC-A), etc.) at drainage outlets.
- 2.2.7. Account for topography and show existing contour lines on Clearing & Grubbing Plans only.
- 2.2.8. Utilize Temporary Rock Silt Checks Type 'B' (TRSC-B) or wattles to reduce velocity in existing ditches with spacing of 250 feet divided by percentage of ditch grade. Also utilize TRSC-B's or wattles in proposed TSD's and temporary diversions (TD).
- 2.2.9. Protect existing streams; do not place erosion control devices in live streams unless permitted by the Division of Water Resources 401 Certification and the Army Corps of Engineers 404 Permit.
- 2.2.10. In areas of DSSW, sediment basins shall be sized to provide adequate silt storage for 3600 cubic feet per disturbed acre with surface area equal to 435 square feet per cubic foot per second (cfs) of the peak inflow rate, Q25, using 25-year peak rainfall data (NCDEQ - *Erosion and Sediment Control Planning and Design Manual* or NOAA's National Weather Service website <https://hdsc.nws.noaa.gov/hdsc/pfds/> for partial duration (ARI) time series type). In all other areas, utilize the 10-yr peak rainfall event, Q10, for peak inflow rate. A Sediment Basin Designer Spreadsheet will be provided by the NCDOT Roadside Environmental Unit upon request.
- 2.2.11. In areas of DSSW, Skimmer Basins shall be sized to provide adequate silt storage for 1800 cubic feet per disturbed acre with surface area equal to 325 square feet per cubic foot per second (cfs) of the peak inflow rate, Q25, using the 25-year peak rainfall data (NCDEQ - *Erosion and Sediment Control Planning and Design Manual* or NOAA's National Weather Service website <https://hdsc.nws.noaa.gov/hdsc/pfds/> for partial duration (ARI) time series type). In all other areas, utilize the 10-yr peak rainfall event, Q10, for peak inflow rate. Skimmer Basins shall be designed to dewater in two to three days. A Skimmer Basin Designer Spreadsheet will be provided by the NCDOT Roadside Environmental Unit upon request.
- 2.2.12. Design Riser Basins to the following standards:
- Surface Area shall be determined by Equation A (sq. feet) = Q25 (cfs) * 435.
 - Volume requirement shall be 1800 cubic feet per disturbed acre draining to the riser basin.
 - Riser Pipe shall have a cross-sectional area 1.5 times that of the barrel pipe.
 - The riser pipe shall be non-perforated with a skimmer attached to the bottom of the pipe, one foot from the bottom of the basin.
 - See NCDEQ - *Erosion and Sediment Control Planning and Design Manual* for additional design criteria.

- 2.2.13. The minimum and maximum length to width ratio of all Sediment Basins shall be 2:1 and 6:1, respectively.
- 2.2.14. Coir Fiber Baffles shall be installed in all silt basins and sediment dams at drainage outlets. For silt basins with a 20-foot or longer length, three Coir Fiber Baffles shall be installed with a spacing of 1/4 the basin length. For silt basins with a length less than 20 feet, a minimum of two Coir Fiber Baffles shall be installed, with a spacing of 1/3 the basin length. The Design-Build Team will not be required to show the individual baffles on the Erosion Control Plans but shall be required to incorporate the Coir Fiber Baffle Detail on the Erosion Control Plans.
- 2.2.15. Construction activities in jurisdictional streams shall be done in accordance with the NCDOT *Best Management Practices for Construction and Maintenance Activities*.
- 2.2.16. Utilize Coir Fiber Wattles with Polyacrylamide (PAM) and / or TRSC-As with Matting and PAM in temporary and permanent, existing and proposed ditches at an appropriate design spacing in areas where sediment basins are not feasible at drainage outlets and in areas where sediment basins at drainage outlets with sediment traps (i.e. PIST-A, RIST-A, etc.), cannot be properly sized to surface area and/or sediment storage requirements due to safety concerns, right of way restrictions, utility conflicts, or other construction limitations approved by the NCDOT Roadside Environmental Unit.
- 2.2.17. Utilize temporary diversions or diversion berms as water bars to divide long sections of the grade directing the stormwater flow to E&SC outlet measures. Design spacing shall be in accordance with Table 6.23a of the NCDEQ - *Erosion and Sediment Control Planning and Design Manual*.
- 2.2.18. Place a device utilizing PAM at all sediment basin inlets.
- 2.2.19. At a maximum spacing of 200 feet or at sag points along the silt fence and as directed, utilize Special Sediment Control Fence or Coir Fiber Wattles as drainage breaks in silt fence.
- 2.2.20. Do not place erosion control devices that require excavation (i.e. sediment basins, silt ditches, etc.) in wetlands.
- 2.2.21. Provide matting for erosion control for disturbed areas in excess of 5% on grade or slopes steeper than 4:1. Provide natural fiber matting (non-polyethylene or non-polypropylene) mattings for exposed soils within all ESA areas, riparian buffer zones, and wetlands regardless of grade or slope. Areas to be stabilized with matting for erosion control shall be shown on the C&G E&SC plans if Final Phase E&SC plans are not required.
- 2.2.22. For all drainage outlets where the runoff cannot be treated with a sediment basin and / or the sediment basin cannot be constructed to the required sediment storage or surface area requirements, provide a written explanation.
- 2.2.23. Excluding perimeter Sediment Basins that will function only during Clearing and Grubbing operations, all perimeter Sediment Basins shall be placed outside of construction limits.

2.3. Final Grade Phase Plans

Final Grade (FG) phase E&SC plans shall be required for areas where construction operations cause alteration of the drainage patterns such that the C&G E&SC phase plans

cannot adequately manage or treat stormwater or E&SC measures cannot function properly. The FG E&SC plans shall be designed to manage and provide treatment for stormwater using proposed topography and drainage systems. In addition to the requirements of Section 2.2, the Final Grade Phase Plans shall:

- 2.3.1. Devices at all drainage turnouts shall utilize skimmer or sediment control stone (TRSD-B, TRSC-A, etc.) and a spillway with an adequately designed base length to distribute outflow.
- 2.3.2. Provide matting for erosion control (straw) in all disturbed or modified ditch lines, including but not limited to temporary ditch lines (TDs) utilized to divert offsite runoff around construction areas, where the velocity is greater than 2.0 feet / sec, and the shear stress is 1.25 psf or less. For ditch lines with a shear stress above 1.25 psf but not greater than 2.55 psf install matting for erosion control (excelsior). Permanent Soil Reinforcement Mat or Rip Rap shall be utilized for ditches with a sheer stress greater than 2.55 psf with approval from the Engineer.

2.4. Intermediate Phase

Intermediate Erosion Control Plans shall only be required if design modifications and / or site conditions require additional erosion control design or design revisions to the RFC Clearing and Grubbing and / or RFC Final Grade Erosion Control Plans. Intermediate Plans shall be submitted for review and shall be accepted prior to construction of any aspect impacted by the revised erosion control design. For any intermediate phase, comply with Section B, "Final Grade Phase" above.

3. DETAIL SHEETS, TITLE SHEETS AND SPECIAL PROVISIONS

3.1. Detail Sheets and Notes

- 3.1.1. Provide project specific special notes and details, including but not limited to, skimmer basin, coir fiber wattle with Polyacrylamide (PAM), etc.
- 3.1.2. Provide matting summary sheet(s): matting for erosion control, permanent soil reinforcement mat, and coir fiber mat.
- 3.1.3. Provide reforestation sheet(s): regular, wetland, streambank and / or buffer showing appropriate species.

3.2. Title Sheet

- 3.2.1. Show correct notes: NCG-01, HQW, ESA, clearing and grubbing, etc.
- 3.2.2. Show correct standards for project
- 3.2.3. List of standard NCDOT symbology
- 3.2.4. Show name and certification number of Level III certified individual(s) responsible for designing and / or reviewing Erosion and Sedimentation Control Plans
- 3.2.5. Show name of primary NCDOT Roadside Environmental Unit Erosion and Sedimentation Control Plan reviewer

3.3. Special Provisions

- 3.3.1. Erosion Control Special Provisions are available at the following website:

<https://connect.ncdot.gov/resources/roadside/Pages/Soil-Water.aspx>

- 3.3.2. References in Erosion Control Special Provisions from the aforementioned website to Method of Measurement, Basis of Payment, or any other statement regarding direct payment for Erosion & Sediment Control measures shall be disregarded.
- 3.3.3. *Erosion & Sediment Control / Stormwater Certification* Project Special Provision found elsewhere in this RFP.

4. CONSTRUCTION REQUIREMENTS

4.1. General

- 4.1.1. The Design-Build Team shall comply with the North Carolina Administrative Code *Title 15A Environmental Quality* Chapter 4, Sedimentation Control.
- 4.1.2. An accepted Erosion and Sedimentation Control Plan shall not exempt the Design-Build Team from making every effort to contain sediment onsite.
- 4.1.3. Whenever the Engineer determines that significant erosion and sedimentation continues despite the installation of approved protective practices, the Design-Build Team shall be required to, and shall, take additional protective action.

4.2. Preliminary Construction Meeting

- 4.2.1. Prior to any land disturbing activity, the Engineer will schedule a meeting with Division construction personnel, Design-Build Team senior management, Design-Build Team project staff, NCDOT project staff, consultant engineering / inspection staff, NCDOT Construction Unit, NCDOT Roadside Environmental Unit, Land Quality, Department of Water Resources and any other party associated with activities that impact the overall effectiveness of the project's erosion control.
- 4.2.2. During this meeting, the attendees shall review the Design-Build Team's Erosion Control Plans and identify potential erosion control issues. All attendees will provide comments, recommendations and supportive information to help facilitate resolution to the aforementioned potential erosion control issues.

4.3. Construction Meetings

- 4.3.1. Once construction begins, the Engineer may schedule monthly meetings to review the erosion control status. All parties listed above for the Preliminary Construction Meeting shall participate in these monthly construction meetings.
- 4.3.2. During the construction meetings, the erosion control efforts / issues to date will be reviewed and discussed. Additionally, the upcoming construction phases will be reviewed to identify potential erosion control issues. After the construction meeting, a project review may occur to identify site specific issues and identify solutions. The Design-Build Team shall be responsible for all actions, corrections and / or resolutions resulting from the construction meetings and / or subsequent site visits.
- 4.3.3. The NCDOT senior management will discuss issues that are repeatedly identified on inspection reports and / or discussed during the construction meetings with the Design-Build Team's senior management.

- 4.3.4. If project activities do not change the erosion control status / conditions, the Engineer may elect to change the construction meeting frequency or cancel a meeting.

4.4. Inspection and Certification

- 4.4.1. Erosion & Sediment Control / Stormwater Certification shall be required according to the Project Special Provision found elsewhere in this RFP.

- 4.4.2. Prior to installation of any erosion control devices, the Design-Build Team shall verify boundaries of jurisdictional areas in the field and delineate with Safety Fence or flagging. For guidance on Safety Fence and flagging in jurisdictional areas, see:

<https://connect.ncdot.gov/resources/roadside/Pages/Field-Operations-Documents.aspx>

- 4.4.3.

4.5. Reclamation Plan

- 4.5.1. As required, borrow or waste areas that are part of the project shall require a separate Reclamation Plan, unless the borrow or waste activity is regulated under the *Mining Act of 1971*, or is a landfill regulated by the NCDEQ - Division of Waste Management (DWM). For newly created borrow pit(s) that require dewatering, Borrow Pit(s) Dewatering Basins shall be required and shall be in accordance with the applicable special provisions available at the website noted in Section IV above. The Design-Build Team shall submit the location and permit number for waste / borrow sites covered by the Mining Act or regulated by the NCDEQ - DWM concurrently to the Design-Build Unit and the Resident Engineer. For Reclamation Procedures, see:

<https://connect.ncdot.gov/resources/roadside/FieldOperationsDocuments/ContractedReclamationProcedures.pdf>

- 4.5.2. Temporary access and haul roads associated with borrow pits and staging areas shall be included in the Reclamation Plan.

- 4.5.3. A Central Coastal Plain Capacity Use Area (CCPCUA) permit is required for dewatering of groundwater in Wayne, Lenoir, Jones, Craven and Carteret Counties excess of 100,000 gallons per day of ground water prior to any dewatering operation. The CCPCUA rules also require registration and reporting of water use for operations using more than 10,000 gallons of ground water and/or surface water per day. The requirements for monitoring and record keeping may be found at to following link:

<https://connect.ncdot.gov/resources/roadside/SoilWaterDocuments/CCPCUA.pdf>

4.6. Miscellaneous Construction Requirements

- 4.6.1. At a minimum, the Design-Build Team shall install Floating Turbidity Curtain at ponds, lakes, and other jurisdictional standing water bodies 1) where construction activities create surface fill impacts 2) or where sufficient erosion and sediment control devices cannot be installed to contain sediment and / or turbidity impacts.

- 4.6.2. Utilize special stilling basins to dewater the construction site in accordance with NCDOT *Best Management Practices for Construction and Maintenance Activities*.

- 4.6.3. To contain concrete wash water and associated concrete mix from washing out ready-mix trucks, drums, pumps, or other equipment, provide Concrete Washout Structures at egress

points. Concrete Washout Structures must collect and retain all concrete wash water and solids so that this material does not migrate to surface waters or into the ground water. The Concrete Washout Structures are not intended for concrete waste not associated with washout operations. The Concrete Washout Structures may include devices above or below ground and / or commercially available devices designed specifically to capture concrete wash water. Concrete Washout Structure options may be found in the special provision, available at the website noted in Section IV above. For construction details of an above grade and below grade Concrete Washout Structure, reference the website noted below:

<https://connect.ncdot.gov/resources/roadside/SoilWaterDocuments/ConcreteWashoutStructureDetail.pdf>

- 4.6.4. All erosion control measures with stone extending beyond the construction limits shall be considered temporary fill. If impacted wetland areas are permitted as Hand Clearing, then the aforementioned temporary fill shall be permitted as Temporary Fill in Hand Cleared Areas for Erosion Control. (Reference the Environmental Permits Scope of Work found elsewhere in this RFP).
- 4.6.5. Sediment basins that drain directly into jurisdictional water or have a total drainage area of one acre or more shall be designed and constructed with outlet structures that only withdraw water from the surface. For sediment basins that do not drain directly into jurisdictional water or have less than one acre of total drainage area, surface dewatering outlets or stone outlets may be provided.
- 4.6.6. The Design-Build team shall adhere to the materials management requirements set forth in section F of the NCG010000 permit. Structural controls installed to manage construction materials stored or used on site shall be shown on the E&SC Plan.
- 4.6.7. The Design-Build Team shall coordinate with the Division Roadside Engineer to delineate the limits of their active operations to allow for routine maintenance mowing and litter removal operations to occur within the project limits.

5. VEGETATION MANAGEMENT AND GROUND COVER REQUIREMENTS

5.1. Vegetation Management

- 5.1.1. To ensure adherence with the April 1, 2019 NCG-010000 General Construction Permit, issued by the North Carolina Department of Environmental Quality, Division of Water Resources, the Design-Build Team shall formally submit a project-wide Vegetation Management Procedure for the NCDOT's review and acceptance prior to any land disturbing activities. After this initial review, the Design-Build Team shall concurrently provide the NCDOT Resident Engineer and Roadside Environmental Field Operations Engineer updated versions of the Vegetation Management Procedure on a monthly basis. These updated versions will not require formal submittal to the Design-Build Unit but will be subject to review comments by the aforementioned field personnel. All versions of the Vegetation Management Procedure shall include, but not be limited to, 1) provisions for the early establishment of grasses / vegetation, 2) provisions for obtaining the required 80% permanent vegetation stand, as defined in the April 1, 2019 NCG-01000 General Construction Permit and in accordance with the *Permanent Vegetation Establishment Project Special Provision* found elsewhere in this RFP, by the project final completion date, and 3) procedure and schedule details for fertilizer topdressing, supplemental seeding,

mowing and repair seeding. The Vegetation Management Procedure shall be closely coordinated with the grading and hauling operations. The Design-Build Team shall provide a narrative overview of the Vegetation Management Procedure in the Technical Proposal.

- 5.1.2. From the beginning through the end of construction, the Design-Build Team shall maintain a comprehensive list that details when and where permanent / temporary / repair seeding and fertilizer topdressing have been performed.

5.2. Ground Cover Stabilization Requirements - NCG010000 (7 - 14 Days)

- 5.2.1. Ground cover stabilization shall comply with the timeframe guidelines specified by the North Carolina Department of Environmental Quality, Division of Water Resources NCG-010000 General Construction Permit that became effective on April 1, 2019. Excluding the slopes noted below, temporary and permanent ground cover stabilization shall be provided within seven calendar days from the last land-disturbing activity. The Design-Build Team shall label all slopes subject to the seven-day ground cover stabilization requirements on all Erosion and Sedimentation Control Plans submitted to the Department for review and acceptance.

- 5.2.2. For the slopes noted below, temporary and / or permanent ground cover stabilization shall be provided within 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of ten feet or less
- Slopes 3:1 or flatter, with a slope length of 50 feet or less
- Slopes 4:1 or flatter

- 5.2.3. Temporary and / or permanent ground cover stabilization shall be provided in accordance with the provisions in this RFP, the Vegetation Management Procedure developed by the Design-Build Team and the April 1, 2019 NCG-010000 General Construction Permit.

5.3. Additional Ground Cover Stabilization Requirements

- 5.3.1. Once the Design-Build Team identifies the area for stabilization due to inactivity, the Design-Build Team shall obtain concurrence from the Engineer and adhere to the following options based on the estimated amount of time the area will remain inactive. If the area stabilized exceeds the estimated timeframe, the Design-Build Team shall implement the next level of stabilization as directed by the Engineer. All application rates noted below are in pounds per acre.

5.3.2. Short Term Stabilization - For areas that will remain inactive for up to 21 days

Erodible areas shall be stabilized utilizing non-vegetative cover. Non-vegetative cover options include straw mulch, hydraulic applied erosion control products or rolled erosion control products. If straw mulch is used, it shall provide 100% groundcover and be tacked sufficiently to hold the mulch in place for the duration of the inactive period. All other methods shall be installed according to the manufacturer's directions.

5.3.3. Mid-Term Stabilization - For areas that will remain inactive for up to 90 days

- Erodible areas shall be stabilized utilizing the following stabilization protocol:

March 1 - August 31

September 1 - February 28

50# German or Browntop Millet	50# Rye Grain or Wheat
500# Fertilizer	500# Fertilizer
4000# Limestone	4000# Limestone

- At the Engineer’s sole discretion, the use of limestone on sandy soils that require topsoil for stabilization may be eliminated. The Design-Build Team shall consult with, and obtain written approval from, the NCDOT Roadside Environmental Unit prior to eliminating limestone.
- Upon obtaining written approval from the Engineer, the Design-Build Team may use wood mulch and / or ground clearing and grubbing debris as an option for Mid-Term Stabilization. If approved, the aforementioned mulch and / or debris shall be installed at a thickness that prevents erosion.

5.3.4. Long Term Stabilization - For areas that will remain inactive for more than 91 days

- Erodible areas shall be stabilized utilizing the following stabilization protocol:

All Roadway Areas

March 1 – August 31	September 1 – February 28
10# Centipede *	10# Centipede *
50# Tall Fescue Cultivars **	50# Tall Fescue Cultivars **
25# Bermudagrass (hulled)	35# Bermudagrass (unhulled)
500# Fertilizer	500# Fertilizer
4000# Limestone	4000# Limestone

* On cut and fill slopes 2:1 or steeper, the Design-Build Team shall apply centipede at a rate of five pounds per acre.

Riparian and Wetland Locations

March 1 – August 31	September 1 – February 28
18# Creeping Red Fescue Cultivars ***	18# Creeping Red Fescue Cultivars ***
6# Indiangrass	6# Indiangrass
8# Little Bluestem	8# Little Bluestem
4# Switchgrass	4# Switchgrass
25# Browntop Millet	35# Rye Grain
500# Fertilizer	500# Fertilizer
4000# Limestone	4000# Limestone

Waste and Borrow Areas

March 1 – August 31	September 1 – February 28
75# Tall Fescue Cultivars **	75# Tall Fescue Cultivars **
25# Bermudagrass (hulled)	35# Bermudagrass (unhulled)

500# Fertilizer
4000# Limestone

500# Fertilizer
4000# Limestone

**** Approved Tall Fescue Cultivars**

06 Dust	Escalade	Justice	Serengeti
2 nd Millennium	Essential	Kalahari	Shelby
3 rd Millennium	Evergreen 2	Kitty Hawk 2000	Sheridan
Apache III	Falcon IV	Legitimate	Signia
Avenger	Falcon NG	Lexington	Silver Hawk
Barlexas	Falcon V	LSD	Sliverstar
Barlexas II	Faith	Magellan	Shenandoah Elite
Bar Fa	Fat Cat	Matador	Sidewinder
Barrera	Festnova	Millennium SRP	Skyline
Barrington	Fidelity	Monet	Solara
Barrobusto	Finelawn Elite	Mustang 4	Southern Choice II
Barvado	Finelawn Xpress	Ninja 2	Speedway
Biltmore	Finesse II	Ol' Glory	Spyder LS
Bingo	Firebird	Olympic Gold	Sunset Gold
Bizem	Firecracker LS	Padre	Taccoa
Blackwatch	Firenza	Patagonia	Tanzania
Blade Runner II	Five Point	Pedigree	Trio
Bonsai	Focus	Picasso	Tahoe II
Braveheart	Forte	Piedmont	Talladega
Bravo	Garrison	Plantation	Tarheel
Bullseye	Gazelle II	Proseeds 5301	Terrano
Cannavaro	Gold Medallion	Prospect	Titan ltd
Catalyst	Grande 3	Pure Gold	Titanium LS
Cayenne	Greenbrooks	Quest	Tracer
Cessane RZ	Greenkeeper	Raptor II	Traverse SRP
Chipper	Gremlin	Rebel Exeda	Tulsa Time
Cochise IV	Greystone	Rebel Sentry	Turbo
Constitution	Guardian 21	Rebel IV	Turbo RZ
Corgi	Guardian 41	Regiment II	Tuxedo RZ
Corona	Hemi	Regenerate	Ultimate
Coyote	Honky Tonk	Rendition	Venture
Darlington	Hot Rod	Rhambler 2 SRP	Umbrella
Davinci	Hunter	Rembrandt	Van Gogh
Desire	Inferno	Reunion	Watchdog
Dominion	Innovator	Riverside	Wolfpack II
Dynamic	Integrity	RNP	Xtremegreen
Dynasty	Jaguar 3	Rocket	
Endeavor	Jamboree	Scorpion	

***** Approved Creeping Red Fescue Cultivars**

Aberdeen

Boreal

Epic

Cindy Lou

- From January 1 – December 31, the Design-Build Team shall apply an additional 20# of Sericea Lespedeza on cut and fill slopes 2:1 or steeper.

5.4. Soil Analysis

If vegetation establishment indicates a deficiency in soil nutrients or an incurred pH level is present, the Design-Build Team shall take soil samples and apply additional soil amendments to the affected area and as directed.

5.5. Fertilizer

5.5.1. Fertilizer used within the project limits shall be 10-20-20 analysis or a different analysis that provides a 1-2-2 ratio applied at a rate that provides the same amount of plant food as a 10-20-20 analysis and as directed.

5.5.2. Fertilizer used for waste and borrow areas shall be 16-8-8 grade applied at a rate of 500 pounds per acre; or a different analysis that provides a 2-1-1 ratio applied at a rate that provides the same amount of plant food as a 16-8-8 analysis and as directed.

5.6. Supplemental Seeding

5.6.1. For all supplemental seeding, the kinds of seed and proportions shall be the same as specified above for *Long Term Stabilization*. The rate of application for supplemental seeding shall be between 25# to 75# per acre. Prior to topdressing, the Design-Build Team shall determine the actual rate per acre for supplemental seeding and submit the supplemental seeding rate and areas to the Department for review and acceptance.

5.6.2. To prevent disturbance of existing vegetation, minimum tillage equipment, consisting of a sod seeder, shall be used to incorporate seed into the soil where degree of slope allows. Where degree of slope prevents the use of a sod seeder, a clodbuster (ball and chain) may be used.

6. EROSION CONTROL DAMAGES

6.1. Damages

6.1.1. The Design-Build Team shall observe and comply with Federal and State Laws, Local Laws, Ordinances, and Regulations; as well as Orders and Decrees of Bodies having any jurisdiction or authority in accordance with Section 107 of the 2018 NCDOT *Standard Specifications for Roads and Structures*.

6.1.2. The Design-Build Team shall take all reasonable precautions to comply with all regulations of all authorities having jurisdiction over public and private land governing the protection of erosion and sedimentation. Any fines, remediation required or charges levied against the Department for failing to comply with all rules and regulations concerning erosion and sediment control, due to the Design-Build Team's negligence, carelessness, or failure to implement the Erosion and Sedimentation Control Plans and Specifications; or failure to maintain an approved Storm Water Pollution Prevention Plan (SWPPP), regardless of absence of neglect, shall be deducted from monies due the Design-Build Team. In addition to said fines, remediation required, or charges levied, any associated engineering costs or actions taken by the Department in order for the Department to comply with rules and

regulations, as a result of the Design-Build Team's negligence, carelessness, or failure to implement the Erosion and Sedimentation Control Plans and Specifications; and / or the SWPPP, regardless of absence of neglect, shall be deducted from the monies due to the Design-Build Team.

ENVIRONMENTAL PERMITS SCOPE OF WORK (3-27-19)**General**

The Department has obtained a: US Army Corps of Engineers (USACE) Section 404 Permit, NC Department of Environmental Quality, Division of Water Resources (NCDWR) Section 401 Water Quality Certification, and Division of Coastal Management General Permit for I-5986C and R-5777D. If modifications to the abovementioned permits are required, the Design-Build Team shall prepare all designs and documents necessary for the Department to obtain permit modifications.

The Department will obtain a: US Army Corps of Engineers (USACE) Section 404 Permit, NC Department of Environmental Quality, Division of Water Resources (NCDWR) Section 401 Water Quality Certification, and Division of Coastal Management General Permit for HO-0002A, B & C. It is anticipated that the Department will obtain these permits by August 31, 2021. As stated elsewhere in this RFP the Design-Build Team may begin construction activities prior to obtaining the aforementioned environmental 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. If modifications to the abovementioned permits are required, the Design-Build Team shall prepare all designs and documents necessary for the Department to obtain permit modifications.

The Design-Build Team shall not begin ground-disturbing activities in jurisdictional areas until the permit modifications have been obtained if needed.

The Design-Build Team may begin construction activities prior to obtaining the aforementioned environmental 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 Design-Build Team is encouraged to advance as many construction activities as possible outside jurisdictional resources prior to issuance of the environmental permit modifications. The Design-Build Team shall indicate the specific construction activities that will occur outside jurisdictional resources prior to obtaining the environmental permit modifications and their anticipated start date in the Technical Proposal.

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 Department's Environmental Analysis Unit (EAU) - Environment Coordination and Permitting Group (ECAP) or the Division's Environmental Officer (DEO) present. A representative from the Design-Build Unit shall be included on all correspondence.

Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall be bound by the terms of all signed planning documents. 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 modification, including but not limited to public involvement, additional design effort, additional construction effort, and / or additional environmental agency coordination and approvals.

It shall be the Design-Build Team's responsibility to acquire information and prepare any needed revised permit drawings that reflect the impacts and minimization efforts. 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 modification. The aforementioned permit impact sheets shall be reviewed and accepted by the Department prior to the permit modification submittal. The Design-Build Team shall be responsible for developing the permit modification for all jurisdictional impacts. At a minimum, the permit application shall consist of the following to the level provided for the original permit:

- Permit drawings
- 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.

If permit modifications are needed, direct coordination between the Design-Build Team, the Design-Build Unit, Resident Engineer, DEO and EAU shall be necessary to ensure proper permit modification application development. Upon completion of the draft permit modification application, the Design-Build Team shall concurrently forward the permit modification application to the Design-Build Unit, Resident Engineer, Division Environmental Officer, Hydraulics Unit and EAU for review and approval. After all revisions are complete, the Department will subsequently forward the permit modification application to the appropriate environmental agencies.

Any temporary construction measures, including de-watering, construction access, etc. shall be addressed in the permit modification 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 EAU.

The Design-Build Team shall describe the construction methods for all structures that impact jurisdictional resources. The temporary impact descriptions (haul roads, utility relocations, work bridges, etc.) shall include restoration plans, schedules and disposal plans.

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 permit modifications 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 modification, the design shall be complete and accepted by the Department.

The Design-Build Team should expect it to take up to 4 months to accurately and adequately complete all designs necessary for the permit modification, submit the permit application to the Department, and obtain permit approvals from the environmental agencies. Environmental agency review time will be approximately 60 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 4-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 4-month period has been exceeded. If time were granted it would be only for that time exceeding the 4-month period. This 4-month period is considered to begin on the Date of Availability, as noted elsewhere in this RFP.

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

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 permanent wetland and surface water impacts, the Department will review the roadway project corridor for potential on-site mitigation opportunities. If no on-site mitigation opportunities are identified, the Department will debit compensatory mitigation for unavoidable permanent impacts to wetlands and surface waters due to the project construction from the NCDOT Debit Ledger assets and / or acquire the compensatory mitigation from the NC Division of Mitigation Services. This amount of mitigation will be based on impacts, as identified in the I-5986C, R-5777D permits, and upcoming HO-0002A, B & C permits provided by the Department.

Any changes proposed by the Design-Build Team to any design or construction detail 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 / or 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 a NCDOT prequalified environmental consultant to conduct a full environmental investigation to include, but not be limited to, Federally Listed Threatened and Endangered Species, wetlands, surface waters, avoidance and minimization in jurisdictional areas, compensatory mitigation, FEMA compliance, and historical, archaeological, and cultural resource surveys in these areas. The environmental consultant shall obtain concurrence through EAU, from the U. S. Fish and Wildlife 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 4-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.

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.

For other commitments, see Project Special Provisions for “Special Requirements for Work in National Forest”.

The MCAS property that lies between Holly Drive and Jackson Drive in Havelock must be avoided. The fiberoptic cable must be installed within NCDOT right-of-way in the grassy median between Mimosa Drive and US Highway 70 west, where there is an existing line of trees and power poles.

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 I-5986C, R-5777D, and HO-0002A, B & C Categorical Exclusions, all permits, and all site visits.

Staging of construction equipment or materials shall not occur within any of the National Register of Historic Places (NRHP) boundaries or potential NRHP eligible tax parcels depicted in the R-5777D, I-5986C and HO-0002A, B & C historic architecture and archaeology screening memos. Consultation with SHPO shall be required if changes to the location and method of installation occur that would impact an NRHP boundary or potential NRHP eligible tax parcel noted in the screening memos.

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 Historic Architecture Group Leader, the NCDOT Archaeology Group Leader and the 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 Design-Build Unit. 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 Mary Pope Furr, NCDOT Historic Architecture Group Leader at (919) 707-6068, Matthew Wilkerson, NCDOT Archaeology Group Leader at (919) 707-6089, or David Stark, PE, NCDOT Priority Project Development Engineer at (919) 707-6605.

***** STANDARD SPECIAL PROVISIONS *******PLANT AND PEST QUARANTINES****(Imported Fire Ant, Gypsy Moth, Witchweed, Emerald Ash Borer, Guava Root Knot Nematode and Other Noxious Weeds)**

(8-31-13) (Rev. 4-1-19)

DB1 G130

Within Quarantined Area

This project may be within a county regulated for plant and / or pests. If the project or any part of the Design-Build Team's operations is located within a quarantined area, thoroughly clean all equipment prior to moving out of the quarantined area. Comply with federal / state regulations by obtaining a certificate or limited permit for any regulated article moving from the quarantined area.

Originating in a Quarantined County

Obtain a certificate or limited permit issued by the N.C. Department of Agriculture / United States Department of Agriculture. Have the certificate or limited permit accompany the article when it arrives at the project site.

Contact

Contact the N.C. Department of Agriculture / United States Department of Agriculture at 1-800-206-9333, 919-707-3730, or

<https://www.ncagr.gov/plantindustry/Plant/quaran/table2.htm>

to determine those specific project sites located in the quarantined area or for any regulated article used on this project originating in a quarantined county.

Regulated Articles Include

1. Soil, sand, gravel, compost, peat, humus, muck, and decomposed manure, separately or with other articles. This includes movement of articles listed above that may be associated with cut / waste, ditch pulling, and shoulder cutting.
2. Plants with roots including grass sod
3. Plant crowns and roots
4. Bulbs, corms, rhizomes, and tubers of ornamental plants
5. Hay, straw, fodder, and plant litter of any kind
6. Clearing and grubbing debris
7. Used agricultural cultivating and harvesting equipment
8. Used earth-moving equipment
9. Any other products, articles, or means of conveyance, of any character, if determined by an inspector to present a hazard of spreading imported fire ant, gypsy moth, witchweed, emerald ash borer guava root knot nematode or other noxious weeds.

ON-THE-JOB TRAINING

(2-24-15) (Rev. 7-20-17)

Z-10

Description

The North Carolina Department of Transportation will administer a custom version of the Federal On-the-Job Training (OJT) Program, commonly referred to as the Alternate OJT Program. All contractors (existing and newcomers) will be automatically placed in the Alternate Program. Standard OJT requirements typically associated with individual projects will no longer be applied at the project level. Instead, these requirements will be applicable on an annual basis for each contractor administered by the OJT Program Manager.

On the Job Training shall meet the requirements of 23 CFR 230.107 (b), 23 USC – Section 140, this provision and the On-the-Job Training Program Manual.

The Alternate OJT Program will allow a contractor to train employees on Federal, State and privately funded projects located in North Carolina. However, priority shall be given to training employees on NCDOT Federal-Aid funded projects.

Minorities and Women

Developing, training and upgrading of minorities and women toward journeyman level status is a primary objective of this special training provision. Accordingly, the Contractor shall make every effort to enroll minority and women as trainees to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

Assigning Training Goals

The Department, through the OJT Program Manager, will assign training goals for a calendar year based on the contractors' past three years' activity and the contractors' anticipated upcoming year's activity with the Department. At the beginning of each year, all contractors eligible will be contacted by the Department to determine the number of trainees that will be assigned for the upcoming calendar year. At that time the Contractor shall enter into an agreement with the Department to provide a self-imposed on-the-job training program for the calendar year. This agreement will include a specific number of annual training goals agreed to by both parties. The number of training assignments may range from 1 to 15 per contractor per calendar year. The Contractor shall sign an agreement to fulfill their annual goal for the year.

Training Classifications

The Contractor shall provide on-the-job training aimed at developing full journeyman level workers in the construction craft / operator positions. Preference shall be given to providing training in the following skilled work classifications:

Equipment Operators	Office Engineers
Truck Drivers	Estimators
Carpenters	Iron / Reinforcing Steel Workers
Concrete Finishers	Mechanics
Pipe Layers	Welders

The Department has established common training classifications and their respective training requirements that may be used by the contractors. However, the classifications established are not all-inclusive. Where the training is oriented toward construction applications, training will be allowed in lower-level management positions such as office engineers and estimators. Contractors shall submit new classifications for specific job functions that their employees are performing. The Department will review and recommend for acceptance to FHWA the new classifications proposed by contractors, if applicable. New classifications shall meet the following requirements:

Proposed training classifications are reasonable and realistic based on the job skill classification needs, and

The number of training hours specified in the training classification is consistent with common practices and provides enough time for the trainee to obtain journeyman level status.

The Contractor may allow trainees to be trained by a subcontractor provided that the Contractor retains primary responsibility for meeting the training and this provision is made applicable to the subcontract. However, only the Contractor will receive credit towards the annual goal for the trainee.

Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman level status or in which they have been employed as a journeyman.

Records and Reports

The Contractor shall maintain enrollment, monthly and completion reports documenting company compliance under these contract documents. These documents and any other information as requested shall be submitted to the OJT Program Manager.

Upon completion and graduation of the program, the Contractor shall provide each trainee with a certification Certificate showing the type and length of training satisfactorily completed.

Trainee Interviews

All trainees enrolled in the program will receive an initial and Trainee / Post graduate interview conducted by the OJT program staff.

Trainee Wages

Contractors shall compensate trainees on a graduating pay scale based upon a percentage of the prevailing minimum journeyman wages (Davis-Bacon Act). Minimum pay shall be as follows:

60 percent	of the journeyman wage for the first half of the training period
75 percent	of the journeyman wage for the third quarter of the training period
90 percent	of the journeyman wage for the last quarter of the training period

In no instance shall a trainee be paid less than the local minimum wage. The Contractor shall adhere to the minimum hourly wage rate that will satisfy both the NC Department of Labor (NCDOL) and the Department.

Achieving or Failing to Meet Training Goals

The Contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and who receives training for at least 50 percent of the specific program requirement. Trainees will be allowed to be transferred between projects if required by the Contractor's scheduled workload to meet training goals.

If a contractor fails to attain their training assignments for the calendar year, they may be taken off the NCDOT's Bidders List.

Measurement and Payment

No compensation will be made for providing required training in accordance with these contract documents.

STANDARD SPECIAL PROVISION

AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS

(9-1-11)

Z-2

General Statute 143C-6-11. (h) Highway Appropriation is hereby incorporated verbatim in this contract as follows:

“(h) Amounts Encumbered – Transportation project appropriations may be encumbered in the amount of allotments made to the Department of Transportation by the Director for the estimated payments for transportation project contract work to be performed in the appropriation fiscal year. The allotments shall be multiyear allotments and shall be based on estimated revenues and shall be subject to the maximum contract authority contained in General Statute 143C-6-11(c). Payment for transportation project work performed pursuant to contract in any fiscal year other than the current fiscal year is subject to appropriations by the General Assembly. Transportation project contracts shall contain a schedule of estimated completion progress, and any acceleration of this progress shall be subject to the approval of the Department of Transportation provided funds are available. The State reserves the right to terminate or suspend any transportation project contract, and any transportation project contract shall be so terminated or suspended if funds will not be available for payment of the work to be performed during that fiscal year pursuant to the contract. In the event of termination of any contract, the contractor shall be given a written notice of termination at least 60 days before completion of scheduled work for which funds are available. In the event of termination, the contractor shall be paid for the work already performed in accordance with the contract specifications.”

Payment will be made on any contract terminated pursuant to the special provision in accordance with Subarticle 108-13(E), of the North Carolina Department of Transportation *Standard Specifications for Roads and Structures*, dated January 2018 and as amended by the Standard Special Provision, Division One found elsewhere in this RFP.

***** STANDARD SPECIAL PROVISIONS *****

NCDOT GENERAL SEED SPECIFICATIONS FOR SEED QUALITY

(5-7-11)

Z-3

Seed shall be sampled and tested by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory. When said samples are collected, the vendor shall supply an independent laboratory report for each lot to be tested. Results from seed so sampled shall be final. Seed not meeting the specifications shall be rejected by the Department of Transportation and shall not be delivered to North Carolina Department of Transportation warehouses. If seed has been delivered it shall be available for pickup and replacement at the supplier's expense.

Any re-labeling required by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory, that would cause the label to reflect as otherwise specified herein shall be rejected by the North Carolina Department of Transportation.

Seed shall be free from seeds of the noxious weeds Johnsongrass, Balloonvine, Jimsonweed, Witchweed, Itchgrass, Serrated Tussock, Showy Crotalaria, Smooth Crotalaria, Sicklepod, Sandbur, Wild Onion, and Wild Garlic. Seed shall not be labeled with the above weed species on the seed analysis label. Tolerances as applied by the Association of Official Seed Analysts will NOT be allowed for the above noxious weeds except for Wild Onion and Wild Garlic.

Tolerances established by the Association of Official Seed Analysts will generally be recognized. However, for the purpose of figuring pure live seed, the found pure seed and found germination percentages as reported by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory will be used. Allowances, as established by the NCDOT, will be recognized for minimum pure live seed as listed on the following pages.

The specifications for restricted noxious weed seed refers to the number per pound as follows:

Restricted Noxious Weed	Limitations per Lb. of Seed	Restricted Noxious Weed	Limitations per Lb. of Seed
Blessed Thistle	4 seeds	Cornflower (Ragged Robin)	27 seeds
Cocklebur	4 seeds	Texas Panicum	27 seeds
Spurred Anoda	4 seeds	Bracted Plantain	54 seeds
Velvetleaf	4 seeds	Buckhorn Plantain	54 seeds
Morning-glory	8 seeds	Broadleaf Dock	54 seeds
Corn Cockle	10 seeds	Curly Dock	54 seeds
Wild Radish	12 seeds	Dodder	54 seeds
Purple Nutsedge	27 seeds	Giant Foxtail	54 seeds
Yellow Nutsedge	27 seeds	Horsenettle	54 seeds
Canada Thistle	27 seeds	Quackgrass	54 seeds
Field Bindweed	27 seeds	Wild Mustard	54 seeds
Hedge Bindweed	27 seeds		

Seed of Pensacola Bahiagrass shall not contain more than 7% inert matter, Kentucky Bluegrass, Centipede and Fine or Hard Fescue shall not contain more than 5% inert matter whereas a maximum of 2% inert matter will be allowed on all other kinds of seed. In addition, all seed shall not contain more than 2% other crop seed nor more than 1% total weed seed. The germination rate as tested by the North Carolina Department of Agriculture shall not fall below 70%, which includes both dormant and hard seed. Seed shall be labeled with not more than 7%, 5% or 2% inert matter (according to above specifications), 2% other crop seed and 1% total weed seed.

Exceptions may be made for minimum pure live seed allowances when cases of seed variety shortages are verified. Pure live seed percentages will be applied in a verified shortage situation. Those purchase orders of deficient seed lots will be credited with the percentage that the seed is deficient.

FURTHER SPECIFICATIONS FOR EACH SEED GROUP ARE GIVEN BELOW:

Minimum 85% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 83% pure live seed will not be approved.

Sericea Lespedeza
Oats (seeds)

Minimum 80% pure live seed; maximum 1% total weed seed; maximum 2% total other crop; maximum 144 restricted noxious weed seed per pound. Seed less than 78% pure live seed will not be approved.

Tall Fescue (all approved varieties)	Bermudagrass
Kobe Lespedeza	Browntop Millet
Korean Lespedeza	German Millet - Strain R
Weeping Lovegrass	Clover - Red / White / Crimson
Carpetgrass	

Minimum 78% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 76% pure live seed will not be approved.

Common or Sweet Sundangrass

Minimum 76% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 74% pure live seed will not be approved.

Rye (grain; all varieties)
Kentucky Bluegrass (all approved varieties)
Hard Fescue (all approved varieties)
Shrub (bicolor) Lespedeza

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 noxious weed seed per pound. Seed less than 70% pure live seed will not be approved.

Centipedegrass	Japanese Millet
Crownvetch	Reed Canary Grass
Pensacola Bahiagrass	Zoysia
Creeping Red Fescue	

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 5% inert matter; maximum 144 restricted noxious weed seed per pound.

Barnyard Grass
Big Bluestem
Little Bluestem
Bristly Locust
Birdsfoot Trefoil
Indiangrass
Orchardgrass
Switchgrass
Yellow Blossom Sweet Clover

STANDARD SPECIAL PROVISION**ERRATA**

(10-16-18) (Rev. 12-12-18)

Z-4

Revise the 2018 *Standard Specifications for Roads and Structures* as follows:

Division 6

Page 6-7, Article 609-1 DESCRIPTION, Line 29, replace article number “609-10” with “609-9”.

Division 10

Page 10-78, Article 1056-4 GEOTEXTILES, TABLE 1056-1, Permittivity, Type 2, replace “Table 6^D” with “Table 7^D” and **Permittivity, Type 3^B**, replace “Table 7^D” with “Table 8^D”.

Page 10-162, Article 1080-50 PAINT FOR VERTICAL MARKERS, Line 1, replace article number “1080-50” with “1080-10”.

Page 10-162, Article 1080-61 EPOXY RESIN FOR REINFORCING STEEL, Line 5, replace article number “1080-61” with “1080-11”.

Page 10-162, Article 1080-72 ABRASIVE MATERIALS FOR BLAST CLEANING STEEL, Line 22, replace article number “1080-72” with “1080-12”.

Page 10-163, Article 1080-83 FIELD PERFORMANCE AND SERVICES, Line 25, replace article number “1080-83” with “1080-13”.

***** STANDARD SPECIAL PROVISIONS *******TITLE VI AND NONDISCRIMINATION**

(6-28-77) (Rev 5-2-18)

Z-6

Revise the 2018 *Standard Specifications for Roads and Structures* as follows:

Replace Subarticle 103-4(B) with the following:

The North Carolina Department of Transportation is committed to carrying out the U.S. Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts.

The provisions of this section related to United States Department of Transportation (US DOT) Order 1050.2A, Title 49 Code of Federal Regulations (CFR) part 21, 23 United States Code (U.S.C.) 140 and 23 CFR part 200 (or 49 CFR 303, 49 U.S.C. 5332 or 49 U.S.C. 47123) are applicable to all North Carolina Department of Transportation (NCDOT) contracts and to all related subcontracts, material supply, engineering, architectural and other service contracts, regardless of dollar amount. Any Federal provision that is specifically required not specifically set forth is hereby incorporated by reference.

(1) **Title VI Assurances (USDOT Order 1050.2A, Appendix A)**

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

(a) **Compliance with Regulations**

The contractor (hereinafter includes consultants) shall comply with the Acts and the Regulations relative to Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

(b) **Nondiscrimination**

The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

(c) **Solicitations for Subcontractors, Including Procurements of Materials and Equipment**

In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Nondiscrimination on the grounds of race, color, or national origin.

(d) Information and Reports

The contractor shall provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FHWA to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor shall so certify to the Recipient or the FHWA, as appropriate, and shall set forth what efforts it has made to obtain the information.

(e) Sanctions for Noncompliance:

In the event of a contractor's noncompliance with the Nondiscrimination provisions of this contract, the Recipient will impose such contract sanctions as it and / or the FHWA may determine to be appropriate, including, but not limited to:

- (i) Withholding payments to the contractor under the contract until the contractor complies; and / or
- (ii) Cancelling, terminating, or suspending a contract, in whole or in part.

(f) Incorporation of Provisions

The contractor shall include the provisions of paragraphs (a) through (f) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor shall take action with respect to any subcontract or procurement as the Recipient or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

(2) Title VI Nondiscrimination Program (23 CFR 200.5(p))

The North Carolina Department of Transportation (NCDOT) has assured the USDOT that, as a condition to receiving federal financial assistance, NCDOT will comply with Title VI of the Civil Rights Act of 1964 and all requirements imposed by Title 49 CFR Part 21 and related nondiscrimination authorities to ensure that no person shall, on the ground of race, color, national origin, limited English proficiency, sex, age, or disability (including religion / creed or income-level, where applicable), be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any programs, activities, or services conducted or funded by NCDOT. Contractors and other organizations under contract or agreement with NCDOT must also comply with Title VI and related authorities, therefore:

- (a) During the performance of this contract or agreement, contractors (e.g. subcontractors, consultants, vendors, prime contractors) shall be responsible for

complying with NCDOT's Title VI Program. Contractors are not required to prepare or submit Title VI Programs. To comply with this section, the prime contractor shall:

1. Post NCDOT's Notice of Nondiscrimination and the Contractor's own Equal Employment Opportunity (EEO) Policy in conspicuous locations accessible to all employees, applicants and subcontractors on the jobsite.
 2. Physically incorporate the required Title VI clauses into all subcontracts on federally-assisted and state-funded NCDOT projects, and ensure inclusion by subcontractors into all lower-tier subcontracts.
 3. Required Solicitation Language. The Contractor shall include the following notification in all solicitations for bids and requests for work or material, regardless of funding source:

“The North Carolina Department of Transportation, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 US.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award. In accordance with other related nondiscrimination authorities, bidders and contractors will also not be discriminated against on the grounds of sex, age, disability, low-income level, creed / religion, or limited English proficiency in consideration for an award.”
 4. Physically incorporate the FHWA-1273, in its entirety, into all subcontracts and subsequent lower tier subcontracts on Federal-aid highway construction contracts only.
 5. Provide language assistance services (i.e., written translation and oral interpretation), free of charge, to LEP employees and applicants. Contact NCDOT OCR for further assistance, if needed.
 6. For assistance with these Title VI requirements, contact the NCDOT Title VI Nondiscrimination Program at 1-800-522-0453.
- (b) Subrecipients (e.g. cities, counties, LGAs, planning organizations) may be required to prepare and submit a Title VI Plan to NCDOT, including Title VI Assurances and / or agreements. Subrecipients must also ensure compliance by their contractors and subrecipients with Title VI. (23 CFR 200.9(b)(7))
- (c) If reviewed or investigated by NCDOT, the contractor or subrecipient agrees to take affirmative action to correct any deficiencies found within a reasonable time period, not to exceed 90 calendar days, unless additional time is granted by NCDOT. (23 CFR 200.9(b)(15))

(d) The Contractor shall be responsible for notifying subcontractors of NCDOT's External Discrimination Complaints Process.

1. Applicability

Title VI and related laws protect participants and beneficiaries (e.g., members of the public and contractors) from discrimination by NCDOT employees, subrecipients and contractors, regardless of funding source.

2. Eligibility

Any person, or class of persons, who believes he / she has been subjected to discrimination based on race, color, national origin, Limited English Proficiency (LEP), sex, age, or disability (and religion in the context of employment, aviation, or transit) may file a written complaint. The law also prohibits intimidation or retaliation of any sort.

3. Time Limits and Filing Options

Complaints may be filed by the affected individual(s) or a representative and must be filed no later than 180 calendar days after the following:

- (i) The date of the alleged act of discrimination; or
- (ii) The date when the person(s) became aware of the alleged discrimination; or
- (iii) Where there has been a continuing course of conduct, the date on which that conduct was discontinued or the latest instance of the conduct.

Title VI and related discrimination complaints may be submitted to the following entities:

- North Carolina Department of Transportation, Office of Civil Rights, Title VI Program, 1511 Mail Service Center, Raleigh, NC 27699-1511; toll free 1-800-522-0453
- Federal Highway Administration, North Carolina Division Office, 310 New Bern Avenue, Suite 410, Raleigh, NC 27601; 919-747-7010
- US Department of Transportation, Departmental Office of Civil Rights, External Civil Rights Programs Division, 1200 New Jersey Avenue, SE, Washington, DC 20590; 202-366-4070

4. Format for Complaints

Complaints must be in writing and signed by the complainant(s) or a representative, and include the complainant's name, address, and telephone number. Complaints received by fax or e-mail will be acknowledged and processed. Allegations received by telephone will be reduced to writing and provided to the complainant for confirmation or revision before processing. Complaints will be accepted in other languages, including Braille.

5. Discrimination Complaint Form

Contact NCDOT Civil Rights to receive a full copy of the Discrimination Complaint Form and procedures.

6. Complaint Basis

Allegations must be based on issues involving race, color, national origin (LEP), sex, age, disability, or religion (in the context of employment, aviation or transit). “Basis” refers to the complainant’s membership in a protected group category.

TABLE 103-1 COMPLAINT BASIS			
Protected Categories	Definition	Examples	Applicable Nondiscrimination Authorities
Race and Ethnicity	An individual belonging to one of the accepted racial groups; or the perception, based usually on physical characteristics that a person is a member of a racial group	Black / African American, Hispanic / Latino, Asian, American Indian / Alaska Native, Native Hawaiian / Pacific Islander, White	Title VI of the Civil Rights Act of 1964; 49 CFR Part 21; 23 CFR 200; 49 U.S.C. 5332(b); 49 U.S.C. 47123. <i>(Executive Order 13166)</i>
Color	Color of skin, including shade of skin within a racial group	Black, White, Brown, Yellow, etc.	
National Origin <i>(Limited English Proficiency)</i>	Place of birth. Citizenship is not a factor. <i>(Discrimination based on language or a person's accent is also covered)</i>	Mexican, Cuban, Japanese, Vietnamese, Chinese	
Sex	Gender. The sex of an individual. <i>Note: Sex under this program does not include sexual orientation.</i>	Women and Men	1973 Federal-Aid Highway Act; 49 U.S.C. 5332(b); 49 U.S.C. 47123.
Age	Persons of any age	21-year-old person	Age Discrimination Act of 1975 49 U.S.C. 5332(b); 49 U.S.C. 47123.
Disability	Physical or mental impairment, permanent or temporary, or perceived.	Blind, alcoholic, para-amputee, epileptic, diabetic, arthritic	Section 504 of the Rehabilitation Act of 1973; Americans with Disabilities Act of 1990
Religion (in the context of employment) <i>(Religion / Creed in all aspects of any aviation or transit-related construction)</i>	An individual belonging to a religious group; or the perception, based on distinguishable characteristics that a person is a member of a religious group. In practice, actions taken as a result of the moral and ethical beliefs as to what is right and wrong, which are sincerely held with the strength of traditional religious views. <i>Note: Does not have to be associated with a recognized religious group or church; if an individual sincerely holds to the belief, it is a protected religious practice.</i>	Muslim, Christian, Sikh, Hindu, etc.	Title VII of the Civil Rights Act of 1964; 23 CFR 230; FHWA-1273 Required Contract Provisions. <i>(49 U.S.C. 5332(b); 49 U.S.C. 47123)</i>

(3) Pertinent Nondiscrimination Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest agrees to comply with the following non-discrimination statutes and authorities, including, but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects)
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex)
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability) and 49 CFR Part 27
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age)
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex)
- (g) The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not)
- (h) Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38
- (i) The Federal Aviation Administration's Nondiscrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex)
- (j) Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations

- (k) Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English Proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100)
- (l) Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq)
- (m) Title VII of the Civil Rights Act of 1964 (42 U.S.C. § 2000e et seq., Pub. L. 88-352), (prohibits employment discrimination on the basis of race, color, religion, sex, or national origin).

(4) Additional Title VI Assurances

***The following Title VI Assurances (Appendices B, C and D) shall apply, as applicable*

(a) Clauses for Deeds Transferring United States Property (1050.2A, Appendix B)

The following clauses shall be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of Assurance 4.

NOW, THEREFORE, the U.S. Department of Transportation as authorized by law and upon the condition that the North Carolina Department of Transportation (NCDOT) will accept title to the lands and maintain the project constructed thereon in accordance with the North Carolina General Assembly, the Regulations for the Administration of the Federal-Aid Highway Program, and the policies and procedures prescribed by the Federal Highway Administration of the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the U.S Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. § 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the NCDOT all the right, title and interest of the U.S. Department of Transportation in and to said lands described in Exhibit A attached hereto and made a part hereof.

(HABENDUM CLAUSE)

TO HAVE AND TO HOLD said lands and interests therein unto the North Carolina Department of Transportation (NCDOT) and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the NCDOT, its successors and assigns.

The NCDOT, in consideration of the conveyance of said lands and interests in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (1) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [,] [and]* (2) that the NCDOT will use the lands and interests in lands and interests in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended [, and (3) that in the event of breach of any of the above-mentioned nondiscrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said land, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the U.S. Department of Transportation and its assigns as such interest existed prior to this instruction].*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.)

(b) Clauses for Transfer of Real Property Acquired or Improved Under the Activity, Facility, or Program (1050.2A, Appendix C)

The following clauses shall be included in deeds, licenses, leases, permits, or similar instruments entered into by the North Carolina Department of Transportation (NCDOT) pursuant to the provisions of Assurance 7(a):

1. The (grantee, lessee, permittee, etc. as appropriate) for himself / herself, his / her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add "as a covenant running with the land"] that:
 - (i.) In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.

2. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued. *
3. With respect to a deed, in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the NCDOT and its assigns. *

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

(c) Clauses for Construction / Use / Access to Real Property Acquired Under the Activity, Facility or Program (1050.2A, Appendix D)

The following clauses shall be included in deeds, licenses, permits, or similar instruments / agreements entered into by the North Carolina Department of Transportation (NCDOT) pursuant to the provisions of Assurance 7(b):

1. The (grantee, licensee, permittee, etc., as appropriate) for himself / herself, his / her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended, set forth in this Assurance.
2. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued. *
3. With respect to deeds, in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will there upon revert to and vest in and become the absolute property of the NCDOT and its assigns. *

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

***** STANDARD SPECIAL PROVISIONS *****

MINORITY AND FEMALE EMPLOYMENT REQUIREMENTS

(12-18-07)

Z-7

NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (*EXECUTIVE NUMBER 11246*)

1. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, see as shown on the attached sheet entitled "Employment Goals for Minority and Female Participation".

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in *41 CFR Part 60-4* shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in *41 CFR 60-4.3(a)*, and its effort to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project or the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the executive Order and the regulations in *41 CFR Part 60-4*. Compliance with the goals will be measured against the total work hours performed.

2. As used in this Notice and in the contract resulting from this solicitation, the "covered area" is the county or counties shown on the cover sheet of the proposal form and contract.

**EMPLOYMENT GOALS FOR MINORITY
AND FEMALE PARTICIPATION**

Economic Areas

Area 023 29.7%

Bertie County
Camden County
Chowan County
Gates County
Hertford County
Pasquotank County
Perquimans County

Area 024 31.7%

Beaufort County
Carteret County
Craven County
Dare County
Edgecombe County
Green County
Halifax County
Hyde County
Jones County
Lenoir County
Martin County
Nash County
Northampton County
Pamlico County
Pitt County
Tyrrell County
Washington County
Wayne County
Wilson County

Area 025 23.5%

Columbus County
Duplin County
Onslow County
Pender County

Area 026 33.5%

Bladen County
Hoke County
Richmond County
Robeson County
Sampson County
Scotland County

Area 027 24.7%

Chatham County
Franklin County
Granville County
Harnett County
Johnston County
Lee County
Person County
Vance County
Warren County

Area 028 15.5%

Alleghany County
Ashe County
Caswell County
Davie County
Montgomery County
Moore County
Rockingham County
Surry County
Watauga County
Wilkes County

Area 029 15.7%

Alexander County
Anson County
Burke County
Cabarrus County
Caldwell County
Catawba County
Cleveland County
Iredell County
Lincoln County
Polk County
Rowan County
Rutherford County
Stanly County

Area 0480 8.5%

Buncombe County
Madison County

Area 030 6.3%

Avery County
Cherokee County
Clay County
Graham County
Haywood County
Henderson County
Jackson County
McDowell County
Macon County
Mitchell County
Swain County
Transylvania County
Yancey County

SMSA Areas

Area 5720 26.6%

Currituck County

Area 9200 20.7%

Brunswick County

New Hanover County

Area 2560 24.2%

Cumberland County

Area 6640 22.8%

Durham County

Orange County

Wake County

Area 1300 16.2%

Alamance County

Area 3120 16.4%

Davidson County

Forsyth County

Guilford County

Randolph County

Stokes County

Yadkin County

Area 1520 18.3%

Gaston County

Mecklenburg County

Union County

Goals for Female

Participation in Each Trade

(Statewide) 6.9%

STANDARD SPECIAL PROVISION

REQUIRED CONTRACT PROVISIONS FEDERAL - AID CONSTRUCTION CONTRACTS

FHWA - 1273 Electronic Version - May 1, 2012

Z-8

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

- A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).
The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.
Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.
Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).
2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.
3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.
4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are

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incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

- a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.
- b. The contractor will accept as its operating policy the following statement:
"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."
2. **EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.
3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
 - a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.
 - b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
 - c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.
 - d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
 - e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.
 - a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.
 - b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.
 - c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.
5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:
 - a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
 - b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
 - c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
 - d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.
6. **Training and Promotion:**
 - a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.
 - b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).
 - c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
 - d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.
7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

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- a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.
 - b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
 - c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.
 - d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.
8. **Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.
9. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.
- a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.
 - b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.
10. **Assurance Required by 49 CFR 26.13(b):**
- a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.
 - b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.
11. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.
- a. The records kept by the contractor shall document the following:
 - (1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;
 - (2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and
 - (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;
 - b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

- a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is

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attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

- b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
 - (i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
 - (ii) The classification is utilized in the area by the construction industry; and
 - (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
 - (2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
 - (3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
 - (4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
 - c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
 - d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
2. **Withholding.** The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.
 3. **Payrolls and basic records**
 - a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.
 - b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available

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for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.

- (2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
 - (i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;
 - (ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
 - (iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.
- (4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL). Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL). Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

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- c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.
- d. Apprentices and Trainees (programs of the U.S. DOT). Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.
5. **Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.
6. **Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.
7. **Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
8. **Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
9. **Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.
10. **Certification of eligibility.**
 - a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
2. **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.
3. **Withholding for unpaid wages and liquidated damages.** The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.
4. **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).
 - a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:
 - (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
 - (2) the prime contractor remains responsible for the quality of the work of the leased employees;
 - (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

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- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.
- b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.
- The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.
 - The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.
 - No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.
 - The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

- In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.
- It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).
- Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

- That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
- That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.
- d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).
- f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
- g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.
- h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov>), which is compiled by the General Services Administration.
- i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

- a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:
 - (1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;
 - (2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and
 - (4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of

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Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers to any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.
2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:
 - a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
 - b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.
3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

STANDARD SPECIAL PROVISION
MINIMUM WAGES
GENERAL DECISION NC20200086 01/03/2020 NC86

Z-086

Date: January 3, 2020

General Decision Number: NC20200086 01/03/2020 NC86

Superseded General Decision Numbers: NC20190086

State: North Carolina

Construction Type: HIGHWAY

COUNTIES

Alleghany	Jackson	Surry
Ashe	Lincoln	Swain
Avery	Macon	Transylvania
Cherokee	McDowell	Watauga
Clay	Mitchell	Wilkes
Cleveland	Polk	Yancey
Graham	Rutherford	

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract for calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the Design-Build Team must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2) – (60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number

0

Publication Date

01/03/2020

SUNC2014-001 11/13/2014

	Rates	Fringes
BLASTER	21.83	
CARPENTER	12.54	
CEMENT MASON / CONCRETE FINISHER	14.10	
ELECTRICIAN		
Electrician	19.19	2.39
Telecommunications Technician	15.13	
IRONWORKER	14.53	
LABORER		
Asphalt Raker and Spreader	12.23	
Asphalt Screed / Jackman	15.22	
Carpenter Tender	10.80	
Cement Mason / Concrete Finisher Tender	12.26	
Common or General	10.68	
Guardrail / Fence Installer	13.43	
Pipelayer	12.22	
Traffic Signal / Lighting Installer	15.85	
PAINTER		
Bridge	19.62	
POWER EQUIPMENT OPERATORS		
Asphalt Broom Tractor	11.00	
Bulldozer Fine	16.20	
Bulldozer Rough	13.89	
Concrete Grinder / Groover	24.66	
Crane Boom Trucks	14.44	.53
Crane Other	19.59	
Crane Rough / All-Terrain	21.25	
Drill Operator Rock	15.25	
Drill Operator Structure	20.92	
Excavator Fine	16.11	
Excavator Rough	13.10	
Grader / Blade Fine	19.24	
Grader / Blade Rough	13.07	
Loader 2 Cubic Yards or Less	13.38	
Loader Greater Than 2 Cubic Yards	16.01	
Material Transfer Vehicle (Shuttle Buggy)	17.39	
Mechanic	18.51	
Milling Machine	13.88	
Off-Road Hauler / Water Tanker	13.87	
Oiler / Greaser	14.98	
Pavement Marking Equipment	13.33	
Paver Asphalt	15.68	.05
Roller Asphalt Breakdown	14.05	.06
Roller Asphalt Finish	14.98	.04
Roller Other	11.75	
Scraper Finish	13.87	
Scraper Rough	11.53	
Slip Form Machine	20.79	
Tack Truck / Distributor Operator	14.67	.06

	Rates	Fringes
TRUCK DRIVER		
GVWR of 26,000 Lbs or Less	11.72	
GVWR of 26,000 Lbs or Greater	13.50	

Welders - Receive rate prescribed for craft performing operation to which welding is incidental.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four-letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate

based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated / CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

- 2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

- 3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

- 4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

STANDARD SPECIAL PROVISION
MINIMUM WAGES
GENERAL DECISION NC20200087 01/03/2020 NC87

Z-087

Date: January 3, 2020

General Decision Number: NC20200087 01/3/2020 NC87

Superseded General Decision Numbers: NC20190087

State: North Carolina

Construction Type: HIGHWAY

COUNTIES

Alexander	Caldwell	Henderson
Buncombe	Catawba	Madison
Burke	Haywood	

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract for calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the Design-Build Team must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2) – (60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number

0

Publication Date

01/03/2020

SUNC2014-002 11/13/2014

	Rates	Fringes
BLASTER	20.93	
CARPENTER	13.48	
CEMENT MASON / CONCRETE FINISHER	14.40	
ELECTRICIAN		
Electrician	18.79	2.62
Telecommunications Technician	14.67	1.67
IRONWORKER	12.48	
LABORER		
Asphalt Raker and Spreader	11.76	
Asphalt Screed / Jackman	15.38	.08
Carpenter Tender	10.80	
Cement Mason / Concrete Finisher Tender	11.04	
Common or General	11.90	
Guardrail / Fence Installer	13.09	
Pipelayer	12.87	
Traffic Signal / Lighting Installer	15.33	.22
PAINTER		
Bridge	20.67	
POWER EQUIPMENT OPERATORS		
Asphalt Broom Tractor	10.80	
Bulldozer Fine	16.28	
Bulldozer Rough	14.51	
Concrete Grinder / Groover	19.20	
Crane Boom Trucks	18.19	
Crane Other	18.69	
Crane Rough / All-Terrain	19.19	
Drill Operator Rock	15.00	
Drill Operator Structure	21.07	
Excavator Fine	16.02	
Excavator Rough	14.67	
Grader / Blade Fine	19.86	
Grader / Blade Rough	15.12	
Loader 2 Cubic Yards or Less	12.38	
Loader Greater Than 2 Cubic Yards	17.91	
Material Transfer Vehicle (Shuttle Buggy)	15.44	
Mechanic	17.86	
Milling Machine	15.08	
Off-Road Hauler / Water Tanker	11.95	
Oiler / Greaser	15.05	
Pavement Marking Equipment	11.99	
Paver Asphalt	17.84	.08
Paver Concrete	18.20	
Roller Asphalt Breakdown	15.00	.08
Roller Asphalt Finish	16.08	.07
Roller Other	12.51	.03
Scraper Finish	12.86	
Scraper Rough	13.83	
Slip Form Machine	20.38	
Tack Truck / Distributor Operator	14.81	.02

	Rates	Fringes
TRUCK DRIVER		
GVWR of 26,000 Lbs or Less	12.48	
GVWR of 26,000 Lbs or Greater	13.65	

Welders - Receive rate prescribed for craft performing operation to which welding is incidental.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four-letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate

based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated / CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

- 2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
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The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

- 3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

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END OF GENERAL DECISION

STANDARD SPECIAL PROVISION
MINIMUM WAGES
GENERAL DECISION NC20200088 01/03/2020 NC88

Z-088

Date: January 3, 2020

General Decision Number: NC20200088 01/03/2020 NC88

Superseded General Decision Numbers: NC20190088

State: North Carolina

Construction Type: HIGHWAY

COUNTIES

Alamance	Forsyth	Randolph
Anson	Gaston	Rockingham
Cabarrus	Guilford	Stokes
Chatham	Mecklenburg	Union
Davie	Orange	Yadkin
Durham	Person	

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract for calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the Design-Build Team must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2) – (60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number

0

Publication Date

01/03/2020

SUNC2014-003 11/14/2014

	Rates	Fringes
BLASTER	18.64	
CARPENTER	13.68	.05
CEMENT MASON / CONCRETE FINISHER	13.93	
ELECTRICIAN		
Electrician	18.79	2.72
Telecommunications Technician	15.19	1.25
IRONWORKER	13.30	
LABORER		
Asphalt Raker and Spreader	12.78	
Asphalt Screed / Jackman	14.50	
Carpenter Tender	12.51	.27
Cement Mason / Concrete Finisher Tender	11.04	
Common or General	10.80	.01
Guardrail / Fence Installer	13.22	
Pipelayer	12.43	
Traffic Signal / Lighting Installer	15.65	.24
PAINTER		
Bridge	23.77	
POWER EQUIPMENT OPERATORS		
Asphalt Broom Tractor	10.80	
Bulldozer Fine	16.13	
Bulldozer Rough	14.36	
Concrete Grinder / Groover	17.92	
Crane Boom Trucks	18.19	
Crane Other	19.83	
Crane Rough / All-Terrain	19.10	
Drill Operator Rock	14.28	
Drill Operator Structure	20.89	
Excavator Fine	16.95	
Excavator Rough	13.63	
Grader / Blade Fine	19.84	
Grader / Blade Rough	15.47	
Loader 2 Cubic Yards or Less	13.31	
Loader Greater Than 2 Cubic Yards	16.19	
Material Transfer Vehicle (Shuttle Buggy)	15.44	
Mechanic	17.51	
Milling Machine	15.22	
Off-Road Hauler / Water Tanker	11.83	
Oiler / Greaser	14.16	
Pavement Marking Equipment	12.05	
Paver Asphalt	15.97	
Paver Concrete	18.20	
Roller Asphalt Breakdown	12.79	
Roller Asphalt Finish	13.76	
Roller Other	12.08	
Scraper Finish	12.65	
Scraper Rough	11.50	
Slip Form Machine	19.60	
Tack Truck / Distributor Operator	14.82	

	Rates	Fringes
TRUCK DRIVER		
GVWR of 26,000 Lbs or Less	11.45	
GVWR of 26,000 Lbs or Greater	13.57	.03

Welders - Receive rate prescribed for craft performing operation to which welding is incidental.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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Survey Rate Identifiers

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based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated / CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

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- * a survey underlying a wage determination
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- * a conformance (additional classification and rate) ruling

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Wage and Hour Division
U. S. Department of Labor
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Washington, D.C. 20210

- 2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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U.S. Department of Labor
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Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

- 4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

STANDARD SPECIAL PROVISION
MINIMUM WAGES
GENERAL DECISION NC20200090 01/03/2020 NC90

Z-090

Date: January 3, 2020

General Decision Number: NC20200090 01/03/2020 NC90

Superseded General Decision Numbers: NC20190090

State: North Carolina

Construction Type: HIGHWAY

COUNTIES

Brunswick	Greene	Onslow
Cumberland	Hoke	Pender
Currituck	Johnston	Pitt
Edgecombe	Nash	Wake
Franklin	New Hanover	Wayne

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract for calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the Design-Build Team must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2) – (60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number

0

Publication Date

01/03/2020

SUNC2014-005 11/17/2014

	Rates	Fringes
BLASTER	21.04	
CARPENTER	13.72	
CEMENT MASON / CONCRETE FINISHER	14.48	
ELECTRICIAN		
Electrician	17.97	
Telecommunications Technician	16.79	.63
IRONWORKER	16.02	
LABORER		
Asphalt Raker and Spreader	12.46	
Asphalt Screed / Jackman	14.33	
Carpenter Tender	12.88	
Cement Mason / Concrete Finisher Tender	12.54	
Common or General	10.80	
Guardrail / Fence Installer	12.87	
Pipelayer	12.17	
Traffic Signal / Lighting Installer	14.89	
PAINTER		
Bridge	24.57	
POWER EQUIPMENT OPERATORS		
Asphalt Broom Tractor	11.85	
Bulldozer Fine	17.04	
Bulldozer Rough	14.34	
Concrete Grinder / Groover	20.34	2.30
Crane Boom Trucks	20.54	
Crane Other	20.08	
Crane Rough / All-Terrain	20.67	
Drill Operator Rock	14.38	
Drill Operator Structure	21.14	
Excavator Fine	16.60	
Excavator Rough	14.00	
Grader / Blade Fine	18.47	
Grader / Blade Rough	14.62	
Loader 2 Cubic Yards or Less	13.76	
Loader Greater Than 2 Cubic Yards	14.14	
Material Transfer Vehicle (Shuttle Buggy)	15.18	
Mechanic	17.55	
Milling Machine	15.36	
Off-Road Hauler / Water Tanker	11.36	
Oiler / Greaser	13.55	
Pavement Marking Equipment	12.11	
Paver Asphalt	15.59	
Paver Concrete	18.20	
Roller Asphalt Breakdown	12.45	
Roller Asphalt Finish	13.85	
Roller Other	11.36	
Scraper Finish	12.71	
Scraper Rough	11.35	
Slip Form Machine	16.50	
Tack Truck / Distributor Operator	14.52	

	Rates	Fringes
TRUCK DRIVER		
GVWR of 26,000 Lbs or Less	11.12	
GVWR of 26,000 Lbs or Greater	12.37	

Welders - Receive rate prescribed for craft performing operation to which welding is incidental.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated / CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

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- 2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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200 Constitution Avenue, N.W.
Washington, D.C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

- 3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

- 4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

STANDARD SPECIAL PROVISION
MINIMUM WAGES
GENERAL DECISION NC20200091 01/03/2020 NC91

Z-091

Date: January 3, 2020

General Decision Number: NC20200091 01/03/2020 NC91

Superseded General Decision Numbers: NC20190091

State: North Carolina

Construction Type: HIGHWAY

COUNTIES

Beaufort	Dare	Jones	Sampson
Bertie	Duplin	Lenoir	Scotland
Bladen	Gates	Martin	Tyrrell
Camden	Granville	Northampton	Vance
Carteret	Halifax	Pamlico	Warren
Chowan	Harnett	Pasquotank	Washington
Columbus	Hertford	Perquimans	Wilson
Craven	Hyde	Robeson	

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract for calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the Design-Build Team must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2) – (60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number

0

Publication Date

01/03/2020

SUNC2014-006 11/17/2014

	Rates	Fringes
BLASTER	21.85	
CARPENTER	13.72	
CEMENT MASON / CONCRETE FINISHER	14.26	
ELECTRICIAN		
Electrician	18.69	2.66
Telecommunications Technician	14.72	1.67
IRONWORKER	16.32	
LABORER		
Asphalt Raker and Spreader	12.42	
Asphalt Screed / Jackman	13.48	
Carpenter Tender	10.85	
Cement Mason / Concrete Finisher Tender	11.35	
Common or General	10.80	
Guardrail / Fence Installer	13.39	
Pipelayer	13.31	
Traffic Signal / Lighting Installer	16.88	
PAINTER		
Bridge	19.62	
POWER EQUIPMENT OPERATORS		
Asphalt Broom Tractor	13.28	
Bulldozer Fine	18.46	
Bulldozer Rough	14.09	
Concrete Grinder / Groover	24.66	
Crane Boom Trucks	17.25	
Crane Other	21.48	
Crane Rough / All-Terrain	19.00	
Drill Operator Rock	15.43	1.61
Drill Operator Structure	19.12	
Excavator Fine	17.61	
Excavator Rough	12.99	
Grader / Blade Fine	16.73	
Grader / Blade Rough	15.28	
Loader 2 Cubic Yards or Less	10.80	
Loader Greater Than 2 Cubic Yards	13.58	
Material Transfer Vehicle (Shuttle Buggy)	17.39	
Mechanic	18.63	
Milling Machine	14.38	
Off-Road Hauler / Water Tanker	9.30	
Oiler / Greaser	13.45	
Pavement Marking Equipment	11.87	
Paver Asphalt	15.53	
Roller Asphalt Breakdown	12.13	
Roller Asphalt Finish	13.65	
Roller Other	10.80	
Scraper Finish	13.98	
Scraper Rough	10.80	
Slip Form Machine	19.29	
Tack Truck / Distributor Operator	14.56	

	Rates	Fringes
TRUCK DRIVER		
GVWR of 26,000 Lbs or Less	10.80	
GVWR of 26,000 Lbs or Greater	12.04	

Welders - Receive rate prescribed for craft performing operation to which welding is incidental.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate

includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated / CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

- 2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

- 3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

- 4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

MINIMUM WAGES

(07-21-09)

Z-5

FEDERAL: The Fair Labor Standards Act provides that with certain exceptions every employer must pay wages at the rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

STATE: The North Carolina Minimum Wage Act provides that every employer shall pay to each of his employees wages at a rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all skilled labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all intermediate labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all unskilled labor on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The determination of the intent of the application of these Acts to the project's contract shall be the Design-Build Team's responsibility.

The Design-Build Team shall have no claim against the Department of Transportation for any changes in the minimum wage laws, State or Federal. It shall be the responsibility of the Design-Build Team to be fully informed of all Federal and State Laws affecting the project's contract.

***** STANDARD SPECIAL PROVISIONS *****

(10-23-17)

DIVISION ONE OF STANDARD SPECIFICATIONS

Division One of the 2018 NCDOT *Standard Specifications for Roads and Structures (Standard Specifications)* shall apply except as follows:

Definitions: Throughout Division One of the 2018 *Standard Specifications for Roads and Structures*, the term “Contractor” is replaced with “Design-Build Team”, the term “Bidder” is replaced with “Proposer,” the term “Bid” is replaced by “Price Proposal,” and the phrase “lowest Responsible Bidder” is replaced with “responsible Proposer with the Best Design-Build Proposal.” The replacement of “Contractor” with “Design-Build Team” does not apply to Article 102-2. The replacement of the above terms also does not apply when the terms are part of a phrase (e.g. bid bond, prime contractor, total amount bid, etc.)

Deletions: Articles 102-3(B), 102-4, 102-8(B), 102-9(C)(2), 103-2(B), and 103-4(C) of the 2018 *Standard Specifications for Roads and Structures* are deleted from Design-Build Contracts.

Modifications: The remainder of this Standard Special Provision includes modifications to Division One of the 2018 *Standard Specifications for Roads and Structures*.

**SECTION 101
DEFINITION OF TERMS**

Page 1-3, Article 101-3, replace and add certain definitions as follows:

ADDITIONAL WORK

Additional work is that which results from a change or alteration to the contract and for which there are contract unit prices in the original contract or an executed supplemental agreement.

ADVERTISEMENT

The public advertisement inviting Statements of Qualifications for the design and construction of specific projects.

AWARD

The decision of the Department of Transportation to accept the Technical and Price Proposals of the selected Design-Build Team for work which is subject to the furnishing of payment and performance bonds, and such other conditions as may be otherwise provided by law, the Request for Proposals, and the 2018 *Standard Specifications for Roads and Structures*.

CONTRACT

The executed agreement between the Department and the successful Proposer, covering the performance of, and compensation for, the work. The term contract is all inclusive with reference to all written agreements affecting a contractual relationship and all documents referred to therein. The contract shall include, but not be limited to, the Request for Proposals, the Technical Proposal, the Price Proposal, the printed contract form and attachments, contract bonds, plans and associated special provisions prepared by the Design-Build Team, standard specifications and supplemental specifications, standard special provisions and project special provisions contained in the Request for Proposals or as developed by the Design-Build Team and accepted by the Department, and all executed supplemental agreements. The contract shall constitute one instrument.

DATE OF AVAILABILITY

That date, established as set forth in the Request for Proposals, by which it is anticipated that the Contract will be executed and sufficient design efforts or work sites within the project limits will be available for the Design-Build Team to begin the controlling operations or design.

DESIGN-BUILD

A form of contracting in which the successful Proposer undertakes responsibility for both the design and construction of a project.

DESIGN-BUILD TEAM

An individual, partnership, joint venture, corporation or other legal entity that furnishes the necessary design and construction services, whether by itself or through subcontracts.

DESIGN-BUILD PROPOSAL

A proposal to contract consisting of a separately sealed Technical Proposal and a separately sealed Price Proposal submitted in response to a Request for Proposals on a Design-Build project.

PLANS

The project plans, Standard Drawings, working drawings and supplemental drawings, or reproductions thereof, accepted by the Engineer, which show the location, character, dimensions and details of the work to be performed. Unless otherwise noted within the Request for Proposals, the term “plans” refers to plans as developed by the Design-Build Team and accepted by the Department.

(A) Standard Drawings

Drawings approved for repetitive use, showing details to be used where appropriate. All Standard Drawings approved by the Department plus subsequent revisions and additions. Standard Drawings are available for purchase from:

State Contract Officer
1591 Mail Service Center
Raleigh, NC 27699-1591

(B) Preliminary Plans

Department-furnished drawings distributed in concert with a Request for Proposals, or as developed by the Design-Build Team.

(C) Project Plans

Construction drawings prepared, sealed and completed by the Design-Build Team, or as provided by the Department, that contain specific details and dimensions peculiar to the work.

(D) Working Drawings and Supplemental Drawings

Supplemental design sheets, shop drawings, or similar data which the Design-Build Team is required to submit to the Engineer.

(E) As-Constructed Drawings

Red-lined mark-up of the latest Released for Construction (RFC) Plans containing the information listed under As-Constructed Plans in the Records and Reports Section of the NCDOT Construction Manual.

(F) As-Built Plans

Coordinately correct plans documenting the details, dimensions and locations of the completed work.

PRICE PROPOSAL

The offer of a Proposer, submitted on the prescribed forms, to perform the work and furnish the labor and materials at the price quoted.

PROPOSER

An individual, partnership, firm, corporation, LLC, or joint venture formally submitting a Technical Proposal and Price Proposal in response to a Request for Proposals.

REQUEST FOR PROPOSALS

The paper document provided by the Department that the Proposer uses to develop his paper offer to perform the work at designated bid prices.

RIGHT OF WAY

The land area shown on the plans as right of way within which the project is to be constructed.

SCHEDULE OF VALUES

A schedule of work items necessary to complete work, along with the progress of each work item, primarily for the purpose of partial payments.

TABLE OF QUANTITIES

A listing of work items (corresponding to the items in the Trns*port pay item list) that contributes to a project completion. The table shall include estimated quantities for each work item.

TECHNICAL PROPOSAL

A submittal from a Proposer, in accordance with the Request for Proposals requirements, for the purpose of final selection. The Technical Proposal is defined to also include any supplemental information requested by the Department from a Proposer prior to the Preferred Procurement Track and Preferred Proposer Announcement.

SECTION 102 PROPOSAL REQUIREMENTS AND CONDITIONS

Page 1-9, delete Article 102-1 and replace with the following:

102-1 INVITATION TO BID

After the advertisement has been made, an Invitation to Bid will be made available to known prequalified contractors and any other contracting firms, material suppliers and other interested parties who have requested they be placed on the Invitation to Bid mailing list, informing them that Statements of Qualifications and Design-Build Proposals will be received for the design and construction of specific projects. Such invitation will indicate the contract identification number, length, locations and descriptions; a general summary of the scope of work to be performed; and information on how to receive a Request for Qualifications.

All projects will be advertised in daily newspapers throughout the state before the Price Proposal opening.

Page 1-12, delete Article 102-3 and replace with the following:

102-3 CONTENTS OF REQUEST FOR PROPOSALS

A Request for Proposals will be furnished by the Department to the selected Proposers from among the respondents to the Request for Qualifications. Each Request for Proposals will be marked on the front cover by the Department with an identifier of the Proposer to whom it is being furnished. This Request for Proposals will state the location of the project and will show a schedule of contract items for which Technical and Price Proposals are invited. It will set forth the date and time Technical and Price Proposals are to be submitted and when the Preferred Procurement Track and Preferred Proposer are announced. The Request for Proposals will also include special provisions or requirements that vary from or are not contained in any preliminary design information or standard specifications.

The Request for Proposals will also include the printed contract forms and signature sheets for execution by both parties to the contract. In the event the Proposer is awarded the contract, execution of the Request for Proposals by the Proposer is considered the same as execution of the contract.

Standard specifications, sealed plans specifically identified as the Department's responsibility and other documents designated in the Request for Proposals shall be considered a part of the Request for Proposals whether or not they are attached thereto. All papers bound to the Request for Proposals are necessary parts thereof and shall not be detached, taken apart, or altered.

The names and identity of each prospective Proposer that receives a copy of the Request for Qualifications for the purposes of submitting a Statement of Qualifications shall be made public, except that a potential Proposer who obtains a Request for Qualifications may, at the time of ordering, request that his name remain confidential.

One copy of the Final Request for Proposals will be furnished to each prospective Proposer. Additional copies may be purchased for the sum of \$25 each. The copy of the Final Request for Proposals marked with the Proposer's name and prequalification number shall be returned to the Department as the Proposer's Price Proposal.

Page 1-14, Article 102-7, 4th paragraph, delete the first two sentences and replace with the following:

Details shown in the subsurface investigation report are preliminary only. The subsurface investigation and subsurface report, if provided, is done so for information purposes only.

Pages 1-14, delete Article 102-8 and replace with the following:

102-8 PREPARATION AND SUBMISSION OF BIDS

All Price Proposals shall be prepared and submitted in accordance with the following requirements:

1. The Request for Proposals provided by the Department shall be used and shall not be taken apart or altered. The Price Proposal shall be submitted on the same form, which has been furnished to the Proposer by the Department as identified by the Proposer's name marked on the front cover by the Department.
2. All entries including signatures shall be written in ink.
3. The Proposer shall submit a lump sum or unit price for every item in the Request for Proposals. The lump sum or unit prices bid for the various contract items shall be written in figures.
4. An amount bid shall be entered in the Request for Proposals for every item and the price shall be written in figures in the "Amount Bid" column in the Request for Proposals.
5. An amount bid shall be entered in the Request for Proposals for every item on which a unit price has been submitted. The amount bid for each item other than lump sum items shall be determined by multiplying each unit bid price by the quantity for that item and shall be written in figures in the Amount Bid column in the Request for Proposals.
6. The total amount bid shall be written in figures in the proper place in the Request for Proposals. The total amount bid shall be determined by adding the amounts bid for each lump sum item.
7. Changes in any entry shall be made by marking through the entry in ink and making the correct entry adjacent thereto in ink. A representative of the Proposer shall initial the change in ink.
8. The Price Proposal shall be properly executed. To constitute proper execution, the Price Proposal shall be executed in strict compliance with the following:
 - a. If a Price Proposal is by an individual, it shall show the name of the individual and shall be signed by the individual with the word "Individually" appearing under the signature. If the individual operates under a firm name, the Price Proposal shall be signed in the name of the individual doing business under the firm name.
 - b. If the Price Proposal is by a corporation, it shall be executed in the name of the corporation by the President, Vice President, or Assistant Vice President. It shall be attested by the Secretary or Assistant Secretary. The seal of the corporation shall be affixed. If the Price Proposal is executed on behalf of a corporation in any other manner than as above, a certified copy of the minutes of the Board of Directors of said corporation authorizing the manner and style of execution and the authority of the person executing shall be attached to the Price Proposal or shall be on file with the Department.

- c. If the Price Proposal is made by a partnership, it shall be executed in the name of the partnership by one of the general partners.
 - d. If the Price Proposal is made by a limited liability company, it shall be signed by the manager, member, or authorized agent.
 - e. If the Price Proposal is made by a joint venture, it shall be executed by each of the joint venturers in the appropriate manner set out above. In addition, the execution by the joint venturers shall appear below their names.
9. The Price Proposal shall not contain any unauthorized additions, deletions, or conditional bids.
 10. The Proposer shall not add any provision reserving the right to accept or reject an award or to enter into a contract pursuant to an award.
 11. The Price Proposal shall be accompanied by a bid bond on the form furnished by the Department or by a bid deposit. The bid bond shall be completely and properly executed in accordance with the requirements of Article 102-10 and as modified herein. The bid deposit shall be a certified check or cashier check in accordance with Article 102-10 and as modified herein.
 12. The Price Proposal shall be placed in a sealed package and shall have been delivered to, and received by, the Department prior to the time specified in the Request for Proposals.

Page 1-17, Article 102-10, 3rd paragraph, delete the fifth sentence and replace with the following:

The condition of the bid bond or bid deposit is: the Principal shall not withdraw its bid within 75 days after the submittal of the same, and if the Department shall award a contract to the Principal, the Principal shall, within 14 calendar days after the written notice of award is received by him, give payment and performance bonds with good and sufficient surety as required for the faithful performance of the contract and for the protection of all persons supplying labor and materials in the prosecution of the work.

Page 1-18, Article 102-10, delete the end of the Article beginning with, and inclusive of, the 6th paragraph.

Pages 1-18, delete Article 102-12 and replace with the following:

102-12 WITHDRAWAL OR REVISION OF BIDS

A Design-Build Team will not be permitted to withdraw its Technical Proposal and / or Price Proposal after they have been submitted to the Department, unless allowed under Article 103-3 or unless otherwise approved by the Chief Engineer.

Page 1-19, delete Article 102-13 and replace with the following:

102-13 RECEIPT AND OPENING OF BIDS

Price Proposals from short-listed Proposers will be received on the date and time indicated in the Request for Proposals. The Technical Scores of the previously conducted evaluation of the Technical Proposals will also be addressed in accordance with the procedures outlined in the Instructions to Proposers.

Page 1-19, Article 102-14, replace the 1st paragraph with the following:

102-14 REJECTION OF BIDS

Any Price Proposal submitted which fails to comply with any of the requirements of Articles 102-8, 102-9 or 102-10, or with the requirements of the project scope and specifications shall be considered irregular and may be rejected. A Price Proposal that does not contain costs for all items in the Request for Proposals shall be considered irregular and may be rejected.

**SECTION 103
AWARD AND EXECUTION OF CONTRACT**

Page 1-21, delete Article 103-1 and replace with the following:

103-1 CONSIDERATION OF PRICE PROPOSALS

After the Price Proposals are received, they will be evaluated. The Price Proposal and Technical Score of the Technical Proposal will be made available in accordance with procedures outlined in the Instructions to Proposers. In the event of errors, omissions, or discrepancies in the Price Proposal, corrections to the Price Proposal will be made in accordance with the provisions of Article 103-2.

After receiving the Price Proposals and Technical Scores, the Department will calculate the Best Design-Build Proposal as described in the Instructions to Proposers.

The right is reserved to reject any or all Price Proposals, to waive technicalities, to request the Proposer with the Best Design-Build Proposal to submit an up-to-date financial and operating statement, to advertise for new Price Proposals, or to proceed to do the work otherwise, if in the judgment of the Department, the best interests of the State will be promoted thereby.

Page 1-21, Subarticle 103-2(A), add items (6) and (7) as follows:

(6) Discrepancy in the “Total Amount Bid” and the addition of the “Amount Bid” for each line Item

In the case of the Total Amount Bid does not equal the summation of each Amount Bid for the line items, the summation of each Amount Bid for the line items shall be deemed to be the correct Total Amount Bid for the entire project.

(7) Omitted Total Amount Bid –Amount Bid Completed

If the Total Amount Bid is not completed and the Amount Bid for all line items is completed the Total Amount Bid shall be the summation of the Amount Bid for all the line items.

Page 1-23, Subarticle 103-4(A), first paragraph, replace the 3rd and 4th sentences with the following:

Where award is to be made, the notice of award will be issued within 75 days after the submittal of Preferred Procurement Track and Preferred Proposer Announcement, except with the consent of the responsible Proposer with the Best Design-Build Proposal the decision to award the contract to such bidder may be delayed for as long a time as may be agreed upon by the Department and such Proposer. In the absence of such agreement, the Proposer may withdraw his Price Proposal at the expiration of the 75 days without penalty if no notice of award has been issued.

Page 1-29, Article 103-6, delete the 1st and 2nd paragraphs and replace with the following:

Checks that have been furnished as a bid deposit will be retained until after the contract bonds have been furnished by the successful Proposer, at which time the checks that were furnished as a bid deposit will be returned.

SECTION 104 SCOPE OF WORK

Page 1-30, delete Article 104-1 and replace with the following:

104-1 INTENT OF CONTRACT

The intent of the contract is to prescribe the work or improvements that the Design-Build Team undertakes to perform, in full compliance with the contract documents. In case the method of construction or character of any part of the work is not covered by the contract, this section shall apply. The Design-Build Team shall perform all work in accordance with the contract or as may be modified by written orders, and shall do such additional, extra, and incidental work as may be considered necessary to complete the work to the full intent of the contract. Unless otherwise provided elsewhere in the contract, the Design-Build Team shall furnish all implements,

machinery, equipment, tools, materials, supplies, transportation, and labor necessary for the design, prosecution and completion of the work.

Page 1-30, Article 104-3, replace “plans or details of construction” with “contract” in all instances within this Article.

Page 1-39, delete Article 104-10 and replace with the following:

104-10 MAINTENANCE OF THE PROJECT

The Design-Build Team shall maintain the project from the date of beginning construction on the project until the project is finally accepted. For sections of facilities impacted by utility construction / relocation performed by the Design-Build Team prior to beginning construction on the roadway project, maintenance of the impacted sections of facilities shall be performed by the Design-Build Team beginning concurrently with the impact. This maintenance shall be continuous and effective and shall be prosecuted with adequate equipment and forces to the end that all work covered by the contract is kept in satisfactory and acceptable conditions at all times.

All existing and constructed guardrail / guiderail within the project limits shall be included in this maintenance. The Design-Build Team shall perform weekly inspections of all guardrail and guiderail and shall report damages to the Engineer on the same day of the weekly inspection. Where damaged guardrail or guiderail is repaired or replaced as a result of maintaining the project in accordance with this Article, such repair or replacement shall be performed within seven consecutive calendar days of such inspection report.

The Design-Build Team shall maintain all existing drainage facilities, except where the work consists of resurfacing only, such that they are in the same condition upon acceptance of the project as they were when the project was made available to the Design-Build Team. In the event that the Design-Build Team's work is suspended for any reason, the Design-Build Team shall maintain the work covered by the contract, as provided herein. When a portion of the project is accepted as provided in Article 105-17, immediately after such acceptance, the Design-Build Team will not be required to maintain the accepted portion. Should latent defects be discovered or become evident in an accepted portion of the project, the Design-Build Team shall repair or replace the defective work at no cost to the Department.

Where an observation period(s) is required that extends beyond the final acceptance date, the Design-Build Team shall perform any work required by the observation period until satisfactory completion of the observation period.

With the exception of the maintenance of existing and constructed guardrail / guiderail, the Design-Build Team will not be directly compensated for any maintenance operations. The Design-Build Team will not be compensated for the performance of weekly inspections of guardrail / guiderail, and the damage reports required as described above. Authorized maintenance activities for existing and constructed guardrail / guiderail within the project limits will be paid for as extra work in accordance with Articles 104-7 and 104-8 of the NCDOT *Standard Specifications for Roads and Structures*.

SECTION 105 CONTROL OF WORK

Pages 1-44, delete Article 105-2 and replace with the following:

105-2 PLANS AND WORKING DRAWINGS

All plans shall be supplemented by such approved working drawings as are necessary to adequately control the work. Working drawings furnished by the Design-Build Team and approved by the Engineer shall consist of such detailed drawings as may be required to adequately control the work. They may include stress sheets, shop drawings, erection drawings, falsework drawings, cofferdam drawings, bending diagrams for reinforcing steel, catalog cuts, or any other supplementary drawings or similar data required of the Design-Build Team. When working drawings are approved by the Engineer, such approval shall not operate to relieve the Design-Build Team of any of his responsibility under the contract for the successful completion of the work.

Changes on shop drawings after approval and / or distribution shall be subject to the approval of the Engineer and he shall be furnished a record of such changes.

Page 1-45, Article 105-3, add the following after the 3rd paragraph:

The Design-Build Team shall bear all the costs of providing the burden of proof that the nonconforming work is reasonable and adequately addresses the design purpose. The Design-Build Team shall bear all risk for continuing with nonconforming work in question until it is accepted.

The Engineer may impose conditions for acceptance of the nonconforming work. The Design-Build Team shall bear all costs for fulfilling the conditions.

The decisions whether the product satisfies the design purpose, whether the nonconforming work is reasonably acceptable and the conditions for acceptance are at the sole discretion of the Engineer.

Pages 1-45, delete Article 105-4 and replace with the following:

105-4 COORDINATION OF PLANS, SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS

The Request for Proposals, all construction Plans, the Standard Specifications, Supplemental Specifications and Special Provisions and all supplementary documents are essential parts of the contract and a requirement occurring in one is as binding as though occurring in all. They are complementary and describe and provide the complete contract.

In case of discrepancy or conflict, the order in which they govern shall be as follows:

- (A) Request for Proposals, in which Project Special Provisions govern Standard Special Provisions
- (B) Technical Proposal from the Design-Build Team
- (C) Accepted Plans and Details from the Design-Build Team, or sealed plans provided by the Department, as applicable
- (D) Standard Drawings
- (E) Standard Specifications

Where dimensions on the plans are given or can be computed from other given dimensions they shall govern over scaled dimensions.

The Design-Build Team shall take no advantage of any error or omission in the plans, estimated quantities, or specifications. In the event the Design-Build Team discovers an error or omission, he shall immediately notify the Engineer.

Page 1-48, delete Article 105-9 and replace with the following:

105-9 CONSTRUCTION STAKES, LINES, AND GRADES

The Design-Build Team shall be responsible for all surveying, construction staking and layout required in the performance of the work. The Design-Build Team shall be responsible for the accuracy of lines, slopes, grades and other engineering work which the Design-Build Team provides under this contract.

SECTION 106 CONTROL OF MATERIAL

Page 1-53, Article 106-2, add the following after the second paragraph:

Prior to beginning construction, the Design-Build Team shall provide a Table of Quantities as described in Article 101-3 of these specifications.

The Table of Quantities Work Items shall correspond to Pay Items as defined in the Standard Specifications. These Work Items have associated Materials and Conversion Factors. For non-standard Work Items, a Generic Work Item with the correct Unit of Measure and in an appropriate category will be used. For example, "GENERIC TRAFFIC CONTROL ITEM – EA" or "GENERIC RETAINING WALL ITEM – LF". For these Generic Work Items, Materials must be defined and appropriate conversion factors submitted.

An initial Table of Quantities shall be submitted no later than 30 calendar days after the date of award. The Table of Quantities shall be updated and resubmitted within 14 days of when a set of Plans is sealed as Release for Construction (RFC) Plans, and whenever there are substantial changes to the Quantities on previously incorporated RFC Plans.

Page 1-55, Article 106-6, add the following after the last paragraph:

For items normally pretested by the Department, the Design-Build Team shall provide a minimum of 30 days notice prior to the beginning of production of the items for this project along with final approved shop drawings.

**SECTION 107
LEGAL RELATIONS AND RESPONSIBILITY
TO PUBLIC**

Page 1-65, delete Article 107-18 and replace with the following:

107-18 FURNISHING RIGHT OF WAY

The responsibility for coordinating the securing of all necessary rights of way is as outlined in the Request for Proposals.

**SECTION 108
PROSECUTION AND PROGRESS**

Page 1-68, Article 108-2, replace the 2nd paragraph with the following:

The Design-Build Team shall submit a Progress Schedule for review within thirty (30) calendar days of receiving Notice of Award. The Department will review the Progress Schedule within twenty-one (21) calendar days of receipt. The Design-Build Team shall make any necessary corrections and adjustments to the Progress Schedule as necessitated by the Department's review within seven (7) calendar days. The Department will review the revised Progress Schedule within seven (7) calendar days of receipt.

Page 1-68, Subarticle 108-2(A)(1), add the following:

(k) Utility relocation and construction

Page 1-69, Subarticle 108-2(A)(2), add the following:

(h) Critical design submittal dates

(i) Critical permitting dates

(j) Completion of right of way acquisition

(k) Completion of utility relocation and construction

Page 1-69, Article 108-2, add the following:

(D) The Design-Build Team shall provide a written narrative each month detailing the work and percentage of work completed, anticipated sequence of upcoming work (two-month forecast), controlling operation(s), intermediate completion dates, and milestones. If any milestones are exceeded or will not be achieved, the Design-Build Team shall provide in the written narrative details of the delay; controlling operation affected, impacts to other operations, revisions to future intermediate completion dates and milestones, and remedial action necessary to get the project back to the original completion date.

Page 1-69, delete Article 108-3 and replace with the following:

108-3 PRECONSTRUCTION AND PRE-DESIGN CONFERENCES

The selected Design-Build Team shall meet with the Engineer for a pre-design conference concerning the design phase of the work. This conference shall be held prior to the commencement of work, as it is determined according to Article 108-1, and will be scheduled by the Engineer. At the predesign conference, the Design-Build Team shall furnish authorized signature forms and a list of all proposed subcontractors associated with the project design.

A preconstruction conference shall be held at least ten working days before construction activity begins. This second conference, concerning the construction phase, shall also be scheduled by the Engineer. The Design-Build Team shall give the Engineer a minimum of 45 days written notice before the Design-Build Team plans to begin construction activities. This will allow the Engineer time for any environmental agency representatives involved in the permitting process, as well as any other pertinent entities, to be scheduled to attend the preconstruction conference. If the Design-Build Team is responsible for utilities in accordance with Article 105-8 and the Request for Proposals, the Design-Build Team shall be responsible for coordinating with the Engineer in scheduling the utility owners attendance and for notifying the utility owners. The Design-Build Team shall also be responsible for coordinating with the Engineer in scheduling the attendance of subcontractors and others deemed appropriate, and for notifying them.

At the preconstruction conference, a list of any proposed subcontractors and major material suppliers associated with the construction of the project will be submitted.

If the contract has a DBE or WBE / MBE requirement, the Design-Build Team shall submit copies of completed and signed DBE or WBE / MBE subcontracts, purchase orders, or invoices to the Department.

In accordance with Article 1101-1 and the Request for Proposals, the Design-Build Team shall submit Transportation Management Plans, including but not limited to Temporary Traffic Control Plans. The Design-Build Team shall designate an employee who is competent and experienced in transportation management to implement and monitor the Transportation

Management Plans. The qualifications of the designated employee must be satisfactory to the Engineer.

The Design-Build Team shall submit a Safety Plan and designate an employee as the Safety Supervisor.

Both plans shall be submitted at the preconstruction conference and must be satisfactory to the Engineer. Should the design plan include activities that would place personnel on the work site, Temporary Traffic Control Plans and a Safety Plan for those activities shall be submitted at the predesign conference.

During the preconstruction conference, the Engineer will designate a Department employee or employees who will be responsible to see that the Transportation Management Plans, including but not limited to the Temporary Traffic Control Plans, and any alterations thereto are implemented and monitored to the end that traffic is carried through the work in an effective manner. If approved by the Engineer, the Design-Build Team may designate one employee to be responsible for both the Temporary Traffic Control Plans and the Safety Plan. The Design-Build Team shall not designate its superintendent as the responsible person for either the Temporary Traffic Control Plans or the Safety Plan, unless approved by the Engineer.

If the project requires the Design-Build Team or State personnel work from falsework, within shoring, or in any other hazardous area, the Design-Build Team shall submit, as part of the Design-Build Team's Safety Plan, specific measures that will be used to ensure worker safety.

The Design-Build Team shall also submit a program for erosion control and pollution prevention on all projects involving clearing and grubbing, earthwork, structural work, or other construction, when such work is likely to create erosion or pollution problems.

If the Design-Build Team fails to provide the required submissions, the Engineer may order the preconstruction conference suspended until such time as they are furnished. Work shall not begin until the preconstruction conference has been concluded and the Safety Plan has been approved, unless authorized by the Engineer. The Design-Build Team shall not be entitled to additional compensation or an extension of contract time resulting from any delays due to such a suspension.

The Design-Build Team shall designate a qualified employee as Quality Control Manager. The Quality Control Manager shall be responsible for implementing and monitoring the quality control requirements of the project.

Page 1-69, Article 108-4, add the following sentence to the end of this article:

The Design-Build Team shall record the proceedings of these conferences and distribute the final minutes of the conferences to all attendees.

Page 1-70, Article 108-6, replace “40%” with “30%” in the 1st paragraph.

Page 1-71, Article 108-6, replace “35%” with “25%” in the 2nd paragraph.

Pages 1-72, delete Article 108-8 and replace with the following:

108-8 FAILURE TO MAINTAIN SATISFACTORY PROGRESS

The Engineer will check the Design-Build Team’s progress at the time each partial pay request is received. The Design-Build Team’s progress may be considered as unsatisfactory if, according to the Progress schedule, the projected finish date for all work exceeds the scheduled finish date by more than 10%.

When the Design-Build Team's progress is found to be unsatisfactory as described above, the Engineer may make written demand of the Design-Build Team to state in writing the reason for the unsatisfactory progress and produce such supporting data as the Engineer may require or the Design-Build Team may desire to submit. The Engineer will consider the justifications submitted by the Design-Build Team and extensions of the completion date that have or may be allowed in accordance with Subarticle 108-10(B) and as modified herein.

When the Design-Build Team cannot satisfactorily justify the unsatisfactory progress the Engineer may invoke one or more of the following sanctions:

1. Withhold anticipated liquidated damages from amounts currently due or which become due.
2. Remove the Design-Build Team and individual managing firms of the Design-Build Team and / or prequalified design firms from the Department’s Prequalified Bidders List.

When any of the above sanctions have been invoked, they shall remain in effect until rescinded by the Engineer.

Page 1-75, Subarticle 108-10(B), add the following as the first paragraph:

Only delays to activities which affect the completion date or intermediate contract date will be considered for an extension of contract time. No extensions will be granted until a delay occurs which impacts the project’s critical path and extends the work beyond the contract completion date or intermediate completion date. Any extension to the completion date or intermediate contract date will be based on the number of calendar days the completion date or intermediate completion date is impacted as determined by the Engineer’s analysis.

Pages 1-75, delete Subarticle 108-10(B)(1) in its entirety.

Page 1-78, delete Subarticle 108-13(D)(2) in its entirety.

SECTION 109 MEASUREMENT AND PAYMENT

Page 1-80, Article 109-2, delete the last sentence of the 1st paragraph and replace with the following:

Payment to the Design-Build Team will be made only for the work completed, certified and accepted in accordance with the terms of the contract.

Pages 1-85, delete Subarticle 109-4(A) and replace with the following:

109-4 PARTIAL PAYMENTS

(A) General

Partial payments will be based upon progress estimates prepared by the Engineer at least once each month on the date established by the Engineer. Partial payments may be made twice each month if in the judgment of the Engineer the amount of work performed is sufficient to warrant such payment. No partial payment will be made when the total value of work performed since the last partial payment amounts to less than \$10,000.00. Partial payments will be approximate only and will be subject to correction in the final estimate and payment.

When the contract includes one lump sum price for the entire work required by the contract, partial payments for the lump sum design-build price shall be based on a certified Schedule of Values submitted by the successful Design-Build Team and approved by the Engineer. The certification shall indicate the Design-Build Team has reviewed the information submitted and the information accurately represents the work performed for which payment is requested. The certified Schedule of Values shall be submitted no later than 30 calendar days after the date of award. Each item on the certified Schedule of Values shall be assigned a cost and quantity and shall be identified as an activity on the progress schedule. A revised certified Schedule of Values shall be submitted with each update of the Progress schedule as described in Article 108-2, and as modified herein, or when requested by the Engineer. A certified copy of the Table of Quantities shall also be submitted with each payment request. The certification of the Table of Quantities shall indicate the Design-Build Team has reviewed the information submitted and the information accurately represents the materials for the work performed for which payment is requested.

When the contract includes lump sum items for portions of the work required by the contract, and the applicable section of the Specifications or Request for Proposals specify the means by which the total amount bid be included in the partial pay estimates, the Engineer will determine amounts due on the partial pay estimate in accordance with the applicable portion of the Specifications or Request for Proposals.

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

Page 1-86, Subarticle 109-5(D), delete the 4th and 5th paragraphs and replace with the following:

Partial payments will not be made on seed or any living or perishable plant materials.

Partial payment requests shall not be submitted by the Design-Build Team until those items requested have corresponding signed and sealed RFC plans accepted by the Department.

Pages 1-88, Article 109-10, add the following as bullets (E) and (F) under the 1st paragraph.

- (E) As-Constructed Drawings, As-Built Plans and other documents required elsewhere in this RFP.
- (F) Documents or guarantees to support any warranty provided by the Design Build Team.

County : Wake, Craven, Carteret, Jones, Johnston, Lenoir, Wayne, Northampton, Nash, Halifax, Wilson, Robeson, Cumberland, Harnett, Mecklenbu

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
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ROADWAY ITEMS

0001	0000996000-N	SP	DESIGN AND CONSTRUCTION	Lump Sum	L.S.	
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1012/Jan15/Q1.0/D996000/E1

Total Amount Of Bid For Entire Project :

LISTING OF DBE SUBCONTRACTORS						
Firm Name and Address			Item No.	Item Description	* Agreed upon Unit Price	** Dollar Volume of Item
Name						
Address						
Name						
Address						
Name						
Address						
Name						
Address						
Name						
Address						
Name						
Address						

**This form must be completed in order for the Bid to be considered responsive.
 Bidders with no DBE participation must so indicate this on the form by entering the word or number *zero*.**

LISTING OF DBE SUBCONTRACTORS						
Firm Name and Address			Item No.	Item Description	* Agreed upon Unit Price	** Dollar Volume of Item
Name						
Address						
Name						
Address						
Name						
Address						
Name						
Address						
Name						
Address						
Name						
Address						

**This form must be completed in order for the Bid to be considered responsive.
 Bidders with no DBE participation must so indicate this on the form by entering the word or number *zero*.**

LISTING OF DBE SUBCONTRACTORS						
Firm Name and Address			Item No.	Item Description	* Agreed upon Unit Price	** Dollar Volume of Item
Name						
Address						
Name						
Address						
Name						
Address						
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Address						
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Address						
Name						
Address						

**This form must be completed in order for the Bid to be considered responsive.
 Bidders with no DBE participation must so indicate this on the form by entering the word or number *zero*.**

LISTING OF DBE SUBCONTRACTORS				
			Sheet _____	of _____
Firm Name and Address	Item No.	Item Description	* Agreed upon Unit Price	** Dollar Volume of Item
Name Address				
Name Address				
Name Address				
Name Address				

COST OF CONSTRUCTION WORK ONLY \$ _____

*The Dollar Volume shown in this column shall be the Actual Price Agreed Upon by the Prime Contractor and the DBE subcontractor, and these prices will be used to determine the percentage of the DBE participation in the contract.

** Dollar Volume of DBE Subcontractor \$ _____

Percentage of Total Construction Cost _____ %

(Including Right of Way Acquisition Services)

** - Must have entry even if figure to be entered is zero.

** - *If firm is a Material Supplier Only, show Dollar Volume as 60% of Agreed Upon Amount from Letter of Intent.
If firm is a Manufacturer, show Dollar Volume as 100% of Agreed Upon Amount from Letter of Intent.*

**This form must be completed in order for the Bid to be considered responsive.
Bidders with no DBE participation must so indicate this on the form by entering the word or number zero.**

**EXECUTION OF BID
NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION**

CORPORATION

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the Bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the Bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF CONTRACTOR

Full name of Corporation

Address as prequalified

Attest _____

Secretary / Assistant Secretary
Select appropriate title

By _____

President / Vice President / Assistant Vice President
Select appropriate title

Print or type Signer's name

Print or type Signer's name

CORPORATE SEAL

**EXECUTION OF BID
NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION
PARTNERSHIP**

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF CONTRACTOR

Full Name of Partnership

Address as Prequalified

Signature of Witness

By

Signature of Partner

Print or type Signer's name

Print or type Signer's name

EXECUTION OF BID
NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION
LIMITED LIABILITY COMPANY

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF CONTRACTOR

Full Name of Firm

Address as Prequalified

Signature of Witness

Signature of Member / Manager / Authorized Agent
Select appropriate title

Print or type Signer's name

Print or type Signer's Name

**EXECUTION OF BID
NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION**

JOINT VENTURE (2) or (3)

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the bidder has not been convicted of violating N.C.G.S. § 133-24 within the last three years, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF CONTRACTORS

Instructions: **2 Joint Venturers** Fill in lines (1), (2) and (3) and execute. **3 Joint Venturers** Fill in lines (1), (2), (3) and (4) and execute. On Line (1), fill in the name of the Joint Venture Company. On Line (2), fill in the name of one of the joint venturers and execute below in the appropriate manner. On Line (3), print or type the name of the other joint venturer and execute below in the appropriate manner. On Line (4), fill in the name of the third joint venturer, if applicable and execute below in the appropriate manner.

(1) _____
Name of Joint Venture

(2) _____
Name of Contractor

Address as prequalified

_____ Signature of Witness or Attest	By	_____ Signature of Contractor
_____ Print or type Signer's name		_____ Print or type Signer's name

If Corporation, affix Corporate Seal and

(3) _____
Name of Contractor

Address as prequalified

_____ Signature of Witness or Attest	By	_____ Signature of Contractor
_____ Print or type Signer's name		_____ Print or type Signer's name

If Corporation, affix Corporate Seal and

(4) _____
Name of Contractor (*for 3 Joint Venture only*)

Address as prequalified

_____ Signature of Witness or Attest	By	_____ Signature of Contractor
_____ Print or type Signer's name		_____ Print or type Signer's name

If Corporation, affix Corporate Seal

EXECUTION OF BID
NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION
INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF CONTRACTOR

Name of Contractor

_____ Individual name

Trading and doing business as

_____ Full name of Firm

_____ Address as Prequalified

_____ Signature of Witness

_____ Signature of Contractor, Individually

_____ Print or type Signer's name

_____ Print or type Signer's name

**EXECUTION OF BID
NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION**

INDIVIDUAL DOING BUSINESS IN HIS OWN NAME

The person executing the bid, on behalf of the Bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the Bidder intends to do the work with its own bonafide employees or subcontractors and is not bidding for the benefit of another contractor.

In addition, execution of this bid in the proper manner also constitutes the Bidder's certification of status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF CONTRACTOR

Name of Contractor _____

Print or type Individual name

Address as Prequalified

Signature of Contractor, Individually

Print or type Signer's Name

Signature of Witness

Print or type Signer's name

DEBARMENT CERTIFICATION

Conditions for certification:

1. The prequalified bidder shall provide immediate written notice to the Department if at any time the bidder learns that his certification was erroneous when he submitted his debarment certification or explanation that is file with the Department, or has become erroneous because of changed circumstances.
2. The terms *covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded*, as used in this provision, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. A copy of the Federal Rules requiring this certification and detailing the definitions and coverages may be obtained from the Contract Officer of the Department.
3. The prequalified bidder agrees by submitting this form, that he will not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in NCDOT contracts, unless authorized by the Department.
4. For Federal Aid projects, the prequalified bidder further agrees that by submitting this form he will include the Federal-Aid Provision titled *Required Contract Provisions Federal-Aid Construction Contract (Form FHWA PR 1273)* provided by the Department, without subsequent modification, in all lower tier covered transactions.
5. The prequalified bidder may rely upon a certification of a participant in a lower tier covered transaction that he is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless he knows that the certification is erroneous. The bidder may decide the method and frequency by which he will determine the eligibility of his subcontractors.
6. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this provision. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
7. Except as authorized in paragraph 6 herein, the Department may terminate any contract if the bidder knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available by the Federal Government.

DEBARMENT CERTIFICATION

The prequalified bidder certifies to the best of his knowledge and belief, that he and his principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records; making false statements; or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph b. of this certification; and
- d. Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- e. Will submit a revised Debarment Certification immediately if his status changes and will show in his bid proposal an explanation for the change in status.

If the prequalified bidder cannot certify that he is not debarred, he shall provide an explanation with this submittal. An explanation will not necessarily result in denial of participation in a contract.

Failure to submit a non-collusion affidavit and debarment certification will result in the prequalified bidder's bid being considered non-responsive.

Check here if an explanation is attached to this certification.

Contract No.: **C204556**

County: **Multiple Counties**

ACCEPTED BY THE
DEPARTMENT OF TRANSPORTATION

Contract Officer

Date

Execution of Contract and Bonds
Approved as to Form:

Attorney General

Appendix Part B – OMC: Operations, Maintenance and Commercialization Agreement Terms



NORTH CAROLINA
Department of Transportation

**North Carolina Department of Transportation
I-95, US-70 & US 74 Broadband Infrastructure Project
(TIP R-5777D, I-5986C, HO-0002A, B & C)**

APPENDIX PART B – OMC

Operations, Maintenance and Commercialization Agreement Terms

This document presents a detailed overview of the anticipated terms of the Operations, Maintenance and Commercialization Agreement (the "OMC Agreement") for the Project (the "OMC Terms"). The OMC Agreement will set forth the Contractor's rights and obligations relating to the operations, maintenance, and commercialization of the Project.

PART A — PRELIMINARY		
1.	Definition	Unless the context otherwise requires, capitalized terms and acronyms used in the OMC Terms have the meanings given in <u>Exhibit 1 (Definitions)</u> .
2.	Term	<p>(a) The OMC Agreement (and all of the rights and obligations under the OMC Agreement) will come into effect on the Closing Date and continue until the earlier of: (i) the Expiry Date, which may be extended by the Department in accordance with <u>clause (b)</u> below; or (ii) the Early Termination Date (the “<u>Term</u>”).</p> <p>(b) At any time after the Transfer Date for the final Network Segment, the OMC Contractor will be entitled to request an extension of the Expiry Date. Any such request must be made in writing, and set forth a business case describing the OMC Contractor’s plan for providing Commercialization Services during the period of any such extension, including: (i) the additional capital investment, if any, to be made by the OMC Contractor; (ii) a description of the Commercialization Services to be provided by the OMC Contractor; (iii) the amount of operations and maintenance costs the OMC Contractor expects to incur; (iv) the amount of gross revenues the OMC Contractor expects to generate; and (v) the benefits to the Department of granting the requested extension, including the increase in revenue sharing payments to the Department. Following the OMC Contractor’s submission of its request to extend the Expiry Date, the OMC Contractor will confer with the Department and provide such additional information as the Department may reasonably request with respect to such proposed extension. Within ninety (90) days of the Department’s receipt of the OMC Contractor’s request (including the business case that addresses the requirements set forth in the preceding sentence), the Department will determine, in its sole discretion, whether to grant the requested extension. If the Department grants the requested extension, the Department and the OMC Contractor will work in good faith to promptly negotiate and execute an amendment to the OMC Contract setting forth the terms of the extension, including the duration of the extension and the relevant adjustments to the revenue sharing payments to be made to the Department. In no event shall the duration of any such extension(s) cause the Term to extend beyond the maximum period set forth in N.C. Gen. Stat. § 136-18(46).</p>
3.	Conditions Precedent to Closing Date	<p>The OMC Agreement will set forth conditions precedent to the Closing Date usual and customary for the OMC Contractor’s plan of finance (i.e., corporate finance or non-recourse project finance). Such conditions precedent will include, if required for a non-recourse project finance structure, the Department’s execution and delivery of a Lenders Direct Agreement, in the form set forth in <u>Exhibit 2 (Form of Lenders Direct Agreement)</u>.</p> <p>The Department is not prescribing the structure of the OMC Contractor’s plan of finance (i.e., corporate finance or non-recourse project finance).</p>
4.	Representations and Warranties	The OMC Agreement will set forth usual and customary representations and warranties of the OMC Contractor and the Department.
5.	Financing	The repayment of any debt or equity arranged by the OMC Contractor to finance the Project will be the sole responsibility of the OMC Contractor.
6.	Collaborative Nature of the Project	Each Party agrees to cooperate, at its own expense, with the other Party in the fulfillment of the purposes and intent of the OMC Agreement. Neither Party shall be under any obligation to perform any of the other Party’s obligations under the OMC Agreement.

7.	Designation of Representatives	The Department and the OMC Contractor shall each designate an individual or individuals who will be authorized to make decisions and bind the Parties on matters relating to the OMC Agreement. A Party may change its designation from time to time by a subsequent notice in writing delivered to the other Party.
PART B — GRANT OF RIGHTS, PROJECT SITE, & OTHER GENERAL REQUIREMENTS		
8.	Grant of Rights	<p>(a) Subject to the terms and conditions of the OMC Agreement, the Department hereby grants to the OMC Contractor the exclusive right, and the OMC Contractor accepts such right and acknowledges its obligation to operate and maintain the Broadband Infrastructure, in each case, in accordance with the terms of the OMC Agreement (including, without limitation, the Technical Requirements).</p> <p>(b) Subject to the OMC Contractor’s compliance with the OMC Agreement (including, without limitation, the requirements of <u>Section 38 (Payments to Department)</u>), from the first Transfer Date until the end of the Term, the OMC Contractor shall have:</p> <ul style="list-style-type: none"> (i) to the fullest extent permitted by Applicable Law, and subject to the terms of the OMC Agreement, an exclusive right to use the OMC Contractor Infrastructure on such Network Segment solely for the purpose of conducting the Commercial Activities; and (ii) a non-exclusive right to use any Department Junction Box in such Network Segment necessary for the operation of the OMC Contractor Fibers pursuant to <u>Section 8(b)(i) (Grant of Rights)</u>, subject to the right of the Department or any Governmental Entity to conduct the Operating Activities hereunder. <p>(c) It is the express intent and agreement of the Parties that the OMC Agreement shall in no way be deemed to constitute a lease to the OMC Contractor (whether an operating lease or a financing lease) or, except as expressly provided herein, a grant (regardless of the characterization of such grant, including by way of easement, purchase option, conveyance, lien or mortgage) in each case, of any right, title, interest or estate in the Broadband Infrastructure, the Project Site, or of any assets incorporated into, appurtenant to, or in any way connected with the Project. It is the express agreement and intent of the Parties that the OMC Contractor shall not be treated as or deemed to be the legal or equitable owner of the Broadband Infrastructure or the Project Site for any purpose under the OMC Agreement. The OMC Contractor’s rights hereunder are derived solely from its status as a OMC Contractor and independent contractor as described in the OMC Agreement, and not as a tenant, lessee, easement holder, optionee, lienor, mortgagee, purchaser or owner of any other interest in real property. The payments to be received by the OMC Contractor under the OMC Agreement are not payments in the nature of rent or fees with respect to the real property or purchase price of real property.</p> <p>(d) Any interconnection between the OMC Contractor Fibers and any facility of the Department will be made by the OMC Contractor only in accordance with the provisions of the Technical Requirements. Nothing herein shall require the Department to provide any equipment used to transmit signals over or “light” the OMC Contractor Fibers. Except as set forth in the Technical Requirements or as may be separately agreed to in a facility services agreement between the Department and the OMC Contractor, the OMC Contractor is solely responsible for providing, installing and maintaining all electronics, including optical transmitters, receivers and repeaters, used to “light” the OMC Contractor Fibers.</p>

		<p>(e) Neither any OMC Contractor Entity-Related Entity nor any Commercial End-User (or any of its customers) shall assess any rate, rent, fee, charge, fine or other amount in respect of vehicular usage of the Department’s highway network. In addition, neither any OMC Contractor-Related Entity nor any Commercial End-User shall develop, design, construct, finance, operate, maintain, or implement the Project or use the OMC Contractor Infrastructure in a manner that would materially adversely affect the operations of the Department’s highway network or the Department’s use of the Department Infrastructure.</p> <p>(f) The OMC Contractor shall not engage in any business or activity other than business or activities conducted for the purposes of the Project or otherwise expressly permitted under the OMC Agreement.</p> <p>(g) Without limiting any other right of the Department hereunder:</p> <p>(i) the Department may use the Department Infrastructure as part of the Department’s operation of the Department’s highway network (including, without limitation, the operation of electronic toll collection systems, intelligent transportation systems, intelligent vehicle highway systems, traffic cameras, dynamic message signs, autonomous vehicle systems, and connected vehicle systems);</p> <p>(ii) the Department may provide Governmental Entities with access to the Department Infrastructure for purposes of carrying out law enforcement activities, conducting emergency response, and promoting public safety, in each case on the Department’s highway network or in connection with the operation of the Department’s highway network; and</p> <p>(iii) any Governmental Entity may use the Department Infrastructure for the purposes described in clause (ii) of this <u>Section 8(g) (Grant of Rights)</u> as authorized and approved by the Department,</p> <p>(such activities, collectively, the “<u>Operating Activities</u>”).</p>
9.	Certain Covenants and Confirmations	<p>(a) To the fullest extent permitted by Applicable Law, the Department agrees that it shall not use, and it shall not permit any other Person to use, any part of the Department Infrastructure in any manner that directly competes with the OMC Contractor’s performance of the Commercial Activities; <i>provided that</i>, for the avoidance of doubt, the Parties agree that none of the Operating Activities violate (or shall be deemed to violate) this <u>Section 9(a) (Certain Covenants and Confirmations)</u>.</p> <p>(b) Nothing herein shall constitute a grant to the OMC Contractor of an exclusive right of physical access to the Department Right-of-Way, including the Project Site.</p> <p>(c) Subject to <u>Section 9(a) (Certain Covenants and Confirmations)</u>, the Department may grant to any Telecommunications Carrier a right of physical access to the Department Right-of-Way (other than to the OMC Contractor Infrastructure) in order for such Telecommunications Carrier to construct facilities that provide, and in order to provide, wholesale or retail Telecommunications Services.</p>

		<p>(d) The OMC Contractor agrees that:</p> <ul style="list-style-type: none"> (i) (x) to the extent it provides wholesale access to the OMC Contractor Fibers to any Telecommunications Carrier, the OMC Contractor shall do so at rates set by the OMC Contractor on a non-discriminatory basis and shall otherwise provide access to the OMC Contractor Infrastructure and charge rates (if any) therefor in accordance with Applicable Law and (y) without prejudice to the rights of the Department hereunder, the Department shall have the right to enforce this clause (i) for the benefit of any Telecommunications Carrier; (ii) wherever the OMC Contractor conducts Commercial Activities over the OMC Contractor Infrastructure, the OMC Contractor Infrastructure shall house capacity of at least [●]¹ strands of fiber optic cable; and (iii) the OMC Contractor will offer to the Department a right of first refusal with respect to capacity made available by the OMC Contractor for Commercialization Services.² <p>(e) At all times during the Term, the OMC Contractor shall maintain a list of each Commercial Agreement that is in effect (the “<u>Commercial Agreements Register</u>”) and shall provide to the Department a copy of the then-current version of such list within three (3) Business Days of the OMC Contractor’s receipt of a request from the Department for a copy of such list. Such list shall include:</p> <ul style="list-style-type: none"> (i) the effective date and the termination date of such Commercial Agreement; (ii) the amount of pre-payment, if any, made by the Commercial End-User to the OMC Contractor; and (iii) a description of the service being provided by the OMC Contractor to the Commercial-End User. <p>(f) If the Department receives an Initial Facilities Installation Proposal from any Person other than the OMC Contractor, then, subject to Applicable Law, the Department will promptly notify the OMC Contractor and refer such Person to the OMC Contractor so that the OMC Contractor and such Person may negotiate terms of service over the OMC Contractor Infrastructure; <i>provided</i>, that after the fiftieth (50th) day following the date of such notice from the Department, the Department may negotiate, accept or reject such Initial Facilities Proposal in its sole discretion; <i>provided further</i>, that, to the fullest extent permitted by Applicable Law, the OMC Contractor will not be required by the Department to grant access to the OMC Contractor Infrastructure under any such Initial Facilities Installation Proposal.</p> <p>(g) The Department shall not assist the OMC Contractor in the acquisition of any additional property rights outside of the Department Right-of-Way necessary to conduct Commercial Activities. Notwithstanding any other provision of the OMC Agreement, any such additional property rights acquired by the OMC Contractor shall be retained by the OMC Contractor.</p> <p>(h) The Department may, in its sole discretion, permit the OMC Contractor to use Department-owned land (other than highway right-of-way) for the installation of OMC Contractor Fibers and other commercialization assets.</p>
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10.	Revenues from Commercial Activities	The OMC Contractor acknowledges and agrees that, except to the extent expressly provided otherwise in the OMC Agreement, (i) the OMC Contractor bears all risk relating to the amount of revenues that may be generated from the Commercial Activities and (ii) Department has no financial responsibility whatsoever to the OMC Contractor or otherwise if the amount of such revenues is insufficient to pay any costs or expenses of the OMC Contractor, including, but not limited to, the repayment of any debt or equity arranged by the OMC Contractor to finance the Project.
11.	Cellular Connected Vehicle Sites	<p>(a) The Department anticipates installing a limited number of cellular connected vehicle sites at the I-95/I-40 interchange (such sites, the “<u>Department Connected Vehicle Sites</u>”). Subject to the terms of <u>Section 8 (Grant of Rights)</u>, the OMC Contractor will have the right to commercialize the network capacity of the Department Connected Vehicle Sites not otherwise reserved for the Department’s use.</p> <p>(b) The OMC Contractor will have the right to propose construction of additional cellular connected vehicle sites, at its sole cost and expense, subject to the limitations on the construction of such facilities set forth in N.C. Gen. Stat. § 136-18.3A (such sites, the “<u>OMC Contractor Connected Vehicle Sites</u>”). The Department shall not assist the OMC Contractor in the acquisition of any additional property rights outside of the Department Right-of-Way necessary to accommodate any OMC Contractor Connected Vehicle Sites.</p> <p>(c) The OMC Contractor will provide the Department with cellular data from the Department Connected Vehicle Sites and the OMC Contractor Connected Vehicle Sites (if any) for transportation purposes, including traffic management and incident response.</p>
12.	Access to the Project Site and the Broadband Infrastructure	<p>(a) Subject to <u>clause (b)</u> below, the Department shall, at its own cost, obtain and provide the OMC Contractor-Entities with:</p> <ul style="list-style-type: none"> (i) access to the Project Site from the Closing Date until the end of the Term; and (ii) access to the Broadband Infrastructure from the Closing Date until the end of the Term, <p>for the sole purpose of performing their obligations and exercising their rights under the OMC Agreement.</p> <p>(b) The OMC Contractor acknowledges that installation of any New Commercial Infrastructure is subject to Department regulations, polices, and procedures governing the encroachment and installation of utilities on the Department’s right-of-way, as well as the applicable provisions of federal law, including the regulations of the Federal Highway Administration. The OMC Contractor thus agrees that, prior to such installation, it will execute a modified encroachment agreement with the Department, the terms of which are subject to the Department’s sole discretion to ensure that installation of any New Commercial Infrastructure does not interfere with the public highway purposes of the Department’s right-of-</p>

¹ **Note to Proposers:** Each Proposer to propose the minimum number of strands it anticipates needing for resale capacity.

² **Note to Proposers:** Provision included pursuant to the requirements set forth in N.C. Gen. Stat. § 136-18(46). The Department anticipates the scope of the Project as presented in the RFP will provide the Department with sufficient network capacity for the duration of the Term.

		way and is carried out in accordance with all Applicable Law, policies, and procedures. ³
13.	Compliance with Governmental Approvals	The OMC Contractor shall at all times perform its obligations under the OMC Agreement in compliance with all Governmental Approvals.
14.	Responsibility for Governmental Approvals	<p>(a) OMC Contractor Responsibility</p> <p>(i) The OMC Contractor is solely responsible for obtaining all Government Approvals (including any application, revision, modification, amendment, supplement, renewal or extension related thereto) in connection with its performance under the OMC Agreement.</p> <p>(b) Department Responsibility</p> <p>(i) The Department has obtained all Department-Provided Approvals as of the first Transfer Date and will, subject to <u>clause (a)</u>, maintain, renew, replace, extend the validity of, or arrange necessary amendments to, the Department-Provided Approvals as necessary during the Term.</p>
15.	Cooperation with Respect to Governmental Approvals	<p>(a) If requested by the OMC Contractor, the Department shall cooperate with the OMC Contractor in relation to any application by the OMC Contractor for a Governmental Approval and shall, at the reasonable request of the OMC Contractor, and where necessary to obtain, renew, replace, extend the validity of, or arrange necessary amendments to, any Governmental Approval:</p> <p>(i) execute such documents as can only be executed by the Department;</p> <p>(ii) make such applications as required by Applicable Law, either in its own name or jointly with the OMC Contractor, as can only be made by the Department jointly by the OMC Contractor and the Department, as applicable; and</p> <p>(iii) attend meetings with appropriately qualified staff and cooperate with such Governmental Entity as reasonably requested by the OMC Contractor, in each case, within a reasonable period of time of being requested to do so by the OMC Contractor.</p> <p>(b) If the Department provides any assistance to the OMC Contractor pursuant to <u>clause (a)</u>, the OMC Contractor shall reimburse the Department for its reasonable third party costs associated with the provision of such assistance within thirty (30) days of receiving an invoice from the Department with respect to such costs.</p>

³ **Note to Proposers:** As per the NCDOT Utility Policy Manual, the accommodation of utilities on highway rights-of-way allow utility owners varied degrees of authority to install and maintain their lines and facilities, in accordance with sound engineering principles and related requirements and authorization by NCDOT. Policies for encroachers have been created and utilized for typically approved encroaching utilities and installation methods. According to the NCDOT Utilities Accommodation Manual (1. General P. Exemptions), exceptions to standard practices are allowed with additional approval. There is no form of encroachment agreement for longitudinal installations along fully-controlled access facilities. For the purposes of the Project, the OMC Contractor will be granted special permission for the scoped installation from the Chief Engineer for exemptions from NCDOT's standard allowable encroachment practices. Once the OMC Contract has been awarded, Form 16.2 shall be completed and submitted, along with a letter requesting the exemption, to the Chief Engineer's office. This will result in an approval memo that will be retained in the encroachment file for NCDOT's records. These documents will satisfy the encroachment of the installation of a longitudinal utility within fully-controlled right-of-way. Additional documentation will need to be created and agreed upon for maintenance and repairs during the life of the utility. More information is available at:

<https://connect.ncdot.gov/municipalities/Utilities/UtilitiesDocuments/Utilities%20Policy%20Manual.pdf>
<https://connect.ncdot.gov/municipalities/Utilities/Pages/Encroachment-Agreements.aspx>

16.	Copies of Governmental Approvals	<p>The OMC Contractor shall promptly (and in any event within five (5) Business Days after submitting an application or obtaining a Governmental Approval) deliver to the Department true and complete copies of:</p> <ul style="list-style-type: none"> (i) any application for a Governmental Approval submitted by the OMC Contractor (including any application to amend an existing Governmental Approval); and (ii) any new or amended Governmental Approval obtained by the OMC Contractor.
17.	Compliance with NEPA Document	The OMC Contractor shall at all times comply with the NEPA Document.
18.	Governmental Approvals and Required Rights with respect to Commercial Activities	<ul style="list-style-type: none"> (a) To the extent that the OMC Contractor shall exercise its rights under <u>Section 8(b) (Grant of Rights)</u>, the OMC Contractor shall exercise such rights in compliance with all Governmental Approvals and all Required Rights. (b) The OMC Contractor is solely responsible for obtaining any Required Right (including any application, revision, modification, amendment, supplement, renewal or extension related thereto) required in connection with the exercise of its rights under <u>Section 8(b) (Grant of Rights)</u>.
PART C — COORDINATION WITH DB CONTRACTOR AND COMMENCEMENT OF WORK		
19.	General Obligations	<ul style="list-style-type: none"> (a) The OMC Contractor shall carry out the O&M Work for existing dynamic message signs, related cabinets, and related communications devices, as further described in RFP Part E-.1.1, from the Closing Date until the end of the Term, in accordance with the Technical Requirements. (b) The OMC Agreement will require the OMC Contractor to participate in the completion and acceptance testing of the Broadband Infrastructure and, following the transfer of accepted Network Segments of the Broadband Infrastructure from the DB Contractor to the OMC Contractor, undertake the O&M Work in accordance with the terms of the OMC Agreement.
20.	Conditions Precedent to OMC Mobilizing and Undertaking O&M Work	The OMC Agreement will set out conditions precedent to the OMC Contractor mobilizing and undertaking the O&M Work.
21.	Reserved	
22.	Twelve Month Guarantee	In the event the OMC Contractor undertakes the construction of any New Commercial Infrastructure or other civil works, the OMC Contractor will provide a “Twelve Month Guarantee” as further described in Appendix Part A of the RFP.
23.	Unmanned Aircraft Systems	During the Term of the OMC Agreement, the OMC Contractor shall not use or operate Unmanned Aircraft Systems (“ <u>UAS</u> ”) without the prior written consent of the Department. Such consent shall be determined upon review and authorization of a written request from the OMC Contractor by the Department’s legal department and UAS program managers.

		If approved, the OMC Contractor shall execute a separate Authorization to Operate UAS (in a form to be provided by the Department) or other applicable third-party agreement prepared by the Department’s legal department setting forth the necessary indemnification, release, and insurance requirements. The Authorization to Operate UAS shall define the requirements that the OMC Contractor must follow in order to operate UAS within the Department Right-of-Way and other property. The OMC Contractor shall conduct all approved UAS operations in accordance with the Small Unmanned Aircraft Rule (Part 107) (14 CFR Part 107) of the Federal Aviation Administration Regulations.
PART D – OPERATION AND MAINTENANCE		
24.	Duration of the O&M Work	The OMC Contractor shall carry out the O&M Work for each Network Segment from the Transfer Date for the relevant Network Segment until the end of the Term, in accordance with the Technical Requirements.
25.	General Obligations	<p>The OMC Agreement will require the OMC Contractor to undertake the O&M Work and the Commercialization Activities in accordance with the terms of the RFP (including Part F-1.2 and Part F-1.3) and the Department’s <i>Standard Specifications for Roads and Structures (January 2018)</i> (the “<u>Standard Specifications</u>”). With respect to the preparation of Proposals, in the event of any conflict between the terms of the RFP, the Standard Specifications, and the OMC Terms, the OMC Terms will prevail.</p> <p>If the Department selects Track 1b as the Preferred Procurement Track, the Department anticipates compiling the relevant terms of the RFP relating to the O&M Work into a set of technical requirements (the “<u>Technical Requirements</u>”) and appending the Technical Requirements to the OMC Agreement.</p>
26.	Utility Accommodation	<p>It is anticipated that from time to time during the Operating Period, Utility Owners will apply for additional Utility permits to modify, repair, upgrade, relocate or expand existing Utilities within the Department Right-of-Way. For such Utility permit applications submitted after the Transfer Date with respect to the impacted Segment(s), the Contractor shall:</p> <ul style="list-style-type: none"> (i) as reasonably requested, assist the Department in its consideration of each Utility permit application in accordance with the OMC Agreement; (ii) as reasonably requested, assist each applicant with information regarding the location of other proposed and existing Utilities; and (iii) use Reasonable Efforts to coordinate work schedules with such applicants, as appropriate, to avoid the applicants’ activities interfering with the operation of the Broadband Infrastructure.
27.	Law Enforcement Services	The OMC Contractor acknowledges that any Governmental Entity empowered to enforce all Applicable Law is free to enter the Project Site or access the Broadband Infrastructure at any and all times in accordance with Applicable Law to carry out its law enforcement duties. No provision of the OMC Agreement is intended to surrender, waive or limit any law enforcement powers of any Governmental Entity, and all such police powers are expressly reserved.
28.	Handback	(a) On the Termination Date, the OMC Contractor shall, at no charge to the Department:

		<ul style="list-style-type: none"> (i) hand back the Broadband Infrastructure to the Department; (ii) ensure that the Broadband Infrastructure meets all of the Handback Requirements; and (iii) transfer to the Department all of the OMC Contractor’s right, title and interest in and to the Key Assets. <p>(b) In the event of Early Termination, the OMC Contractor shall only be required to comply with the requirements of <u>clause (a)</u> to the extent that any Renewal Work under the Handback Requirements was scheduled to have been performed prior to the Early Termination Date.</p> <p>(c) The OMC Agreement will set out terms relating to asset inspections and liquid security requirements to ensure the OMC Contractor’s compliance with the Handback Requirements.</p>
PART E – SUBCONTRACTING AND KEY PERSONNEL; LEGAL REQUIREMENTS		
29.	Subcontracting	<p>(a) Nothing in the OMC Agreement will create any contractual relationship between the Department and any Contractor.</p> <p>(b) No Contract entered into by any OMC Contractor-Related Entity will impose any obligation or liability upon the Department to any Contractor or any of its employees.</p> <p>(c) The retention of Contractors by the OMC Contractor will not relieve the OMC Contractor of its obligations under the OMC Agreement and the OMC Contractor will at all times be fully responsible under the OMC Agreement for the acts and omissions of all Contractors performing Work in relation to the Project, as if they were the acts and omissions of the OMC Contractor.</p>
30.	Key Personnel	<p>(a) Obligation to Maintain Key Personnel</p> <ul style="list-style-type: none"> (i) The OMC Contractor shall maintain the Key Personnel throughout the Term, as applicable, in accordance with this <u>Section 30 (Key Personnel)</u> and <u>Exhibit 5 (Key Personnel)</u>. (ii) With respect to the Key Personnel: <ul style="list-style-type: none"> (A) the OMC Contractor shall retain, or shall ensure that the relevant Key Contractor will retain, employ and utilize the individuals specifically named and listed as Key Personnel in <u>Exhibit 5 (Key Personnel)</u> (or replacements approved in accordance with this <u>Section 30 (Key Personnel)</u>) to fill the corresponding positions for the time periods set out in <u>Exhibit 5 (Key Personnel)</u>; (B) each of the Key Personnel shall fulfill the “Primary Functions/Duties” and satisfy the “Minimum Qualifications/Experience” of such Key Personnel position, in each case, specified in <u>Exhibit 5 (Key Personnel)</u>;

		<p>(C) each of the Key Personnel shall be assigned to the Project on a full-time basis and shall act independently of other organizations that may have an interest in the OMC Contractor; and</p> <p>(D) the OMC Contractor shall obtain the prior written consent of the Department for the appointment of any replacement Key Personnel, Subject to <u>Section 30(b)(iii)(B) (<i>Appointment and Replacement of Key Personnel</i>)</u>.</p> <p>(b) Appointment and Replacement of Key Personnel</p> <p>(i) The OMC Contractor shall not change or substitute any Key Personnel except:</p> <p>(A) due to retirement, death, disability, incapacity or voluntary or involuntary termination of employment; or</p> <p>(B) with the prior written consent of the Department.</p> <p>(ii) The OMC Contractor shall notify the Department in writing of any proposed replacement for any Key Personnel position, and shall ensure that any replacement satisfies the “Minimum Qualifications/Experience” for that position set out in <u>Exhibit 5 (<i>Key Personnel</i>)</u>.</p> <p>(iii) The Department will have the right to:</p> <p>(A) review the qualifications, capability and experience of each individual to be appointed to a Key Personnel position (including personnel employed by any Key Contractor to fill any such position); and</p> <p>(B) approve or reject the appointment of such individual in such position prior to the commencement of any Work by such individual (such approval not to be unreasonably withheld, delayed or conditioned). It will be reasonable for the Department to reject a proposed individual if that individual does not have qualifications, capability and experience that satisfy the “Minimum Qualifications/Experience” set out in <u>Exhibit 5 (<i>Key Personnel</i>)</u>.</p> <p>(iv) The OMC Contractor shall prepare a role profile, and submit such proposal in writing to the Department, for any new Key Personnel role it proposes. If the Department objects to a proposed additional or substitute Key Personnel role, the OMC Contractor shall repeat the above process until the Department has consented in writing to the proposed additional or substitute Key Personnel role.</p> <p>(c) General Obligations</p> <p>(i) The OMC Contractor shall ensure that each individual filling a Key Personnel position will dedicate the amount of time necessary for the proper prosecution and performance of the Work.</p>
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		<ul style="list-style-type: none"> (ii) A Key Personnel member may undertake more than one role with the prior written consent of the Department, however, no individual shall be nominated to fulfill the equivalent of more than one full-time role. (iii) The OMC Contractor shall prepare and maintain an organizational chart showing the Key Personnel. For each of the Key Personnel, the chart shall indicate their: <ul style="list-style-type: none"> (A) name; (B) the percentage of their time dedicated to each Key Personnel role; (C) their principal employer organization; and (D) their reporting line(s). (iv) The OMC Contractor shall provide the Department with contact information for all Key Personnel. The OMC Contractor shall also provide to the Department two (2) personnel who the Department can contact twenty-four (24) hours per day, seven (7) days per week, as necessary, with at least one (1) such personnel being Key Personnel who will be able to, in turn, promptly contact all other Key Personnel.
31.	Contracts with Affiliates	<ul style="list-style-type: none"> (a) The OMC Contractor shall have the right to have Work and services performed by Affiliates only under the following terms and conditions: <ul style="list-style-type: none"> (i) The OMC Contractor shall execute a written Contract with the Affiliate (ii) The Contract shall be consistent with Good Industry Practice and be in form and substance substantially similar to Contracts then being used by the OMC Contractor or Affiliates for similar Work or services with unaffiliated Contractors; (iii) The Contract shall set forth the scope of Work and services and all the pricing, terms and conditions respecting the scope of Work and services; (iv) The pricing, scheduling and other terms and conditions of the Contract shall be no less favorable to the OMC Contractor than those the OMC Contractor could reasonably obtain in an arms' length transaction with an unaffiliated contractor. The OMC Contractor shall bear the burden of proving that the same are no less favorable to the OMC Contractor; (v) No Affiliates shall be engaged to perform any Work or services which any Project Documents or any component part, plan or other documentation thereunder indicates are to be performed by an independent or unaffiliated party. No Affiliate shall be engaged to perform any Work or services, which would be inconsistent with Good Industry Practice. (b) Before entering into a written Contract with an Affiliate or any supplement or amendment thereto, the OMC Contractor shall submit a true and complete copy of the proposed Contract to the Department for review and comment to confirm compliance with the requirements of the Project Documents. The Department shall have fifteen (15) Business Days after receipt to deliver its comments to the OMC Contractor. If the Contract with the Affiliate is a Key Contract, and such Affiliate's

		<p>selection as a Key Contractor is not known, as of the Closing Date, the Affiliate shall be subject to the Department’s prior written approval in the Department’s reasonable discretion.</p> <p>(c) The OMC Contractor shall make no payments to Affiliates for work or services in advance of provision of such work or services, except for reasonable mobilization payments or other payments consistent with arm’s length, competitive transactions of similar scope. Advance payments in violation of this provision shall be excluded from the calculation of compensation for termination as set forth in <u>Exhibit 6 (Compensation on Termination)</u>.</p>
32.	Non-Discrimination; Equal Employment Opportunity	<p>(a) The OMC Contractor shall not, and shall cause the Contractors to not, discriminate on the basis of race, color, national origin, sex, age, religion or handicap in the performance of the Work under the Project Documents. The OMC Contractor shall carry out, and shall cause the Contractors to carry out, applicable requirements of 49 CFR Part 26. Failure by the OMC Contractor to carry out these requirements is a material breach of the OMC Agreement, which may result in a OMC Contractor Default and the termination of the OMC Agreement or such other remedy permitted hereunder as the Department deems appropriate (subject to the OMC Contractor’s rights to notice and opportunity to cure set forth in the OMC Agreement).</p> <p>(b) The OMC Contractor shall include the text of <u>clause (a)</u> in every Contract (including purchase orders and in every Contract of any OMC Contractor-Related Entity for Work), and shall require that is be included in all Contracts at lower tiers, so that such provisions will be binding upon each Contractor.</p> <p>(c) The OMC Contractor confirms for itself and all Contractors that the OMC Contractor and each Contractor has an equal employment opportunity policy ensuring equal employment opportunity without regard to race, color, national origin, sex, age, religion or handicap; and that the OMC Contractor and each Contractor maintains no employee facilities segregated on the basis of race, color, national origin, sex, age, religion or handicap. The OMC Contractor shall comply with all applicable equal employment opportunity and nondiscrimination provisions, including those set forth in the Federal Requirements, and shall require its Contractors to comply with such provisions.</p>
33.	Prompt Payment to Contractors	The OMC Contractor shall comply, and cause its Contractors to comply, with the North Carolina Prompt Payment Act, N.C. Gen. Stat. § 143-134.1.
34.	Applicable Law	<p>(a) The OMC Contractor shall at all times in carrying out the Work comply, and require its Contractors to comply, with all Applicable Law, including the Federal Requirements.</p> <p>(b) If there is any conflict between any Applicable Law and the other requirements of the OMC Agreement, Applicable Law will prevail and take precedence over any such conflicting provisions.</p>
35.	Federal Requirements	(a) The OMC Contractor shall comply, and require its Contractors to comply, with all laws and regulations applicable to the Project as a result of the costs of the Project being financed in part with federal-aid funds, including the Federal Requirements.

		(b) The OMC Contractor is prohibited from the use of “covered telecommunications equipment” as defined by 2 C.F.R. § 200.216 and the NDAA FY 2019 Section 889, and shall require its Contractors to comply with such prohibition.
36.	Reserved	Reserved.
PART F – PAYMENTS; LIQUIDATED DAMAGES		
37.	Payments to OMC Contractor	Payments with respect to the O&M Work will be calculated and made in accordance with the performance payment terms set forth in Part F-1.2 of the RFP.
38.	Payments to Department	Payment terms with respect to the revenue sharing payments (including the upfront payment and annual revenue sharing payments) (collectively, the “ <u>Revenue Sharing Payments</u> ”) will be based on the relevant payment terms set forth in the RFP.
39.	Liquidated Damages	The Department shall be entitled to assess liquidated damages for non-permitted lane closures, and failure to achieve performance requirements with respect to the O&M Work (in the form of pay-for-performance disincentives) (collective, “ <u>Liquidated Damages</u> ”) as described in the RFP.
PART G – SUPERVENING EVENTS		
40.	Compensation Events	
40.1	Entitlement to Claim	<p>If a Compensation Event directly causes, or is reasonably likely to directly cause, the OMC Contractor to do any one or more of the following:</p> <ul style="list-style-type: none"> (a) fail to comply with its obligations or exercise its rights under the OMC Agreement; (b) incur additional or increased costs; or (c) incur a Negative Commercial Revenue Impact, <p>the OMC Contractor may claim one or more of the following:</p> <ul style="list-style-type: none"> (ii) relief from compliance with its obligations under the OMC Agreement; (iii) compensation for any Change in Costs that the OMC Contractor has incurred or will incur as a direct result of such Compensation Event; or (iv) compensation for any Negative Commercial Revenue Impact.
40.2	Notice and Information for Compensation Events	The OMC Agreement will set forth requirements relating to the form of content of notices relating to the occurrence of Compensation Events, the timing for submission of such notices to the Department, and the consequences to the OMC Contractor for failing to submit the required notices, including the waiver by the OMC Contractor of its entitlement to relief.
40.3	Mitigation	The OMC Contractor shall use Reasonable Efforts to mitigate the delay and any other consequence of any Compensation Event.

40.4	Grant of Relief and Compensation	<p>If the OMC Contractor satisfies the relevant conditions relating to notice of a Compensation Event and otherwise meets its burden of proof that such Compensation Event was the direct cause or is reasonably likely to be the direct cause of, as applicable:</p> <ul style="list-style-type: none"> (i) the OMC Contractor’s inability to comply with its obligations under the OMC Agreement; (ii) the OMC Contractor incurring a Change in Costs; or (iii) the OMC Contractor incurring a Negative Commercial Revenue Impact, <p>the OMC Contractor will be entitled to relief from obligations or compensation.</p>
40.5	Calculation of Change in Cost and Negative Commercial Revenue Impacts	<p>(a) Any Change in Costs will be calculated in accordance with <u>Exhibit 7 (Principles for Calculation of Change in Costs)</u>.</p> <p>(b) Any Net Commercial Revenue Impact will be calculated in accordance with the definition thereof.</p>
40.6	Positive Revenue Impact of Compensation Event	<p>If a Compensation Event results in a Positive Commercial Revenue Impact, then the OMC Contractor will pay any amounts due to the Department from such Positive Commercial Revenue Impact in a manner reasonably acceptable to the Department.</p>
41.	Relief Events	
41.1	Entitlement to Claim	<p>If a Relief Event directly causes, or is likely to directly cause, the OMC Contractor to fail to comply with any of its obligations or exercise any of its rights under the OMC Agreement, the OMC Contractor may claim one or more of the following:</p> <ul style="list-style-type: none"> (i) relief from compliance with its obligations under the OMC Agreement; or (ii) relief from any rights of the Department under <u>Section 58 (Termination for OMC Contractor Default)</u>.
41.2	Notice and Information for Relief Events	<p>The OMC Agreement will set forth requirements relating to the form and content of notices relating to the occurrence of Relief Events, the timing for submission of such notices to the Department, and the consequences to the OMC Contractor for failing to submit the required notices, including the waiver by the OMC Contractor of its entitlement to relief.</p>
41.3	Mitigation	<p>The OMC Contractor shall use Reasonable Efforts to mitigate the delay and any other consequence of any Relief Event.</p>
41.4	Grant of Relief	<p>If the OMC Contractor satisfies the relevant conditions relating to notice of a Relief Event and otherwise meets its burden of proof that such Relief Event was the direct cause or is reasonably likely to be the direct cause of the OMC Contractor’s inability to comply with its obligations under the OMC Agreement, the OMC Contractor will be entitled to relief from obligations.</p>
42.	Force Majeure Events	

42.1	General	The occurrence or continuance of any Force Majeure Event shall not excuse any Party from performing any payment obligations contemplated under the OMC Agreement.
42.2	No Breach of Obligations	Neither Party may bring a claim for a breach of obligations under the OMC Agreement by the other Party or incur any liability to the other Party for any losses or damages incurred by that other Party if a Force Majeure Event occurs and the Affected Party is prevented from carrying out its obligations by that Force Majeure Event.
42.3	Failure to Agree; Right to Terminate	<p>(a) If:</p> <p>(i) as a result of a Force Majeure Event, the Affected Party is unable to comply with any of its material obligations under the OMC Agreement for a continuous period of more than one hundred eighty (180) days after the date such Force Majeure Event occurred; and</p> <p>(ii) within such one hundred eighty (180) day period, the Parties are unable to agree on appropriate terms to mitigate the effects of the Force Majeure Event and facilitate the continued performance of the OMC Agreement,</p> <p>either Party may deliver notice to the other Party that it wishes to terminate the OMC Agreement (a “<u>Force Majeure Termination Notice</u>”). A Force Majeure Termination Notice must (x) provide a proposed date of termination and (y) be delivered to the other Party at least thirty (30) days before such proposed date of termination.</p> <p>(b) If the Department delivers a Force Majeure Termination Notice to the OMC Contractor in accordance with <u>clause (a)</u> above, the OMC Agreement will terminate on the date of termination stated in such Force Majeure Termination Notice.</p> <p>(c) If the OMC Contractor delivers a Force Majeure Termination Notice to the Department in accordance with <u>clause (a)</u> above, <u>Section 42.4 (Department Options)</u> will apply.</p>
42.4	Department Options	<p>(a) If the OMC Contractor delivers a Force Majeure Termination Notice in accordance with <u>Section 42.3(a) (Failure to Agree; Right to Terminate)</u>, the Department shall, within fifteen (15) Business Days of receiving such notice, deliver a notice to the OMC Contractor stating that the Department either:</p> <p>(i) accepts that the OMC Agreement will terminate on the date stated in the Force Majeure Termination Notice; or</p> <p>(ii) requires the OMC Agreement to continue.</p> <p>(b) If the Department issues a notice under <u>clause (a)(i)</u> above or fails to deliver any notice under <u>clause (a)</u>, the OMC Agreement will terminate on the date set out in the Force Majeure Termination Notice delivered by the OMC Contractor in accordance with <u>Section 42.3(a) (Failure to Agree; Right to Terminate)</u>.</p> <p>(c) If the Department delivers a notice under <u>clause (a)(ii)</u> above:</p> <p>(i) subject to <u>clause (d)</u> below, the OMC Agreement will not terminate and will continue until the Department provides written notice (of at least</p>

		<p>thirty (30) days) to the OMC Contractor that it wishes the OMC Agreement to terminate; and</p> <p>(ii) until such time as the Department terminates the OMC Agreement in accordance with <u>clause (c)(i)</u>:</p> <p>(A) the OMC Contractor shall, to the extent practicable, continue to perform the Work; and</p> <p>(B) if a Force Majeure Event directly causes the assessment of any Performance Points, then, for the period following the Department’s delivery of the notice described in <u>clause (a)(ii)</u>, such Performance Points will be deemed to have not occurred for purposes of the OMC Agreement and no Liquidated Damages will be assessed by the Department in respect of such Force Majeure Event.</p> <p>(d) Unless otherwise agreed by the OMC Contractor, if the Force Majeure Event has a material adverse impact on the OMC Contractor’s ability to carry out the Commercial Activities (as determined by comparing the amount of revenues from Commercial Activities the OMC Contractor will lose while the Force Majeure Event persists to the amount of such revenues that the OMC Contractor forecasts in the Base Case Financial Model), then the Department shall not be entitled to require the OMC Agreement to continue for more than twelve (12) months following the date on which the Department delivers a notice under <u>clause (a)(ii)</u>.</p>
42.5	Cessation of Force Majeure Event	The Affected Party shall notify the other Party as soon as practicable after the Force Majeure Event ceases or no longer causes the Affected Party to be unable to comply with its obligations under the OMC Agreement. Following such notification the OMC Agreement shall continue to be performed on the terms existing immediately prior to the occurrence of the Force Majeure Event.
43.	Changes in Law	<p>(a) The OMC Contractor shall ensure that the Work is performed in accordance with the terms of the OMC Agreement following any Change in Law.</p> <p>(b) The provisions of <u>Section 40 (Compensation Events)</u> apply with respect to any Qualifying Change in Law.</p>
44.	Department Changes	The OMC Agreement will set forth a process by which the Department may request and/or direct the OMC Contractor to undertake changes in the Work.
45.	OMC Contractor Changes	The OMC Agreement will set forth a process by which the OMC Contractor may propose changes in the Work, including New Commercial Infrastructure, OMC Contractor Connected Vehicle Sites, and Commercial Laterals.
PART H – INDEMNITIES; INSURANCE		
46.	Indemnity	Subject to <u>Section 47 (Exclusions from Indemnity)</u> , to the fullest extent permitted by Applicable Law, the OMC Contractor shall release, defend, indemnify and hold harmless the Indemnified Parties on demand from and against any and all claims, liabilities, damages, and costs, including reasonable attorneys’ fees, to third parties for Losses arising from:

		<p>(a) death or personal injury;</p> <p>(b) loss of or damage to any Indemnified Party’s property;</p> <p>(c) Third Party Claims brought against any Indemnified Party;</p> <p>which may arise out of, or in consequence of, the performance or non-performance by the OMC Contractor of its obligations under any or all of the following:</p> <p>(i) the Project Documents;</p> <p>(ii) any violation of any federal or state securities or similar law by any OMC Contractor-Related Entity (other than as a direct result of any disclosure statements made by the Department or other Indemnified Party); and</p> <p>(iii) if applicable, the authorization, issuance, sale, trading, redemption or servicing of any bonds issued to finance the Project (regardless of the identity of the issuer), or the OMC Contractor’s Entity’s failure to comply with any requirement necessary to preserve the tax-exempt status of bonds (other than as a direct result of any disclosure statements made by the Department or other Indemnified Party).</p> <p>The OMC Contractor’s indemnification of the Indemnified Parties shall not be reduced in any way by any limitation on the amount of types of damages, compensation, or benefits payable by the OMC Contractor or its subcontractors under any employee benefit act including, but not limited to, worker’s compensation acts, disability benefits acts, or other employee benefit acts.</p>
47.	Exclusions from Indemnity	<p>The OMC Contractor shall not be responsible or be obliged to release, defend, indemnify or hold harmless any Indemnified Party with respect to any liability or Losses under <u>Section 46 (Indemnity)</u> to the extent that the same arise as a direct result of:</p> <p>(a) a Compensation Event, Relief Event or Department Default;</p> <p>(b) the presence of Hazardous Materials on any Project Site for which the Department is deemed to be the sole generator and arranger, but only to the extent that the relevant Loss does not arise as a direct result of the negligence of the OMC Contractor or the OMC Contractor failing to comply with the terms of the Project Documents;</p> <p>(c) the fraud, negligence, recklessness, bad faith or willful misconduct of an Indemnified Party;</p> <p>(d) any performance or non-performance by an Indemnified Party of its obligations under the Project Documents;</p> <p>(e) any Losses suffered by an Indemnified Party with respect to use of the Project Data, or any intellectual property related to the Project Data, other than any use specifically for the Project; or</p> <p>(f) any Losses suffered by an Indemnified Party arising from the breach of <u>Section 8(e) (Grant of Rights)</u>.</p>

		<i>provided</i> that this <u>Section 47 (Exclusions from Indemnity)</u> shall not apply with regard to any liability or losses that would otherwise be covered by insurance carried by the OMC Contractor as required by <u>Section 49 (Insurance)</u> .
48.	Limitation on Indemnity	An indemnity by the OMC Contractor under any provision of the OMC Agreement shall be without limitation to any indemnity by the OMC Contractor under any other provision of the OMC Agreement.
49.	Insurance	The OMC Contractor shall obtain and maintain, or cause to be obtained or maintained, at a minimum, the Insurance Policies identified in the RFP, including Section 107-15 of the Standard Specifications.
50.	Uninsurable Risks	<p>(a) If a risk usually covered by commercial general liability, all risks property or statutory insurances, in each case that is required under the OMC Agreement, becomes an Uninsurable Risk, the OMC Contractor shall notify the Department promptly (and in any event within five (5) Business Days) after the earlier of:</p> <ul style="list-style-type: none"> (i) the OMC Contractor becoming aware that the risk is likely to be an Uninsurable Risk; and (ii) the risk becoming an Uninsurable Risk, <p>and, in any event, at least ten (10) Business Days before expiration or cancellation of any existing insurance with respect to that risk (irrespective of the reason for the same). The OMC Contractor shall provide the Department with such information as the Department reasonably requests regarding the Uninsurable Risk.</p> <p>(b) If both Parties agree, or it is determined pursuant to the Dispute Resolution Procedures, that a risk is an Uninsurable Risk, the Department and the OMC Contractor shall consider in Good Faith:</p> <ul style="list-style-type: none"> (i) alternative insurance packages and programs that provide coverage as comparable to that contemplated in <u>Section 49 (Insurance)</u> as is possible under then-existing insurance market conditions; and (ii) other means by which the risk should be managed or shared (including considering the issue of self-insurance by either Party). <p>(c) If the Department and the OMC Contractor do not agree on how to manage or share the relevant Uninsurable Risk within ten (10) days of the date on which the OMC Contractor provides notice under <u>clause (a)</u>, the Department may refer the matter to a mediator acceptable to the Department and the OMC Contractor (acting reasonably) instead of using the Dispute Resolution Procedures.</p>
51.	Consequence of a Risk Becoming an Uninsurable Risk	<p>(a) If both Parties agree (acting reasonably), or it is determined pursuant to the Dispute Resolution Procedures, that:</p> <ul style="list-style-type: none"> (i) a risk is an Uninsurable Risk in accordance with <u>Section 50(b) (Uninsurable Risks)</u> and the Parties do not agree on how to manage or share the relevant Uninsurable Risk within thirty (30) days of the date on which the OMC Contractor provides notice under <u>Section 50(a)</u>

		<p><u>(Uninsurable Risks)</u> (irrespective of whether the matter has been referred to mediation under <u>Section 50(c) (Uninsurable Risks)</u> in that period); and</p> <p>(ii) the risk being an Uninsurable Risk is not caused by the actions, breaches, omissions or defaults of:</p> <p>(A) the OMC Contractor; or</p> <p>(B) a Contractor, unless the OMC Contractor has used best endeavors to remedy, overcome or otherwise mitigate the effect of the Contractor’s action, breach, omission or default,</p> <p>the Department shall deliver a notice to the OMC Contractor electing to either:</p> <p>(iii) terminate the OMC Agreement and pay the OMC Contractor in accordance with <u>Section 60 (Termination for Uninsurability)</u>; or</p> <p>(iv) continue the OMC Agreement and on the occurrence of the risk (but only for as long as such risk remains an Uninsurable Risk) the Department shall (at its option) either:</p> <p>(A) pay the OMC Contractor an amount equal to the insurance proceeds that would have been payable had the relevant insurance continued to be available (subject to the limitations, conditions and exclusions set out in the certificates and policies of insurance relating to such coverage previously provided by the Department, in which case the OMC Contractor will remain responsible for deductibles (the “<u>Relevant Insurance Amount</u>”)) and the OMC Agreement will continue; or</p> <p>(B) pay the OMC Contractor an amount equal to the amount calculated in accordance with <u>Section 60 (Termination for Uninsurability)</u> plus (in relation to third party liability insurance only) the Relevant Insurance Amount for that third party liability insurance, and the OMC Agreement will terminate.</p> <p>To the extent that the Department assumes any Uninsurable Risk in accordance with this <u>Section 51 (Consequences of a Risk Becoming an Uninsurable Risk)</u>, the Department shall provide a full waiver of subrogation to the OMC Contractor.</p> <p>(b) If, pursuant to <u>clause (a)(iv)</u>, the OMC Agreement continues:</p> <p>(i) the OMC Contractor’s obligations in <u>Section 49 (Insurance)</u> to maintain insurance with respect to the Uninsurable Risk are waived and the OMC Contractor will not be considered in breach of its obligations regarding the maintenance of insurance pursuant to the OMC Agreement as a result of the failure to maintain insurance with respect to such Uninsurable Risk for so long as the risk is an Uninsurable Risk (and for such time as is required for the OMC Contractor to take out insurance as required under <u>clause (b)(ii)</u>); and</p>
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		(ii) the OMC Contractor shall use Reasonable Efforts to regularly review the insurance market generally, to ascertain whether an Uninsurable Risk has become insurable and in any event shall approach (or require its insurance brokers to approach) the insurance market at least once every six (6) months to establish whether the risk remains an Uninsurable Risk. Upon the OMC Contractor becoming aware that the risk is no longer an Uninsurable Risk, the OMC Contractor shall promptly (and in any event within ten (10) Business Days of becoming aware) take out and maintain or ensure the taking out and maintenance of insurance (to be incepted as soon as reasonably practicable) for such risk in accordance with the OMC Agreement
52.	Performance Security	The OMC Contractor shall provide, or cause to be provided, performance and payment bonds as further described in Part A-1.2 of the RFP (collectively, the “ <u>Performance Security</u> ”).
PART I – PRINCIPAL OMC CONTRACTOR DOCUMENTS; FINANCIAL MODEL		
53.	Key Contracts	<p>The OMC Contractor shall perform its obligations under, and observe all of the provisions of, the Key Contracts and must not, without the prior written consent of the Department:</p> <ul style="list-style-type: none"> (a) terminate or agree to termination of all or any part of any Key Contract, except for default in accordance with its terms; (b) amend any Key Contract in any material respect; (c) in any material respect depart from its obligations (or waive or allow to lapse any rights it may have in a material respect) or allow others in any material respect to depart from their obligations (or waive or allow to lapse any rights they may have in a material respect) under any Key Contract; or (d) enter into (or permit any other Person to enter into) any agreement replacing all or part of (or otherwise materially and adversely affecting the interpretation of) any Key Contract, <p>if the proposed course of action may reasonably be expected to have a material adverse effect on the ability of the OMC Contractor to perform its obligations under the OMC Agreement.</p>
54.	Delivery of Changed Principal OMC Contractor Documents	If at any time an amendment is made to any Principal OMC Contractor Document or the OMC Contractor enters into a new Principal OMC Contractor Document (or any agreement that affects the interpretation or application of any Principal OMC Contractor Document), the OMC Contractor shall deliver to the Department a conformed copy of each such amendment or agreement within ten (10) Business Days of the date of its execution or creation (as applicable) certified as a true copy by an officer of the OMC Contractor.
55.	Financial Model	Base Case Financial Model requirements are specified in Part E-1.8 of the RFP. The OMC Contractor shall perform annual updates of the Base Case Financial Model in accordance with <u>Section 63 (Financial Performance Reporting; Audits)</u> .
PART J – TERMINATION AND STEP-IN		
56.	Termination for Convenience	

56.1	Right to Terminate for Convenience	The Department may terminate the OMC Agreement at any time before the last date of the Term.
56.2	Compensation on Termination	If the OMC Agreement is terminated pursuant to this <u>Section 56 (Termination for Convenience)</u> , the Department shall pay compensation to the OMC Contractor in accordance with Section 1 (<u>Compensation on Termination for Convenience, Department Default or Court Ruling</u>) of <u>Exhibit 6 (Compensation on Termination)</u> .
57.	Termination for Department Default	
57.1	Department Default	<p>The occurrence of any one or more of the following will constitute a “<u>Department Default</u>”:</p> <ul style="list-style-type: none"> (a) the Department fails to make any payment due to the OMC Contractor under the OMC Agreement when due, except to the extent such payment is subject to a Good Faith Dispute; (b) any representation or warranty made by the Department under the OMC Agreement is false, misleading or inaccurate when made, in each case in any material respect, or omits material information when made; (c) the Department fails to perform any of its obligations under the OMC Agreement, which substantially frustrates or renders it substantially impossible for the OMC Contractor to perform its obligations or exercise its rights under the OMC Agreement for a continuous period of sixty (60) days or more; (d) the Department fails to comply with <u>Section 66.3 (Assignment by the Department)</u>; or (e) any condemnation or other taking by eminent domain of all or any material portion of the Project.
57.2	Notice and Cure Periods	<ul style="list-style-type: none"> (a) The OMC Contractor shall provide written notice (“<u>Department Default Notice</u>”) to the Department upon the occurrence of a Department Default. (b) Upon receipt of a Department Default Notice, the Department will have the following cure periods: <ul style="list-style-type: none"> (i) for a Department Default under <u>Section 57.1(a) (Non-Payment)</u>, a period of forty-five (45) days after the Department receives the Department Default Notice; (ii) for a Department Default under <u>Section 57.1(c) (Non-Performance of Obligations)</u>, a period of sixty (60) days after the Department receives the Department Default Notice; (iii) for a Department Default under <u>Section 57.1(b) (Representations and Warranties)</u> or <u>Section 57.1(e) (Condemnation)</u>: <ul style="list-style-type: none"> (A) a period of thirty (30) days after the Department receives the Department Default Notice; or (B) if, despite the Department’s commencement of meaningful steps to cure immediately after receiving the Department Default Notice, the Department Default cannot be cured within such thirty

		<p>(30) day period, the Department will have such additional period of time, up to a maximum cure period of one hundred twenty (120) days after the Department receives the Department Default Notice, as is reasonably necessary to cure the Department Default; and</p> <p>(iv) for a Department Default under <u>Section 57.1(d) (Assignment)</u>, there is no cure period.</p> <p>(c) A Department Default under <u>Section 57.1(b) (Representations and Warranties)</u> will be regarded as cured when the adverse effects of such Department Default are cured.</p>
57.3	Compensation on Termination	If the OMC Agreement is terminated pursuant to this <u>Section 57 (Termination for Department Default)</u> , the Department shall pay compensation to the OMC Contractor in accordance with Section 1 (<u>Compensation on Termination for Convenience, Department Default or Court Ruling</u>) of <u>Exhibit 6 (Compensation on Termination)</u> .
58.	Termination for OMC Contractor Default	
58.1	OMC Contractor Default	<p>The occurrence of any one or more of the following will constitute a “<u>OMC Contractor Default</u>”:</p> <p>(a) the OMC Contractor Abandons the Project;</p> <p>(b) Reserved;</p> <p>(c) a Restricted Change in Ownership occurs;</p> <p>(d) the OMC Contractor assigns, transfers, pledges, mortgages or otherwise encumbers any of its rights or obligations under the OMC Agreement in breach of <u>Section 66 (Assignment and Transfer; Fundamental Changes; Department Employees)</u>;</p> <p>(e) an Insolvency Event arises with respect to the OMC Contractor;</p> <p>(f) Reserved;</p> <p>(g) Reserved;</p> <p>(h) Reserved;</p> <p>(i) Reserved;</p> <p>(j) the OMC Contractor fails to pay any amount due to the Department under the OMC Agreement when due, except to the extent such payment is subject to a Good Faith Dispute;</p> <p>(k) any representation or warranty made by the OMC Contractor in the OMC Agreement or any certificate, schedule, report, instrument or other document delivered to the Department pursuant to the OMC Agreement is false or materially misleading or inaccurate when made, in each case in any material respect, or omits material information when made;</p>

		<ul style="list-style-type: none"> (l) the OMC Contractor fails to comply with any Governmental Approval or Applicable Law in any material respect; (m) the OMC Contractor fails to promptly comply with any written suspension of Work order issued by the Department in accordance with the OMC Agreement, except to the extent that such failure arises as a direct result of a Compensation Event or a Relief Event; (n) a Performance Point Default Trigger occurs; (o) the OMC Contractor fails to obtain, provide and maintain the insurance policies or Performance Security in accordance with the requirements of the OMC Agreement; (p) a Persistent Breach by the OMC Contractor occurs; (q) there occurs any final, non-appealable suspension or debarment (distinguished from ineligibility due to lack of financial qualifications), or there goes into effect an agreement for voluntary exclusion, from bidding, proposing or contracting with any federal or State department or agency of (i) the OMC Contractor, (ii) any Affiliate of the OMC Contractor for whom transfer of ownership would constitute a Restricted Change in Ownership, (iii) any Equity Member or (iv) any Key Contractor whose work is not completed; or (r) without limiting <u>Section 58.1(a) (OMC Contractor Default)</u> through <u>Section 58.1(r) (OMC Contractor Default)</u>: <ul style="list-style-type: none"> (i) The OMC Contractor breaches any other material obligation under the OMC Agreement, other than: <ul style="list-style-type: none"> (A) a breach for which a Performance Point was or could have been assessed; or (B) a breach that arises as a direct result of the occurrence of a Compensation Event or Relief Event; or (s) The OMC Contractor makes any written repudiation of the OMC Agreement.
58.2	Persistent Breach	<ul style="list-style-type: none"> (a) Initial Warning Notice <ul style="list-style-type: none"> (i) If the OMC Contractor commits a breach of the OMC Agreement (other than (x) any breach for which a Performance Point could have been assessed or (y) any breach that arises as a direct result of the occurrence of a Compensation Event or a Relief Event) that: <ul style="list-style-type: none"> (B) continues for more than thirty (30) consecutive days; or (C) occurs more than three (3) times in any six (6)-month period, <p style="margin-left: 40px;">the Department may serve a notice (an “<u>Initial Warning Notice</u>”) on the OMC Contractor, in accordance with <u>clause (a)(ii)</u>.</p>

		<p>(ii) An Initial Warning Notice must:</p> <ul style="list-style-type: none"> (A) specify that it is an Initial Warning Notice; (B) give reasonable details of the relevant breach; and (C) state that the relevant breach is a breach which, if it recurs frequently or continues, may result in termination of the OMC Agreement for Persistent Breach. <p>(b) Final Warning Notice</p> <p>(i) If, after the date of service of the Initial Warning Notice, the breach specified in the Initial Warning Notice:</p> <ul style="list-style-type: none"> (A) continues for more than thirty (30) consecutive days; or (B) recurs three (3) or more times within the nine (9)-month period after such date, <p>the Department may serve another notice (a “<u>Final Warning Notice</u>”) on the OMC Contractor, in accordance with <u>clause (b)(ii)</u>.</p> <p>(ii) A Final Warning Notice must:</p> <ul style="list-style-type: none"> (A) specify that it is a Final Warning Notice; (B) state that the breach specified has been the subject of an Initial Warning Notice served within the six (6)-month period prior to the date of service of the Final Warning Notice; and (C) state that if the breach: <ul style="list-style-type: none"> (aa) continues for more than thirty (30) consecutive days after the date of service of the Final Warning Notice; or (bb) recurs three (3) or more times within the six (6)-month period after the date of service of the Final Warning Notice, <p>an OMC Contractor Default will occur under <u>Section 58.1 (OMC Contractor Default)</u> and the OMC Agreement may be terminated.</p> <p>(c) Concurrency of Warning Notices</p> <p>An Initial Warning Notice must not be served with respect to any incident or breach for which an Initial Warning Notice or Final Warning Notice has been served and is outstanding.</p>
58.3	Notice and Cure Periods	(a) The Department shall provide written notice (“ <u>OMC Contractor Default Notice</u> ”) to the OMC Contractor upon the occurrence of an OMC Contractor Default.

		<p>(b) Upon receipt of an OMC Contractor Default Notice, the OMC Contractor shall have the following cure periods:</p> <ul style="list-style-type: none"> (i) for an OMC Contractor Default under <u>Section 58.1(a) (Abandonment)</u>, <u>Section 58.1(j) (Non-Payment)</u>, <u>Section 58.1(o) (Insurance/Performance Security)</u>, a period of thirty (30) days after the OMC Contractor receives the OMC Contractor Default Notice; (ii) for an OMC Contractor Default under <u>Section 58.1(k) (Representations and Warranties)</u>, <u>Section 58.1(l) (Governmental Approvals)</u>, <u>Section 58.1(m) (Suspension Order)</u>, <u>Section 58.1(q) (Debarment)</u>, and <u>Section 58.1(r) (Material Breach)</u>, <ul style="list-style-type: none"> (A) a period of thirty (30) days after the OMC Contractor receives the OMC Contractor Default Notice; or (B) if, despite the OMC Contractor’s commencement of meaningful steps to cure immediately after receiving the OMC Contractor Default Notice, the OMC Contractor Default cannot be cured within such thirty (30) day period the OMC Contractor will have such additional period of time, up to a maximum cure period of one hundred fifty (150) days, as is reasonably necessary to cure the OMC Contractor Default; and (iii) for an OMC Contractor Default under <u>Section 58.1(c) (Restricted Change in Ownership)</u>, <u>Section 58.1(d) (Assignment)</u>, <u>Sections 58.1(e)</u>, <u>Section 58.1(n) (Performance Points)</u>, <u>Section 58.1(p) (Persistent Breach)</u>, and <u>Section 58.1(s) (Repudiation)</u> there is no cure period. <p>(c) An OMC Contractor Default under <u>Section 58.1(k) (Representations and Warranties)</u> will be regarded as cured when the adverse effects of such OMC Contractor Default are cured.</p>
58.4	Remedial Plan for OMC Contractor Default	<p>(a) If an OMC Contractor Default occurs and it has not been cured within any relevant cure period set out in <u>Section 58.3 (Notice and Cure Periods)</u>, the Department may, without prejudice to any other right or remedy available to it, require the OMC Contractor to prepare and submit, within thirty (30) days of being notified, a remedial plan (“<u>Remedial Plan</u>”).</p> <p>(b) A Remedial Plan must set out specific actions and an associated schedule to be followed by the OMC Contractor to cure the relevant OMC Contractor Default and reduce the likelihood of such default occurring in the future. Such actions may include:</p> <ul style="list-style-type: none"> (i) changes in organizational and management structure; (ii) revising and restating management plans and procedures; (iii) improvements to quality control practices; (iv) increased monitoring and inspections; (v) changes in Key Personnel and other important personnel; and

		<p>(vi) replacement of Contractors.</p> <p>(c) Within thirty (30) days of receiving a Remedial Plan, the Department shall notify the OMC Contractor whether such Remedial Plan is acceptable (in the Department’s absolute discretion). If the Department notifies the OMC Contractor that its Remedial Plan is acceptable, the OMC Contractor shall implement such Remedial Plan in accordance with its terms.</p>
58.5	Termination for OMC Contractor Default	<p>(a) If an OMC Contractor Default occurs and:</p> <p>(i) the OMC Contractor Default has not been cured within any relevant cure period set out in <u>Section 58.3 (Notice and Cure Periods)</u>; or</p> <p>(ii) where a Remedial Plan has been accepted by the Department, the OMC Contractor fails to comply with the Remedial Plan or cure the OMC Contractor Default, in each case in accordance with the schedule provided in such Remedial Plan,</p> <p>the Department may serve a Termination Notice (“<u>Department Termination Notice</u>”) on the OMC Contractor at any time during the continuance of the OMC Contractor Default.</p> <p>(b) A Department Termination Notice must specify the OMC Contractor Default that has occurred entitling the Department to terminate.</p> <p>(c) Subject to the terms of the Lenders Direct Agreement, the OMC Agreement will terminate on the date that is thirty (30) days after the date the OMC Contractor receives a Department Termination Notice.</p>
58.6	Compensation on Termination	<p>(a) Subject to <u>clause (b)</u> below, if the OMC Agreement is terminated in accordance with this <u>Section 58 (Termination for OMC Contractor Default)</u>, the Department shall pay compensation to the OMC Contractor in accordance with Section 4 (<u>Compensation on Termination for OMC Contractor Default</u>), as applicable, of <u>Exhibit 6 (Compensation on Termination)</u>.</p> <p>(b) If it is finally determined under the Dispute Resolution Procedures that the Department was not entitled to terminate the OMC Agreement under <u>Section 58.5 (Termination for OMC Contractor Default)</u>:</p> <p>(i) the Department will be deemed to have terminated the OMC Agreement for convenience under <u>Section 56 (Termination for Convenience)</u>; and</p> <p>(ii) the Department shall pay compensation to the OMC Contractor in accordance with <u>Section 56.2 (Compensation on Termination)</u> (net of any payments already made to the OMC Contractor under <u>clause (a)</u> above).</p>
59.	Termination for Extended Force Majeure	
59.1	Right to Terminate for Extended Force Majeure	The OMC Agreement may be terminated by either Party pursuant to <u>Section 42.3 (Failure to Agree; Right to Terminate)</u> or in accordance with <u>Section 42.4 (Department Options)</u> .

59.2	Compensation on Termination	If the OMC Agreement is terminated pursuant to <u>Section 42.3 (Failure to Agree; Right to Terminate)</u> or <u>Section 42.4 (Department Options)</u> , the Department shall pay compensation to the OMC Contractor in accordance with Section 2 (<i>Compensation on Termination for Extended Force Majeure, Uninsurability or Materially Adverse FCC Order</i>) of <u>Exhibit 6 (Compensation on Termination)</u> .
60.	Termination for Uninsurability	
60.1	Right to Terminate for Uninsurability	The OMC Agreement may be terminated by either Party pursuant to <u>Section 51 (Consequences of a Risk Becoming an Uninsurable Risk)</u> .
60.2	Compensation on Termination	If the OMC Agreement is terminated pursuant to <u>Section 51 (Consequences of a Risk Becoming an Uninsurable Risk)</u> , the Department shall pay compensation to the OMC Contractor in accordance with Section 2 (<i>Compensation on Termination for Extended Force Majeure, Uninsurability or Materially Adverse FCC Order</i>) of <u>Exhibit 6 (Compensation on Termination)</u> .
61.	Termination by Court Ruling or for Materially Adverse FCC Order	
61.1	Termination by Court Ruling	The OMC Agreement will automatically terminate upon the occurrence of either of the following: (a) issuance of a final, non-appealable order by a court of competent jurisdiction to the effect that the OMC Agreement in its entirety is void, unenforceable or impossible to perform (except where void, unenforceable or impossible to perform by reason of the OMC Contractor’s acts, omissions, negligence, willful misconduct, fraud or breach of warranty or representation) (a “ <u>Termination by Court Ruling for Illegality</u> ”); or (b) issuance of a final, non-appealable order by a court of competent jurisdiction upholding the binding effect on the OMC Contractor or the Department of a Change in Law that causes impossibility of either performance of a fundamental obligation or exercise of a fundamental right by the OMC Contractor or the Department under the OMC Agreement (a “ <u>Termination by Court Ruling for Impossibility</u> ”).
61.2	Compensation on Termination by Court Ruling	If the OMC Agreement is terminated pursuant to <u>Section 61.1 (Termination by Court Ruling)</u> , the Department shall pay compensation to the OMC Contractor in accordance with Section 1 (<i>Compensation on Termination for Convenience, Department Default or Court Ruling</i>) of <u>Exhibit 6 (Compensation on Termination)</u> .
61.3	Termination for Materially Adverse FCC Order	(a) If there is issued a Materially Adverse FCC Order, then the OMC Contractor may terminate the OMC Agreement by delivering to the Department a notice to the Department electing to terminate the OMC Agreement (“ <u>FCC Termination Notice</u> ”) within thirty (30) days following the date of the Materially Adverse FCC Order. (b) An FCC Termination Notice must specify that a Materially Adverse FCC Order has been issued. (c) The OMC Agreement will terminate on the date that is thirty (30) days after the date the Department receives a FCC Termination Notice.

61.4	Compensation on Termination for Materially Adverse FCC Order	If the OMC Agreement is terminated pursuant to <u>Section 61.3 (Termination for Materially Adverse FCC Order)</u> , the Department shall pay compensation to the OMC Contractor in accordance with Section 2 (<u>Compensation on Termination for Extended Force Majeure, Uninsurability or Materially Adverse FCC Order</u>) of <u>Exhibit 6 (Compensation on Termination)</u> .
62.	Department Step-In	
62.1	Right to Step-In	<p>If the Department reasonably believes that it needs to take action in connection with the Work because:</p> <ul style="list-style-type: none"> (i) an Emergency has arisen; (ii) an OMC Contractor Default has occurred and has not been cured within the relevant cure period (if any) set out in <u>Section 57.2 (Notice and Cure Periods)</u>; or (iii) the OMC Contractor has failed to meet any Safety Standard within a reasonable period of time under the circumstances, <p>the Department may, subject to the Lenders Direct Agreement, take action in accordance with this <u>Section 62 (Department Step-in)</u>.</p>
62.2	Notice to OMC Contractor	<p>(a) If <u>Section 62.1(i) (Right to Step-in)</u> applies and the Department wishes to take action, the Department shall, subject to <u>Section 62.2(b) (Notice to OMC Contractor)</u>, notify the OMC Contractor in writing of the following:</p> <ul style="list-style-type: none"> (i) the action it wishes to take; (ii) the reason for such action; (iii) the date it wishes to commence such action; (iv) the time period which it believes will be necessary for such action; and (v) to the extent practicable, the effect on the OMC Contractor and its obligation to carry out the Work during the period such action is being taken. <p>(b) In the case of an Emergency, the Department may take any action it reasonably believes is necessary in order to mitigate or contain such Emergency without prior notice to the OMC Contractor.</p>
62.3	Required Action by the Department	<p>(a) Following service of notice under <u>Section 62.2(a) (Notice to OMC Contractor)</u> or upon the occurrence of an Emergency:</p> <ul style="list-style-type: none"> (i) the Department may take any action as notified or otherwise permitted under <u>Section 62.2 (Notice to the OMC Contractor)</u> and any consequential additional actions it reasonably believes are necessary (each a "<u>Required Action</u>"); and

		<p>(ii) the OMC Contractor shall use Reasonable Efforts to give all assistance requested by the Department, while the Department is taking any Required Action.</p> <p>(b) The Department shall provide the OMC Contractor with notice of completion of any Required Action. The Department shall also use Reasonable Efforts to provide the OMC Contractor with notice of anticipated completion as far in advance as is reasonably practicable.</p> <p>(c) The Department shall undertake any Required Action in accordance with Good Industry Practice.</p>
62.4	Step-In Without OMC Contractor Breach	<p>If the Department takes Required Action, other than as a result of the OMC Contractor breaching its obligations under the OMC Agreement, for so long as, and to the extent that, the Required Action is taken and it prevents or delays the OMC Contractor's performance of any of its obligations under the OMC Agreement:</p> <p>(i) the OMC Contractor will be relieved from performing such obligations under the OMC Agreement; and</p> <p>(ii) subject to the OMC Contractor providing the Department with reasonable assistance (at the expense of the Department to the extent the OMC Contractor incurs incremental costs), for the period during which the Department is taking such Required Action, such Required Action will be deemed a Compensation Event.</p>
PART K – MISCELLANEOUS		
63.	Financial Performance Reporting; Audits	<p>(a) The OMC Contractor shall, and shall cause its Contractors, to maintain books and records related to the performance of the OMC Agreement and necessary to substantiate amounts paid by the Department in accordance with Applicable Law, the terms of the OMC Agreement, and GAAP.</p> <p>(b) Within ninety (90) Calendar Days following the end of the first year of the Commercialization Activities and each anniversary of such date thereafter for the remainder of the term, the OMC Contractor shall submit an annual financial performance report (the "<u>Annual Financial Performance Report</u>") to the Department for its review and approval.</p> <p>(c) The Annual Financial Performance Report will include financial information, assumptions, revenues from the Commercialization Activities, capital investments, O&M Work costs, and sources and uses of funds relating to the Commercialization Activities. The Annual Financial Performance Report will also include an updated Base Case Financial Model, which reflects actual Revenues from Commercial Activities, O&M Costs for Commercial Activities, and Net Commercialization Cash Flows.</p> <p>(d) The Annual Financial Performance Report will be audited by an accredited audit firm chosen by the OMC Contractor that is unaffiliated with the OMC Contractor and otherwise free of conflicts of interest. The OMC Contractor will be responsible for all costs relating to such audits.</p>
64.	Intellectual Property	<p>Except for third party licensed software and software previously developed by the OMC Contractor, all work product produced for the Department, including but not limited to source code, software, specifications, plans, designs and engineering, drawings, data,</p>

		<p>information, or other written, recorded, photographic, or visual materials, trademarks, service marks, copyrights, or other work product produced by the OMC Contractor or any Contractor in the performance of the Work shall be deemed “<u>Work Product</u>”. All Work Product is considered services for hire. Accordingly, all Work Product is the exclusive property of the Department. The OMC Contractor will notify the Department in writing before using any of the OMC Contractor’s previously developed software for the Work. The OMC Contractor and the Department will honor all applicable preexisting licenses, copyrights, trademarks, service marks, and patents. If the OMC Contractor purchases the right to any license, the agreements for the use or ownership of such license will be placed in the name of the Department, along with all other rights and obligations. In addition, the OMC Contractor will mark all Department content or previously unprotected work product designated by the Department with a notice as follows: “North Carolina Department of Transportation, (Year)”.</p>
65.	Public Records Law	<p>(a) The OMC Contractor acknowledges and agrees that, except as provided by North Carolina General Statutes §§ 132-1 <i>et seq.</i> (“<u>Public Records Law</u>”) or Applicable Law, all Submittals, records, documents, drawings, plans, specifications and other materials in the Department’s possession, including materials submitted by the OMC Contractor to the Department, are subject to the provisions of the Public Records Law. If the OMC Contractor believes information or materials submitted to the Department constitute trade secrets, proprietary information or other information that is not subject to the Public Records Law or is excepted from disclosure under the Public Records Law or Applicable Law, the OMC Contractor shall be solely responsible for specifically and conspicuously designating that information by placing “CONFIDENTIAL” in the center header of each such document or page affected, as it determines to be appropriate. Any specific proprietary information, trade secrets or confidential commercial and financial information shall be clearly identified as such, and shall be accompanied by a concise statement of reasons supporting the claim, including the applicable Law, which supports the claim. Nothing contained in this <u>Section 65 (Public Record Laws)</u> shall modify or amend requirements and obligations imposed on the Department by the Public Records Law or other Applicable Law, and the provisions of the Public Records Law or other Applicable Law shall control in the event of a conflict between the procedures described above and Applicable Law. The OMC Contractor is advised to contact legal counsel concerning such Applicable Law and its application to OMC Contractor.</p> <p>(b) If the Department receives a request for public disclosure of materials marked “CONFIDENTIAL,” the Department will use reasonable efforts to notify the OMC Contractor of the request and give the OMC Contractor an opportunity to assert, in writing and at its sole expense, a claimed exception under the Public Records Law or other Applicable Law within the time period specified in the notice issued by the Department and allowed under the Public Records Law. Under no circumstances, however, will the Department be responsible or liable to the OMC Contractor or any other Person for the disclosure of any such labeled materials, whether the disclosure is required by Applicable Law, or court order, or occurs through inadvertence, mistake or negligence on the part of the Department or its officers, employees, contractors or consultants.</p> <p>(c) In the event of any proceeding or litigation concerning the disclosure of any material submitted by the OMC Contractor to the Department, the Department’s sole involvement will be as a custodian retaining the material until otherwise ordered by a court or such other authority having jurisdiction with respect thereto,</p>

		<p>and the OMC Contractor shall be fully responsible for otherwise prosecuting or defending any action concerning the materials at its sole cost and risk; <i>provided, however</i>, that the Department reserves the right, in its sole discretion, to intervene or participate in the litigation in such manner as it deems necessary or desirable. Except in the case of the Department’s voluntary intervention or participation in litigation, the OMC Contractor shall pay and reimburse the Department within thirty (30) days after receipt of written demand and reasonable supporting documentation for all costs and fees, including attorneys’ fees and costs, the Department incurs in connection with any litigation, proceeding or request for disclosure.</p> <p>(d) Notwithstanding the foregoing, the OMC Contractor consents to all other disclosures required by Applicable Law. The OMC Contractor further expressly waives any right to contest, impede, prevent or delay such disclosure, or to initiate any proceeding that may have the effect of impeding, preventing or delaying such disclosure, under the P3 Policy, the Public Records Law or any other Applicable Law relating to the confidentiality or disclosure of information.</p>
66.	Assignment and Transfer; Fundamental Changes; Department Employees	
66.1	Assignment by OMC Contractor	Subject to <u>Section 66.2 (Security)</u> , the OMC Contractor shall not assign, transfer, pledge, mortgage or otherwise encumber any of its rights or obligations under the OMC Agreement without the prior written consent of the Department.
66.2	Security	The provisions of <u>Section 66.1 (Assignment by the OMC Contractor)</u> do not apply to the grant of any security for any financing extended to the OMC Contractor (directly or indirectly) under the Finance Documents or to the enforcement of the same. ⁴
66.3	Assignment by Department	<p>The Department may, upon prior written notice to the OMC Contractor, but without the OMC Contractor’s consent, assign all or any portion of its rights, title and interests in and to the OMC Agreement, the Project or the Project Site to any other Governmental Entity that:</p> <ul style="list-style-type: none"> (i) succeeds to the governmental powers and authority of the Department; and (ii) has sources of funding to perform the payment obligations of the Department under the OMC Agreement that are at least as adequate and secure as the Department’s at the time of the assignment.
66.4	Change or Organization or Name	<p>(a) The OMC Contractor shall not change the legal form of its organization without providing prior written notice to the Department.</p> <p>(b) If either Party changes its name, such Party agrees to promptly (and in any event within ten (10) Business Days of such change) furnish the other Party with written notice of such name change and appropriate supporting documentation.</p>
66.5	Department Employees	The OMC Contractor shall not engage the services of any Person currently employed by the Department without prior written consent of the Department.
67.	Change in Ownership	

⁴ **Note to Proposers:** Provision to be deleted and/or modified, as needed, to accommodate a corporate finance transaction structure.

67.1	Restricted Change in Ownership	<p>(a) A Restricted Change in Ownership will constitute an OMC Contractor Default for the purposes of <u>Section 57 (Termination for OMC Contractor Default)</u>.</p> <p>(b) A “<u>Restricted Change in Ownership</u>” will arise if:</p> <ul style="list-style-type: none"> (i) Reserved; (ii) any Change in Ownership occurs which involves the transfer of any shares, membership interests or control to a Prohibited Person; or (iii) any Change in Ownership occurs which would be reasonably likely to have a material adverse effect on the OMC Contractor’s ability to perform its obligations under the OMC Agreement with respect to the O&M Work, taking into account the financial strength and integrity of the transferee, compared to that of the transferor. <p>(c) A Restricted Change in Ownership will not arise pursuant to <u>Section 67.1(a) (Restricted Change in Ownership)</u> as a direct result of:</p> <ul style="list-style-type: none"> (i) the grant or enforcement of security in favor of the Lenders over or in relation to any shares or membership interests in the OMC Contractor or an Equity Member unless under a Security Document exclusively for the purpose of securing the Project Debt, subject to the terms and conditions of the OMC Agreement; (ii) a change in legal or beneficial ownership of any shares that are listed on a recognized stock exchange, including such transactions involving any initial public offering; (iii) a transfer of interests between managed funds that are under common ownership or control or between the general partner or manager (or the parent company of such general partner or manager) and any managed funds under common ownership or control with such general partner or manager (or the parent company of such general partner or manager), if the relevant funds and the general partner or manager of such funds (or the parent company of such general partner or manager) have been approved by the Department in writing prior to the date of the OMC Agreement;⁵or (iv) a reorganization or transfer of interest within a group of Persons under common ownership or control of direct or indirect ownership interests in any Person or of any intermediate entity in the chain of ownership of such Person so long as there is no substantive change in the entity or group of entities that ultimately have (individually or collectively) ownership or control of such Person. <p>(d) For the purposes of this <u>Section 67.1 (Restricted Change in Ownership)</u>, a Person will only be deemed to own shares or membership interests in another Person if such Person owns the legal, beneficial and equitable interest in the relevant shares or membership interests of that other Person.</p>
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⁵ **Note to Proposers:** The Department will consider identifying by name entities that are not otherwise capture by this provision that a Proposer wishes to exclude from the definition of Restricted Change in Ownership.

67.2	Notification of Changes in Ownership	<p>(a) Except with respect to any change in legal or beneficial ownership of any shares:</p> <ul style="list-style-type: none"> (i) that are listed on a recognized stock exchange; or (ii) that are issued pursuant to an employee or management incentive plan, <p>The OMC Contractor shall provide the Department with at least forty-five (45) days' prior written notice of any Change in Ownership.</p> <p>(b) Upon receipt of notice of a Change in Ownership from the OMC Contractor under <u>clause (a)</u> above, the Department shall inform the OMC Contractor within fifteen (15) Business Days if the Person to which the OMC Contractor plans to transfer legal or beneficial ownership of shares is a Prohibited Person under <u>clause (k)</u> of the definition of Prohibited Person.</p> <p>(c) The OMC Contractor shall reimburse the Department for all reasonable out-of-pocket expenses (including reasonable and proper fees of consultants and legal counsel) incurred by the Department in connection with its review of any Change in Ownership notified to it in accordance with <u>Section 67.2(a) (Notification of Changes in Ownership)</u> within thirty (30) days of receiving an invoice from the Department with respect to such costs.</p>
68.	Dispute Resolution	
68.1	Dispute Resolution Procedures	<p>(a) The Parties shall endeavor to resolve any Dispute that may arise between them through good faith negotiations.</p> <p>(b) Except as provided in <u>clause (c)</u> below, if any Dispute is not resolved to the mutual satisfaction of all Parties within thirty (30) days after written notification of such Dispute, or such longer time as is mutually agreed, the Dispute shall next be submitted in accordance with the following.</p> <ul style="list-style-type: none"> (i) If, despite good faith negotiations between the Parties, any Disputes are not resolved within thirty (30) days after written notification of such Dispute, then the Dispute shall be submitted administratively to non-binding mediation as set forth below. (ii) The Parties shall mutually select a private mediator to formally mediate the Disputes. If the Parties cannot mutually select a private mediator, the mediator shall be selected pursuant to the mediation rules established by the American Arbitration Association or other dispute resolution organization agreed to by the Parties. Non-binding mediation shall normally be scheduled within forty-five (45) calendar days of notification of the decision by either party to submit the Dispute to non-binding mediation. The Department and the OMC Contractor shall each pay one-half of the fees and administrative costs charged by the selected mediator. Other parties, such as Contractors, may be invited to the non-binding mediation as may be appropriate for the non-binding mediation. (iii) The Parties, to provide economies of scale, may mutually agree in writing to submit one or more Claims, whether or not factually related, to a single, non-binding mediation. In such event, time periods may be extended by

		<p>mutual written agreement to facilitate preparation for the non-binding mediation.</p> <p>(iv) If the Dispute has not been settled within forty-five (45) calendar days following written notification of the Dispute to non-binding mediation or within such other period that the Parties may agree in writing, such Dispute may be submitted to litigation by either party in accordance with <u>clause (b)(v)</u>; <i>provided, however</i>, that no litigation may be filed by either Party concerning any Claim or Dispute prior to using the procedure described in <u>clause (b)(i)</u>. This procedure is a condition precedent for any Party to commence a civil action for resolution of a Claim or Dispute.</p> <p>(v) Subject to <u>clause (c)</u> below, all litigation between the Parties arising out of or pertaining to a Dispute shall be filed, heard and decided in the General Court of Justice in Wake County, North Carolina, which shall have sole and exclusive jurisdiction and venue; <i>provided, however</i>, if an action must be brought in a federal forum, then it shall be brought and conducted solely and exclusively within the United States District Court for the Eastern District of North Carolina. Each Party shall bear its own attorney’s fees and costs in any dispute or litigation arising out of or pertaining to the OMC Agreement, and no Party shall seek or accept an award of attorney’s fees or costs.</p> <p>(c) After the performance of all of the OMC Contractor’s obligations under the Project Documents, if the OMC Contractor has not received payments it claims are owed under the Project Documents, then the provisions of North Carolina General Statutes § 136-29 shall apply and such provisions shall be made a part of the OMC Agreement and incorporated herein by reference. For purposes of clarity, the provisions of this <u>clause (c)</u> only apply to payment claims asserted after all of the OMC Contractor’s obligations are completed or satisfied under the Project Documents.</p>
68.2	Continuance of Work During Dispute	During the course of the dispute resolution process, the OMC Contractor will continue with the Work (including any Work that is the subject of the Dispute) in a diligent manner and without delay or otherwise conform to the Department’s decision or order, and will be governed by all applicable provisions of the OMC Agreement, and the Department shall continue to make payments of any amounts not in dispute pursuant to the terms of the OMC Agreement. Throughout any disputed Work, the OMC Contractor will keep complete records of extra costs and time incurred. The OMC Contractor will provide the Department access to these and any other records needed for evaluating the Dispute.
68.3	Costs of Dispute Resolution	Each Party will bear its own attorneys’ fees and costs in any Dispute arising out of or pertaining to the OMC Agreement, and neither Party may seek or accept an award of attorneys’ fees or costs, except as otherwise expressly provided in the OMC Agreement.
69.	Consequential Losses	(a) Neither Party will have the right to claim damages, including punitive and incidental damages, against the other Party for breach of the OMC Agreement, in tort or on any other basis whatsoever, to the extent that any loss claimed by either Party is for Indirect Losses.

		<p>(b) The Parties agree that the limitation in <u>clause (a)</u> will not apply to or limit either Party's right to recover from the other Party:</p> <ul style="list-style-type: none"> (i) any Losses of the OMC Contractor arising under the Key Contracts as originally executed (or as amended in accordance with the terms of the OMC Agreement), which are not of themselves Indirect Losses; (ii) any Losses (excluding defense costs) to the extent that they are covered by the proceeds of insurance required to be maintained pursuant to <u>Section 49 (Insurance)</u>, or to the extent the OMC Contractor is deemed to have self-insured the Loss; (iii) any Losses arising out of fraud, criminal conduct, intentional misconduct, recklessness or bad faith on the part of the relevant Party; (iv) amounts payable by the OMC Contractor to the Department under an indemnity set out in the OMC Agreement on account of any Third Party Claim against the Department; (v) amounts payable by the Department to the OMC Contractor pursuant to <u>Section 40 (Compensation Events)</u> and <u>Exhibit 6 (Compensation on Termination)</u>; (vi) any Liquidated Damages; or (vii) interest, late charges, fees, transaction fees and charges, penalties and similar charges that the OMC Agreement expressly states are due from the relevant Party. <p>Notwithstanding the foregoing, this <u>Section 69 (Consequential Losses)</u> shall not in any way be construed to limit the doctrine of sovereign immunity as applicable to the Department or the State.</p>
70.	Governing Law	The OMC Agreement will be governed and construed in accordance with the laws of the State of North Carolina without application of the State's choice of law provisions.
71.	Waiver of Jury Trial	<p>THE PARTIES HEREBY KNOWINGLY, IRREVOCABLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHTS THAT ANY MAY HAVE TO A TRIAL BY JURY WITH RESPECT TO ANY ACTION, PROCEEDING, COUNTERCLAIM OR DEFENSE BASED ON THE OMC AGREEMENT, OR ARISING OUT OF, UNDER OR IN ANY CONNECTION WITH THE OMC AGREEMENT, OR WITH RESPECT TO ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER ORAL OR WRITTEN) OR ACTIONS OF ANY PARTY HERETO RELATING TO THE OMC AGREEMENT. THIS PROVISION IS A MATERIAL INDUCEMENT FOR ALL PARTIES ENTERING INTO THE OMC AGREEMENT. THIS PROVISION APPLIES ONLY TO SUITS BETWEEN THE PARTIES ARISING OUT OF OR RELATED TO THE OMC AGREEMENT AND DOES NOT APPLY TO THIRD PARTY CLAIMS OR SUITS BY OR ON BEHALF OF THE PARTIES FOR PROJECT PROPERTY ACQUISITION AND/OR CONSTRUCTION CONTRACT CLAIMS AND DEFENSES. Each of the Parties (a) certifies that no representative, agent, attorney or any other Person has represented, expressly or otherwise, that such other Person would not, in the event of any suit, action or proceedings relating to the OMC Agreement, seek to enforce the foregoing waiver and (b) acknowledges that it has been induced to enter into the OMC</p>

		Agreement by, among other things, the mutual waivers and certifications in this <u>Section 71 (Waiver of Jury Trial)</u> .
72.	Financial Obligations of the Department	<p>(a) Any and all payments by the State are expressly contingent upon and subject to the appropriation, allocation, and availability of funds to the Department. If the OMC Agreement is funded in whole or in part by federal funds, the Department’s performance and payment shall be subject to and contingent upon the continuing availability of said federal funds for the purposes of the Project Documents. If the Term extends into fiscal years subsequent to that in which it is approved, such continuation of the Project Documents is expressly contingent upon the appropriation, allocation and availability of funds by the North Carolina General Assembly for the purposes set forth in the Project Documents. If funds to effect payment are not available, the Department will provide written notification to the OMC Contractor. This <u>Section 72 (Financial Obligations of the Department)</u> applies to all monetary obligations of the Department set forth in the Project Documents, notwithstanding any contrary provisions of the Project Documents.</p> <p>(b) Pursuant to North Carolina General Statutes § 143C-6-11(i), the following provisions of North Carolina General Statutes § 143C-6-11(h) are incorporated verbatim in the OMC Agreement as follows: “Amounts Encumbered – Transportation project appropriations may be encumbered in the amount of allotments made to the Department of Transportation by the Director for the estimated payments for transportation project contract work to be performed in the appropriation fiscal year. The allotments shall be multiyear allotments and shall be based on estimated revenues and shall be subject to the maximum contract authority contained in subsection (c) above. Payment for transportation project work performed pursuant to contract in any fiscal year other than the current fiscal year is subject to appropriations by the General Assembly. Transportation project contracts shall contain a schedule of estimated completion progress, and any acceleration of this progress shall be subject to the approval of the Department of Transportation provided funds are available. The State reserves the right to terminate or suspend any transportation project contract, and any transportation project contract shall be so terminated or suspended if funds will not be available for payment of the work to be performed during that fiscal year pursuant to the contract. In the event of termination of any contract, the contractor shall be given a written notice of termination at least 60 days before completion of scheduled work for which funds are available. In the event of termination, the contractor shall be paid for the work already performed in accordance with the contract specifications.” For purposes of this <u>Section 72 (b) (Financial Obligations of the Department)</u>, the term “schedule of estimated completion progress” means the payment terms set forth in <u>Section 37 (Payments to OMC Contractor)</u> and the term “contract specifications” means the Project Documents.</p> <p>(c) Notwithstanding anything herein to the contrary, the Parties acknowledge and agree that the unavailability of funds for the Department to comply with its payment obligations shall in no event diminish, reduce or otherwise affect the Department’s responsibility for moneys owed by the Department under the Project Documents or the OMC Contractor’s ability to exercise any rights or remedies under the Project Documents, including its rights to termination compensation pursuant to <u>Exhibit 6 (Compensation on Termination)</u>.</p>

73.	Taxes	The OMC Contractor is solely responsible for the payment of taxes accrued or arising out of the performance of its obligations or the exercise of its rights pursuant to the OMC Agreement.
74.	No Petition of FCC	The OMC Contractor agrees not to petition the FCC, the North Carolina Utilities Commission, or equivalent Governmental Entity to modify, reform, preempt, enforce, or otherwise affect the terms of the OMC Agreement without the prior written consent of the Department (which consent the Department may withhold, delay or condition in its sole discretion). The OMC Contractor agrees that the Department is not subject to “one-touch-make-ready” laws or regulations administered by the FCC or any Governmental Entity in the State.
75.	Cooperation with Other Contractors	
75.1	Duties of the Department	<p>The Department shall:</p> <ul style="list-style-type: none"> (a) notify the OMC Contractor in advance of the identity of any Other Contractor and of the nature of the work or services which such Other Contractor is to perform on the Project Site; (b) ensure that each Other Contractor is contractually obligated to cooperate with the OMC Contractor and agrees to the activities to be carried out by the OMC Contractor and any Other Contractor in order to ensure that the OMC Contractor and the other Contractor can perform their respective duties: <ul style="list-style-type: none"> (A) to the Department; and (B) in accordance with Applicable Law; and (c) prior to any Other Contractor carrying out its work or services on the Project Site, cause any such Other Contractor to provide the following information to the OMC Contractor: <ul style="list-style-type: none"> (i) a description of the type, design and duration of the work or services to be carried out by the Other Contractor; (ii) the parts of the Project Site subject to the work or services to be carried out by the Other Contractor; and (iii) contact details for the relevant site manager of the Other Contractor.
75.2	Duties of OMC Contractor	<p>The OMC Contractor shall:</p> <ul style="list-style-type: none"> (a) fully cooperate at all times with Other Contractors performing work or services on the Project Site so that: <ul style="list-style-type: none"> (i) the OMC Contractor and the Other Contractors can perform their respective duties to the Department without interference and in accordance with Applicable Law, and (ii) the Department is not in breach of its obligations under the OMC Agreement; and

		<p>(b) allow any Other Contractor reasonable access to the Project Site and the Broadband Infrastructure at such times as such Other Contractor may reasonably require for the performance of its obligations under the terms of its contracts with the Department;</p> <p>(c) coordinate with the Other Contractors in respect of OMC Contractor's obligations under the OMC Agreement that interface with the services to be provided by the Other Contractors under the terms of their contracts with the Department; and</p> <p>(d) provide notice to the Department of any problems which the undertaking or intended undertaking of any work or services of the Other Contractors may have on carrying out the Work of the OMC Contractor as soon as possible after becoming aware of such problems.</p>
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LIST OF EXHIBITS

Exhibit 1	Definitions
Exhibit 2	Form of Lenders Direct Agreement
Exhibit 3	Reserved
Exhibit 4	Reserved
Exhibit 5	Key Personnel
Exhibit 6	Compensation on Termination
Exhibit 7	Principles for Calculation of Change in Costs

EXHIBIT 1

DEFINITIONS

Capitalized terms and acronyms used in the OMC Terms have the meanings given in this Exhibit 1 (Definitions).

“**Abandon**” means to abandon all or a material part of the Project, which abandonment will be deemed to have occurred if no significant Work (taking into account any Compensation Event or Relief Event) on the Project is performed for a continuous period of more than sixty (60) days.

“**Account Balances**” means, at the Early Termination Date, all amounts standing to the credit of any bank account held by or on behalf of the OMC Contractor, or the value of any letter of credit issued in substitution for the maintenance of a reserve in any bank account previously held by the OMC Contractor.

“**Additional Equity Investment**” means an Equity Investment made solely by the Qualified Investors after the Closing Date that is not a Committed Equity Investment, or otherwise contractually committed to by the relevant Qualified Investors, as of the Closing Date.

“**Affected Party**” is defined in the definition of “Force Majeure Event”.

“**Affiliate**” means, in relation to any Person, any entity which, directly or indirectly, through one or more intermediaries:

- (a) has a ten percent (10%) or more voting or economic interest in such Person; or
- (b) Controls, is Controlled by, or is under common Control with such Person.

“**Agreement**” means the OMC Agreement (including all its Exhibits), as amended from time to time.

“**Annual Financial Performance Report**” is defined in Section 63(b) (Financial Performance Reporting; Audits).

“**Annual Guaranteed Revenue Share**” means the guaranteed payments that the OMC Contractor will pay to the Department (in nominal U.S. dollars) annually throughout the Term. The Annual Guaranteed Revenue Share payments are committed by the OMC Contractor and must be paid in full, each year, regardless of the amount of revenues actually generated by the Commercial Activities.⁶

“**Annual Speculative Net Cash Flow Percentage**” means [●] percent.⁷

“**Annual Speculative Net Cash Flow Share**” means the annual guaranteed revenue sharing payments the OMC Contractor will pay to the Department (in nominal U.S. dollars) calculated as follows: for a given year of the Term, Annual Speculative Net Cash Flow Percentage multiplied by the actual positive Net Commercialization Cash Flows generated by the OMC Contractor in such year.

⁶ **Note to Proposers:** For clarity, the OMC Agreement will set forth the amount of the Annual Guaranteed Revenue Share, as shown in the selected proposer’s Commercialization Price Proposal. The amount of the Annual Guaranteed Revenue Share is committed by the OMC Contractor and cannot be changed during the Term, regardless of the OMC Contractor’s actual financial performance.

⁷ **Note to Proposers:** The revenue sharing percentage set out by the selected proposer in its Commercialization Price Proposal to be inserted. Such percentages are committed by the OMC Contractor and cannot be changed during the Term, regardless of the OMC Contractor’s actual financial performance.

“**Applicable Law**” means any statute, law, code, regulation, ordinance, rule, common law, judgment, judicial or administrative order, decree, directive, or other requirement having the force of law or other governmental restriction (including those resulting from the initiative or referendum process) or any similar form of decision of or determination by, or any interpretation or administration of any of the foregoing by, any Governmental Entity which is applicable to the Project, Work or any relevant Person, whether taking effect before or after the date of the OMC Agreement. Applicable Law excludes Governmental Approvals.

“**Appraiser**” is defined in Section 5.1(a) (*Determination of Fair Market Value*) of Exhibit 6 (Compensation on Termination).

“**Assumed Transfer Date**” means [*the dates on which the OMC Contractor assumes each Network Segment will achieve Substantial Completion, thus allowing the OMC Contractor to begin the O&M Work and Commercial Activities*].

“**Base Case Financial Model**” means the base case financial model appended to the OMC Agreement (as updated from time to time in accordance with the OMC Agreement).

“**Broadband Infrastructure**” means, collectively, the Department Infrastructure and the OMC Contractor Infrastructure.

“**Business Day**” means any day that is not a Saturday, a Sunday or a federal public holiday.

“**Calendar Year**” means the consecutive 12-month period starting on January 1 and ending on December 31.

“**Capital Expenditure**” means any expenditure which is treated as a capital expenditure in accordance with GAAP or equivalent auditing standards utilized and generally accepted in the country of incorporation of such party.

“**CERCLA**” means the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9601-9675).

“**Change in Costs**” means, with respect to any Relevant Event, the effect of that Relevant Event (whether of a one-off or recurring nature, and whether positive or negative) upon the actual or anticipated costs, losses or liabilities of the OMC Contractor, including, as relevant, the following:

- (a) the reasonable costs of complying with the requirements of Section 40 (Compensation Events), Section 43 (Changes in Law), Section 44 (Department Changes), or Section 45 (OMC Contractor Changes), including the reasonable costs of preparation of designs and estimates;
- (b) the costs of continued employment of, or making redundant, staff who are no longer required;
- (c) the costs of employing additional staff;
- (d) reasonable professional fees;
- (e) the effects of costs on implementation of any insurance reinstatement in accordance with the OMC Agreement, including any adverse effect on the insurance proceeds payable to the OMC Contractor (whether arising from physical damage insurance or business

interruption insurance (or their equivalent)) with respect to that insurance reinstatement and any extension of the period of implementation of the insurance reinstatement;

- (f) operating costs, or life cycle, maintenance or replacement costs;
- (g) Capital Expenditure;
- (h) any deductible or increase in the level of deductible, or any increase in premium under or with respect to any insurance policy; and
- (i) Losses;

provided, that in no circumstances will any Change in Costs include:

- (A) any impact to the OMC Contactor's revenues from Commercial Activities, financing costs or costs arising from the OMC Contractor's obligations to any Commercial End-User, including but not limited to: (I) any costs or other Losses that arise in consequence of the OMC Contractor's receiving Payments or revenues from Commercial Activities later than the date that it would have received them in the absence of the Relevant Event; (II) the loss of Commercial Revenues; or (III) any other Loss or consequential damage that arises in consequence of the OMC Contractor's loss or delayed receipt of revenues from Commercial Activities; and
- (B) any cost of the OMC Contractor described in clauses (a) through (i) (inclusive) of the definition of Change in Costs to the extent such cost is the result of the OMC Contractor's compliance with any authorization, requirement, or order issued pursuant to Section 214(d) of the Telecommunications Act or (y) any applicable State law.

“Change in Law” means the introduction or repeal (in whole or in part) of, the amendment, alteration or modification to, or the change in interpretation of (in each case including, to the extent applicable, by retroactive effect), any Applicable Law, standards, practices or guidelines issued or published by any Governmental Entity that occur at any time after the Closing Date and that are either:

- (a) binding on the OMC Contractor; or
- (b) if not binding on the OMC Contractor, both (i) typically complied with in the construction or relevant maintenance industries and (ii) necessary in order to comply with Good Industry Practice or the provisions of the OMC Agreement,

excluding, however, any such introduction, repeal, amendment, alteration, modification or change in relation to:

- (i) the Telecommunications Act or any Applicable Law of the State, to the extent any such introduction, repeal, amendment, alteration, modification or change (I) results in (x) the OMC Contractor being designated a common carrier, (y) the application of common carrier regulations to the Project, or (z) the illegality of the location or operation of any Commercial Lateral, or (II) applies to the OMC Contractor or the Project by virtue of the OMC Contractor's election to become a common carrier under the Telecommunications Act or any Applicable Law of the State prior to the occurrence of such Change in Law;

- (ii) any Applicable Law of the State passed or adopted but not yet effective as of the Closing Date; and
- (iii) any federal, State, or local tax law of general application (it being understood that any change in federal, State, or local tax laws shall not be deemed of general application if such change is solely directed at, and the effect of which is solely borne by, the OMC Contractor or similar projects).

“Change in Ownership” means:

- (a) any sale, transfer or disposal of any legal, beneficial or equitable interest in any or all of the shares or membership interests in the OMC Contractor or any Related Entity;
- (b) with respect to any of the shares or membership interests referred to in clause (a), any change in the direct or indirect control over:
 - (i) the voting rights conferred on those shares or membership interests;
 - (ii) the right to appoint or remove directors; or
 - (iii) the right to receive dividends or distributions;
- (c) any other arrangements that have or may have or which result in the same effect as clause (a) or clause (b); and
- (d) any transaction (which, for the avoidance of doubt, includes any transaction contemplated but not closed) within the meaning of 31 CFR Section 800.224.

“Closing Date” means the date on which all of the conditions precedent set out in Section 3 (Conditions Precedent to Closing Date) have been satisfied or otherwise waived in accordance with the OMC Agreement.

“Collateral Agent” means the financial institution listed or otherwise designated to act as trustee or agent on behalf or at the direction of the Lenders in the Finance Documents with respect to the Project Debt.

“Commercial Activities” means any lawful sale of the following services to extent such services are conducted over the OMC Contractor Infrastructure: (i) broadband information services, telecommunications, or other similar services, (ii) access to dark fiber optic cable, and (iii) access to Conduit for purposes of supporting digital data communications.

“Commercial Agreement” means an agreement between the OMC Contractor and a Commercial End-User for the right of use of any portion of the OMC Contractor Infrastructure or any substantially similar agreement for the use of the OMC Contractor Infrastructure.

“Commercial Agreements Register” is defined in Section 8(e) (Certain Covenants and Confirmations).

“Commercial End-User” means any Person that contracts with the OMC Contractor pursuant to a Commercial Agreement for access to OMC Contractor Fibers.

“Commercial Equity Investment” means, in the aggregate, (a) any Equity Investment and (b) any Deferred Equity Amounts.

“Commercial Lateral” means any physical extension of the OMC Contractor Infrastructure consisting of fiber optic cable, conduit, and/or junction boxes within the Department Right-of-Way for the purpose of conducting Commercial Activities.

“Compensation Event” means any of the following events:

- (a) any material breach of an obligation under the OMC Agreement by the Department;
- (b) any violation of Applicable Law by the Department;
- (c) any Qualifying Change in Law;
- (d) any Required Action taken by the Department in the circumstances described in Section 62.4 (Step-In without OMC Contractor Breach);
- (e) any damage or material interruption to, or interference with, the O&M Work caused by any capital project (other than the Project) carried out by any Governmental Entity (other than the Department) or its contractor on or in the vicinity of the Project Site, excluding any Utility Adjustment;
- (f) the failure of a Network Segment to achieve Substantial Completion (as defined in the DB Contract) on or before the Assumed Transfer Date for such Network Segment;
- (g) the OMC Contractor’s non-acceptance of any Network Segment pursuant to Section E-1.1 of the RFP for such Network Segment’s failure to perform as required in Section E-1.1 of the RFP; or
- (h) the issuance of any preliminary or permanent injunction or temporary restraining order or other similar order, legal restraint or prohibition by a Governmental Entity of competent jurisdiction under Applicable Law that materially and adversely affects the Department’s or the OMC Contractor’s performance under the OMC Agreement;

except, in each case, to the extent attributable to any breach of the OMC Agreement, Applicable Law or any Governmental Approval by, or any negligent act or negligent omission of, a OMC Contractor-Related Entity.

“Conduit” means the duct encasing the Department Fibers or the OMC Contractor Fibers (as applicable), as further described in the Technical Requirements.

“Contract” means any contract, subcontract or other form of agreement to perform any part of the Work or provide any materials, equipment or supplies for any part of the Work, or any such agreement, supplement or amendment at a lower tier, between a Contractor and its lower tier Contractor or a Supplier and its lower tier Supplier, at all tiers.

“Contractor” means any Person with whom the OMC Contractor has entered into any Contract to perform any part of the Work or provide any materials, equipment or supplies for the Project, on behalf of the OMC Contractor, and any other Person with whom any Contractor has further subcontracted any part of the Work, at all tiers.

“**Control**” means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

“**Data Room**” or “**DR**” means the electronic data room maintained by the Department for the Project during the procurement of the Project, as further described in Part B-1.5 of the RFP.

“**Day**” means a calendar day.

“**Deferred Equity Amounts**” means, on any date, any amount of unfunded equity that (a) has been committed to the OMC Contractor as of the Closing Date (including commitments to provide an Equity Investment or Equity Member Debt) and (b) is shown to be utilized in the Base Case Financial Model prior to the first Transfer Date.

“**DB Contract**” means the design-build contract by and between the DB Contractor and the Department for the design and construction of the Project.

“**DB Contractor**” means [●], who is responsible for the design and construction of the Project pursuant to the DB Contract by and between the DB Contractor and the Department.

“**Department**” means the North Carolina Department of Transportation.

“**Department Conduit**” means the duct encasing the Department Fibers, as further described in the Technical Requirements, and as otherwise installed, modified, or expanded pursuant to the OMC Agreement.

“**Department Connected Vehicle Sites**” is defined in Section 11(a) (*Cellular Connected Vehicle Sites*).

“**Department Default**” is defined in Section 57.1 (*Department Default*).

“**Department Default Notice**” is defined in Section 57.2(a) (*Notice and Cure Periods*).

“**Department Fibers**” means any fiber optic strands installed in the Project Conduit and reserved for dedicated use by the Department, as required in the Technical Requirements.

“**Department Infrastructure**” means, collectively:

- (a) the Department Conduit;
- (b) the Department Fibers;
- (c) the Department Junction Boxes; and
- (d) the Department Connected Vehicle Sites.

“**Department Junction Boxes**” means:

- (a) any junction boxes installed on the Department Right-of-Way and designated as available for the Project in the Data Room as of the Closing Date;
- (b) any junctions boxes to be installed by the Department on the Department Right-of-Way as part of a Department Project after the Closing Date;

- (c) any junction boxes designed and installed in connection with the Department Fibers in accordance with the Technical Requirements,

in each case, as otherwise installed, modified, or expanded pursuant to the OMC Agreement.

“Department-Provided Approvals” means [*permits and other governmental approvals to be provided or obtained by the Department to be listed*].

“Department Right-of-Way” means the real property owned by the Department, which extends from limited access right-of-way line to limited access right-of-way line, as shown in the plans, documents and the geographic information system maps included in the Data Room.

“Department Termination Notice” is defined in Section 58.5(a) (Termination for OMC Contractor Default).

“Department Termination Sum” is defined in Section 1 (*Compensation on Termination for Convenience, Department Default, or Court Ruling*) of Exhibit 6 (Compensation on Termination).

“Design Documents” means all drawings (including plans, profiles, cross-sections, notes, elevations, typical sections, details and diagrams), specifications, reports, studies, working drawings, shop drawings, calculations, electronic files, records and submittals necessary for, or related to, the design of the Project.

“Discriminatory Change in Law” means a Change in Law, the terms of which apply to:

- (a) the Project, or projects substantially the same as the Project;
- (b) private operators of government-owned broadband fiber optic networks; or
- (c) the OMC Contractor or any Key Contractor,

provided that in each case, such Change in Law is not of general application to other Persons.

“Dispute” means any dispute, disagreement or controversy between the Department and the OMC Contractor concerning their respective rights and obligations under the OMC Agreement, including with respect to any claim, alleged breach or failure to perform and any remedy.

“Dispute Resolution Procedures” means the procedures for resolving disputes in Section 68 (Dispute Resolution).

“Distributions” means, whether in cash or in kind, any:

- (a) dividend or other distribution with respect to share capital;
- (b) reduction of capital, redemption or purchase of shares or any other reorganization or variation of share capital;
- (c) payments made by the OMC Contractor under the Equity Member Funding Agreement (whether of principal, interest, breakage costs or otherwise);
- (d) payment, loan, contractual arrangement or transfer of assets or rights directly to the extent that, in each case, it was put in place after the Closing Date and was neither in the ordinary course of business nor on reasonable commercial terms; or

- (e) receipt of any other benefit which is not received in the ordinary course of business and not on reasonable commercial terms.

“**Dollars**” or “**\$**” means the lawful money of the United States of America.

“**Early Termination**” means the termination of the OMC Agreement for any reason prior to the Expiry Date.

“**Early Termination Date**” means the effective date of termination of the OMC Agreement for any reason prior to the Expiry Date, as specified in the relevant provisions of Section 56 (Termination for Convenience), Section 57 (Termination for Department Default), Section 58 (Termination for OMC Contractor Default), Section 59 (Termination for Extended Force Majeure), Section 60 (Termination for Uninsurability) or Section 61 (Termination by Court Ruling or for Materially Adverse FCC Order).

“**Emergency**” means any unplanned event affecting the Project that:

- (a) presents an immediate or imminent risk of:
 - (i) death or injury to any individual;
 - (ii) structural failure;
 - (iii) damage to a third party’s property or equipment;
 - (iv) damage to the Environment; or
 - (v) threat to the long-term integrity of any part of the Project;
- (b) is declared a state of emergency pursuant to state or federal law; or
- (c) is recognized or declared by any law enforcement agency or any other Governmental Entity (other than the Department) as an Emergency.

“**Environment**” means air, soils, surface waters (including wetlands), groundwater, land, stream sediments, surface or subsurface strata, biological resources, including endangered, threatened and sensitive species, natural systems, including ecosystems, and cultural, historic, archaeological and paleontological resources.

“**Equity Investment**” means:

- (a) any form of direct investment by Equity Members, including the purchase of newly issued equity shares or other equity interests in or the provision of Equity Member Debt to the OMC Contractor; and
- (b) any payment under, or draws on, any instrument guaranteeing the provision of Deferred Equity Amounts, including but not limited to any draws by or on behalf of the OMC Contractor of any letter(s) of credit issued by or for the account of any Equity Member with respect to Deferred Equity Amounts.

“**Equity IRR**” means the nominal post-tax internal rate of return on Equity Investment (on a cash-on-cash basis) over the full Term calculated using the Base Case Financial Model, as the discount rate that, when applied to the Distributions gives a net present value equal to the net present value of the Equity Investment. For purpose of this definition:

- (a) the phrase post-tax refers only to U.S. federal, state, and local income tax liabilities of the OMC Contractor (or, if the OMC Contractor is a pass-through entity for tax purposes, its Equity Members) and specifically excludes (i) any foreign income tax and other tax of any kind, and (ii) any federal, state, or local withholding tax, including any tax that the OMC Contractor is obligated to withhold on Distributions (whether actual or constructive) or other payments or allocations to Equity Members or holders of debt of or equity interests in an Equity Member under 26 U.S.C. §§ 1441 – 1446, despite 26 U.S.C. § 1461;
- (b) in calculating the Equity IRR, a single level of corporate income taxes for a regularly taxed, U.S. organized, domestic C corporation should be taken into account; and
- (c) the phrase cash-on-cash basis means, with respect to the calculation of a financial return, the calculation of such financial return on the basis of cash actually received in relation to cash actually invested (as opposed to cash committed).

“**Equity Member**” means each Person that directly holds an equity interest in the OMC Contractor.

“**Equity Member Debt**” means any obligations created, issued or incurred by the OMC Contractor for borrowed money that:

- (a) is owed to any Equity Members, any Related Entity, Qualified Investors or any Affiliate of an Equity Member or Affiliate of the OMC Contractor, as applicable; and
- (b) is subordinated in priority of payment and security to all Project Debt held by Persons who are not Equity Members, other than any mezzanine debt that is provided by a party referred to in clause (a) on an arm’s length basis.

“**Equity Member Funding Agreements**” means any loan agreement, credit agreement or other similar finance agreement or subordination agreement providing for or evidencing Equity Member Debt.

“**Expiry Date**” means the date that is the twenty-fifth (25th) anniversary of the Transfer Date for the final Network Segment, as such date may be extended pursuant to Section 2(b) (Term).

“**Fair Market Value**” means, with respect to the OMC Contractor’s Interest, the following, determined pursuant to the procedures set forth in Section 5.1 (*Determination of Fair Market Value*) of Exhibit 6 (Compensation on Termination):

- (a) The amount a willing and able buyer would offer, and a willing and able seller would accept, for the purchase and sale of the OMC Contractor’s Interest in an arm’s length transaction, assuming:
 - (i) neither party is under economic compulsion or has special bargaining power;
 - (ii) subject to clause (e) below, the buyer possess all information in the possession of the OMC Contractor relating to the Project, its condition, the Work, the Project Documents, and the revenues and expenses of the OMC Contractor;
 - (iii) the event or circumstance that requires determination of fair market value had not occurred and accordingly the OMC Contractor’s Interest would remain in effect and the OMC Contractor would remain a going concern for the remainder of the

Term and would not receive or be entitled to receive any compensation for fair market value from the Department under the OMC Agreement;

- (iv) subject to clause (e) below, there exists no prior, known or reasonably foreseeable unusual temporary event or circumstance specific to the Project (e.g., damage or destruction to a material portion of the Broadband Infrastructure) or to the project financing market for similar transactions (as distinguished from general market, economic and environmental conditions), positive or negative, except to the extent such an event or circumstance is not yet rectified and affects the existing or future condition or continued viability of the Project or the cost to rectify and recover, in which case Fair Market Value will reflect the cost of such event or circumstance, positive or negative (if such event or circumstance consists of damage or destruction to a material portion of the Broadband Infrastructure, Fair Market Value will reflect (x) the estimated cost to repair and replace the damage or destroyed portion(s) of the Broadband Infrastructure and (y) the loss of revenue during the estimated time to repair and replace the damaged or destroyed portion(s) of the Broadband Infrastructure, and the OMC Contractor will retain the right to insurance coverage for loss occasioned thereby);
 - (v) there would occur no further unusual temporary event or circumstance specific to the Project (e.g., damage or destruction to a material portion of the Broadband Infrastructure) or the project financing market for similar transactions (as distinguished from general market, economic and environmental conditions), positive or negative, not known or reasonably foreseeable at the time of appraisal;
 - (vi) there would occur no cancellation or renegotiation of Commercial Agreements in effect, provided that the parties agree that, without double-counting, the Fair Market Value of gross revenue which has been received but not earned (in accordance with US GAAP) under Commercial Agreements (if any) will be zero.
 - (vii) there would occur no future Change in Law not known or reasonably foreseeable at the time of appraisal;
 - (viii) there exists no adverse effect from a Department Default, and both Parties would generally continue to perform their respective obligations under the Project Documents for the remainder of the Term absent early termination; and
 - (ix) the buyer is required to fund the Deferred Equity Amounts, if required.
- (b) Reserved.
 - (c) Reserved.
 - (d) Fair Market Value excludes the value of cash in accounts held by or on behalf of the OMC Contractor, including in Lender accounts and reserve accounts.
 - (e) The effect of any Compensation Event occurring prior to the determination of Fair Market Value shall be addressed as follows:
 - (i) to the extent the OMC Contractor previously received payment in respect of a Compensation Event for a Change in Costs accruing from and after the Early

Termination Date from such Compensation Event, Fair Market Value shall not further compensate the OMC Contractor for such impacts and, accordingly, Fair Market Value shall be determined by taking into account the Change in Cost accruing from and after the Early Termination Date;

- (ii) to the extent a compensation amount in respect of a Compensation Event has previously been determined (by mutual agreement, the Dispute Resolution Procedures, or otherwise) and would be payable to the OMC Contractor after the Early Termination Date for a Change in Costs accruing from and after the Early Termination Date from such Compensation Event, Fair Market Value shall include the present value of the right to such further payments (and the OMC Contractor shall have no other claim from such future Change in Costs); and
- (iii) to the extent no compensation amount in respect of a Compensation Event has previously been determined, then Fair Market Value shall be determined as if the Compensation Event had not occurred and therefore is unaffected by any resulting Change in Costs accruing from and after the Early Termination Date (and the OMC Contractor shall have no other claim for such future Change in Costs).

“**FCC**” means the Federal Communications Commission.

“**Federal Requirements**” means the relating to the use of federal-aid funds on the Project set out in Appendix Part A to the RFP.

“**Final Warning Notice**” is defined in Section 58.2(b)(i) (Final Warning Notice).

“**Finance Documents**” means the Funding Agreements and the Security Documents.

“**Force Majeure Event**” means the occurrence of any of the following events after the date of the OMC Agreement that directly causes either Party (the “Affected Party”) to be unable to comply with all or a material part of its obligations under the OMC Agreement:

- (a) war, civil war, invasion, violent act of foreign enemy or armed conflict;
- (b) nuclear, chemical or biological contamination unless the source or cause of the contamination is brought to or near the Project Site by the OMC Contractor or an OMC Contractor-Related Entity, or is a result of any breach by the OMC Contractor of the terms of the OMC Agreement;
- (c) ionizing radiation unless the source or cause of the ionizing radiation is brought to or near the Project Site by the OMC Contractor or an OMC Contractor-Related Entity, or is as a result of any breach by the OMC Contractor of the terms of the OMC Agreement;
- (d) an act of Terrorism; or
- (e) epidemic, pandemic, or Quarantine Restriction.

“**Force Majeure Termination Notice**” is defined in Section 42.3(a) (Failure to Agree; Right to Terminate).

“**Funding Agreements**” means the documents listed in [●] (*Funding Agreements*) of [●] (*Finance Documents*), together with any other document designated by the Parties (acting jointly) as a Funding Agreement. The Equity Member Funding Agreements and the Commercial Agreements will not be classified as “Funding Agreements” for the purposes of this Agreement.

“**GAAP**” means Generally Accepted Accounting Principles in the U.S. currently in effect.

“**General Change in Law**” means a Change in Law that is not a Discriminatory Change in Law.

“**Good Faith**” means observance of reasonable commercial standards of fair dealing in a given trade or business.

“**Good Industry Practice**” means the exercise of the degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from time to time from a skilled and experienced designer, engineer, constructor, maintenance contractor or operator or developer seeking in Good Faith to comply with its contractual obligations, Applicable Law and Governmental Approvals, using accepted standards and criteria for design, construction, and repair normally used on similar projects in the same locality, and engaged in the same type of undertaking in the same locality under similar circumstances and conditions, including environmental conditions.

“**Governmental Approval**” means all approvals, permits, permissions, consents, licenses, certificates (including sales tax exemption certificates) and authorizations (whether statutory or otherwise) which are required from time to time in connection with the Project to be issued by the Department or any Governmental Entity.

“**Governmental Entity**” means the government of the United States of America, the State, the cities and counties within the State and any other agency, or subdivision of any of the foregoing, including any federal, state, or municipal government, and any court, agency, special district, Department or other authority exercising executive, legislative, judicial, regulatory, administrative or taxing functions of, or pertaining to, the government of the United States of America, the State or the cities and counties within the State. “Governmental Entity” does not include the Department and, with respect to any the Compensation Event described in clause (n) of the definition thereof, “Governmental Entity” does not include the FCC or the North Carolina Utilities Commission or any court that enforces an order of the FCC or the North Carolina Utilities Commission.

“**Guaranteed Upfront Payment**” means the guaranteed payment that the OMC Contractor must pay in full to the Department pursuant to the terms of the Agreement.⁸

“**Handback Requirements**” means the asset condition and preventive maintenance requirements set forth in Part E-1.1 of the RFP.

“**Hazardous Materials**” means any element, chemical, compound, mixture, material or substance, whether solid, liquid or gaseous, which at any time is defined, listed, classified or otherwise regulated in any way under any Applicable Law (including CERCLA), or any other such substances or conditions (including mold and other mycotoxins, fungi or fecal material) which may create any unsafe or hazardous condition.

⁸ **Note to Proposers:** For clarity, the OMC Agreement executed by the parties will set forth the amount of the Guaranteed Upfront Payment, as shown in the selected proposer’s Commercialization Price Proposal. The amount of the Annual Guaranteed Upfront Payment is committed and cannot be changed following the submission of Commercialization Price Proposals.

“Hedging Agreements” means any Finance Documents entered into for the purposes of hedging the OMC Contractor’s exposure to floating rate interest risk.

“Hedging Liabilities” means all amounts due from the OMC Contractor to the Lenders by reason of the early termination of any Hedging Agreements.

“Hedging Receipts” means all amounts (if any) payable by the Lenders to the OMC Contractor by reason of the early termination of any Hedging Agreements.

“I-95/U.S. 70 Network” means the fiber optic network along the I-95 and U.S. 70 corridors, as further described in Part B-1.4 of the RFP.

“Indemnified Parties” means the Department, its officials, officers, employees and agents.

“Indirect Losses” means loss of profits, loss of use, loss of production, inefficiencies, loss of business, disruption, loss of business opportunity, acceleration, or any claim for consequential loss or for indirect loss of any nature but excluding any of the same that relate to payments expressly provided for under the OMC Agreement.

“Initial Commercial End-User” means the Commercial End-User that is a counterparty to a Commercial Agreement.

“Initial Facilities Installation Proposal” means an initial proposal from any Person other than the OMC Contractor to lease, construct, or operate facilities on, over, or under the Department Right-of-Way for purposes of (i) selling bandwidth, telecommunication, or other similar services, (ii) selling access to dark fiber optic cable, or (iii) selling access to conduit for the purpose of supporting digital data communications.

“Initial Warning Notice” is defined in Section 58.2(a)(i) (Initial Warning Notice).

“Insolvency Event” means with respect to any Person:

- (a) any involuntary bankruptcy, insolvency, liquidation, company reorganization, restructuring, suspension of payments, scheme of arrangement, appointment of provisional liquidator, receiver or administrative receiver, resolution or petition for winding-up or similar proceeding, under any Applicable Law, in any jurisdiction, except if the same has been dismissed within sixty (60) days;
- (b) any voluntary bankruptcy, insolvency, liquidation, company reorganization, restructuring, suspension of payments, scheme of arrangement, appointment of provisional liquidator, receiver or administrative receiver, resolution or petition for winding-up or similar proceeding, under any Applicable Law, in any jurisdiction; or
- (c) any general inability on the part of that Person to pay its debts as they fall due.

“Insurance Proceeds” means all proceeds from insurance payable to the OMC Contractor (or that should have been payable to the OMC Contractor but for the OMC Contractor’s breach of any obligation under the OMC Agreement to take out or maintain such insurance) on or after the Early Termination Date.

“Key Assets” means all assets and rights to enable the Department or a successor contractor to own, operate and maintain the Project in accordance with the OMC Agreement, including:

- (a) any buildings or other structures;
- (b) any core equipment;
- (c) any books, records or other documents (including operation and maintenance manuals, health and safety manuals and other know-how);
- (d) any spare parts, tools and other assets (together with any warranties with respect to assets being transferred);
- (e) to the extent required in accordance with Section 64 (Intellectual Property), any Work Product; and
- (f) any contractual rights.

“Key Contract” means any contract for O&M Work.

“Key Contractor” means the contractual counterparty to the OMC Contractor under any Key Contract.

“Key Personnel” means those individuals listed in Exhibit 5 (Key Personnel) and any Persons who replace such individuals in accordance with Section 30 (Key Personnel).

“Lender” means any Person that:

- (a) provides Project Debt, together with their successors and assigns; or
- (b) is appointed by any Person referred to in clause (a) as its agent or trustee in connection with the Project Debt.

“Lenders Direct Agreement” means the agreement substantially in the form attached as Exhibit 2 (Form of Lenders Direct Agreement) by and among the Department, the OMC Contractor, and the Lender (or if there is more than one Lender, the Collateral Agent on behalf of the Lenders).

“Lenders’ Liabilities” means, at the relevant time, the aggregate of (without double-counting):

- (a) all principal, interest (including default interest under the Finance Documents, but with respect to default interest, only to the extent that it arises as a result of the Department making any payment later than the date that it is due under the OMC Agreement or any other default by the Department under the OMC Agreement), banking fees and premiums on financial insurance policies, costs and expenses and other amounts properly incurred owing or outstanding to the Lenders by the OMC Contractor under or pursuant to the Finance Documents on the Early Termination Date, including any prepayment costs, make-whole amounts and breakage costs; plus
- (b) Hedging Liabilities; minus
- (c) Hedging Receipts.

“Liquidated Damages” has the meaning set forth in Section 39 (Liquidated Damages).

“**Losses**” means any loss, damage, injury, liability, obligation, cost, response cost, expense, fee, charge, judgment, penalty or fine. Losses include injury to or death of Persons, damage or loss of property, and harm or damage to natural resources.

“**Materially Adverse FCC Order**” means a final, unappealable order of the FCC that (i) preempts any Special Covenant and (ii) has material adverse effect on the Fair Market Value of the OMC Contractor’s Interest.

“**Negative Commercial Revenue Impact**” means, solely with respect to any Compensation Event, the amount by which such Compensation Event (i) decreases the amount of revenues that the OMC Contractor demonstrates that it can reasonably expect to receive and earn pursuant to Commercial Agreements below (ii) the amount of revenues that the Base Case Financial Model forecasted that the OMC Contractor would receive and earn pursuant to Commercial Agreements.

“**NEPA Document**” means [*name of NEPA document for Project to be inserted*].

“**Net Commercialization Cash Flows**” means, for a given year, Revenues from Commercial Activities, plus any refinancing gains realized by the OMC Contractor, minus each of following for such year: (i) O&M Costs for Commercial Activities; (ii) the Annual Guaranteed Revenues paid to the Department; (iii) debt service and coverage requirements; (iv) capital expenditures funded by the OMC Contractor using Revenues from Commercial Activities; (v) capital expenditures funded by the Developer using equity capital; and (vi) taxes. Net Commercialization Cash Flows does not include equity capital contributions nor debt drawdowns, and therefore Net Commercialization Cash Flows may be less than zero.

“**New Commercial Infrastructure**” means any capital improvements relating to the Commercial Activities constructed by the OMC Contractor within the Department Right-of-Way on or after the Closing Date pursuant to the terms of the OMC Agreement.

“**Net Lenders’ Liabilities**” means the amount calculated (without double-counting) as follows:

- (a) Lenders’ Liabilities; minus
- (b) Account Balances; minus
- (c) Insurance Proceeds (excluding proceeds of personal injury, property damage or other third party liability insurance payable to or for the account of a third party).

“**Network Segment**” means [●].⁹

“**No Fault Termination Sum**” is defined in Section 2 (*Compensation on Termination for Extended Force Majeure, Uninsurability or Materially Adverse FCC Order*) of Exhibit 6 (Compensation on Termination).

“**O&M Costs for Commercial Activities**” means any actual documented costs arising from incremental operating and maintenance costs of the OMC Contractor Infrastructure.

“**O&M Work**” means all Preventive Maintenance and Renewal Work.

“**OMC Contractor**” means [●].

⁹ **Note to Proposers:** Specific Network Segments to be defined in the OMC Agreement.

“**OMC Contractor Conduit**” means the duct encasing the OMC Contractor Fibers, as further described in the Technical Requirements and as otherwise installed, modified, or expanded pursuant to the OMC Agreement.

“**OMC Contractor Connected Vehicle Sites**” is defined in Section 11(b) (Cellular Connected Vehicle Sites).

“**OMC Contractor Default**” is defined in Section 58.1 (OMC Contractor Default).

“**OMC Contractor Default Notice**” is defined in Section 58.3(a) (Notice and Cure Periods).

“**OMC Contractor Default Termination Sum**” is defined in Section 4 (*Compensation on Termination for OMC Contractor Default*) of Exhibit 6 (Compensation on Termination).

“**OMC Contractor Fibers**” means any fiber optic strands installed in the Project Conduit and reserved for dedicated use by the OMC Contractor, as required in the Technical Requirements and as otherwise installed, modified, or expanded pursuant to the OMC Agreement.

“**OMC Contractor Infrastructure**” means all of the following located within the Department Right-of-Way:

- (a) the OMC Contractor Conduit;
- (b) the OMC Contractor Fibers;
- (c) the OMC Contractor Junction Boxes;
- (d) any Commercial Lateral;
- (e) OMC Contractor Connected Vehicles Sites;
- (f) any New Commercial Infrastructure; and
- (g) any equipment or structure related thereto.

“**OMC Contractor Junction Boxes**” means any junction boxes designed and installed exclusively in connection with the OMC Contractor Fibers in accordance with the Technical Requirements and as the same may be otherwise installed, modified, or expanded pursuant to the OMC Agreement.

“**OMC Contractor-Related Entity**” means:

- (a) the OMC Contractor;
- (b) the Equity Members;
- (c) the Contractors (including Suppliers);
- (d) any other Persons performing any of the Work for or on behalf of the OMC Contractor;
- (e) any other Persons for whom the OMC Contractor may be legally or contractually responsible; and

- (f) the employees, agents, officers, directors, representatives, consultants, successors and assigns of any of the foregoing.

“**OMC Contractor’s Interest**” means all right, title and interest of the OMC Contractor in, to or derived from the OMC Agreement.

“**Operating Activities**” is defined in Section 8(g) (Grant of Rights).

“**Other Contractor**” means any contractor of the Department (other than the OMC Contractor and any OMC Contractor-Related Entity) carrying out work on the Project Site.

“**P3 Policy**” means the North Carolina Department of Transportation Public Private Partnerships Policy & Procedures.

“**Parties**” means the Department and the OMC Contractor.

“**Performance Points**” means the points that may be assessed for unsatisfactory performance pursuant to Section E-1.1 of the RFP.

“**Performance Point Default Trigger**” means [●].¹⁰

“**Performance Security**” has the meaning set forth in Section 52 (Performance Security).

“**Persistent Breach**” means a breach for which a Final Warning Notice has been issued, that:

- (a) continues for more than thirty (30) consecutive days after the date of service of the Final Warning Notice; or
- (b) recurs three (3) or more times within the six (6)-month period after the date of service of the Final Warning Notice.

“**Person**” means an individual, a general or limited partnership, a joint venture, a corporation, a limited liability company, a trust, an unincorporated organization or a governmental authority.

“**Positive Commercial Revenue Impact**” means the amount by which such Relevant Event increases the amount of revenues that the Parties reasonably agree that the OMC Contractor can expect to receive and earn pursuant to Commercial Agreements above the amount of revenues that the Base Case Financial Model forecasted that the OMC Contractor would receive and earn pursuant to Commercial Agreements.

“**Preventive Maintenance**” means Work to preserve the current condition of assets, including any inspection, that is routine in nature and includes matters that are typically included as an annual or biannual recurring cost for maintenance of comparable assets to those forming part of the Project.

¹⁰ **Note to Proposers:** Specific threshold/trigger to be developed based on non-performance disincentive regime described in Part E-1.1. of the RFP.

“Principal OMC Contractor Documents” means the Project Documents to which the OMC Contractor is a party.

“Prohibited Person” means any Person who is:

- (a) debarred, suspended, proposed for debarment with a final determination still pending, declared ineligible or voluntarily excluded from participating in procurement or nonprocurement transactions with the Department, the State, or federal government or any department, agency or instrumentality of the federal government;
- (b) indicted, convicted or had a civil or administrative judgment rendered against such Person for any violation of law involving fraud, conspiracy, collusion, bribery, perjury, material misrepresentation, or any other violation that shows a similar lack of moral or ethical integrity, and no event has occurred and no condition exists that is likely to result in the debarment or suspension of such Person from contracting with the federal government or any department, agency or instrumentality of the federal government;
- (c) listed on the “Lists of Parties Excluded from Federal Procurement and Nonprocurement Programs” issued by the U.S. General Services Administration;
- (d) located within, or doing business or operating from, a country or other territory subject to a general embargo administered by the United States Office of Foreign Assets Control (OFAC);
- (e) designated on the OFAC list of “Specially Designated Nationals”;
- (f) otherwise targeted under economic or financial sanctions administered by the United Nations, OFAC or any other U.S. federal economic sanctions authority or any divestment or sanctions program of either State;
- (g) a banking institution chartered or licensed in a jurisdiction against which the United States Secretary of the Treasury has imposed special measures under Section 311 of the USA PATRIOT Act (“Section 311”);
- (h) located within or is operating from a jurisdiction that has been designated as non-cooperative with international anti-money laundering principles by the Financial Action Task Force on Money Laundering;
- (i) a financial institution against which the United States Secretary of the Treasury has imposed special measures under Section 311;
- (j) a senior foreign political figure or a prohibited foreign shell bank within the meaning of 31 CFR Section 103.175;
- (k) any Person with whom the Department is engaged in litigation relating to performance of contract or business practices, unless the Department has first waived (in the Department’s absolute discretion) the prohibition on a transfer to such Person during the continuance of the relevant litigation, by written notice to the transferring equity holder, with a copy to the OMC Contractor; or

- (l) a “foreign person” within the meaning of 31 CFR Section 800.216; *provided* that the Change in Ownership between the foreign person and the OMC Contractor is a “covered transaction” within the meaning of Section 721 of Title VII of the Defense Production Act of 1950, as amended (“Section 721”), and 31 CFR Part 800, unless the foreign person and the OMC Contractor file a voluntary notice of the Change in Ownership with the Committee on Foreign Investment in the United States in accordance with Section 721 and 31 CFR Part 800 and prior to the closing of such Change in Ownership:
- (i) the Committee on Foreign Investment in the United States has advised the foreign person and/or the OMC Contractor in writing that the Change in Ownership is not a covered transaction within the meaning of Section 721 and 31 CFR Part 800;
 - (ii) the Committee on Foreign Investment in the United States has advised the foreign person and the OMC Contractor in writing that the Change in Ownership does not present any national security risks or other provisions of law adequately address those risks and concludes action;
 - (iii) the Committee on Foreign Investment in the United States determines that the Change in Ownership presents national security concerns that other provisions of law do not adequately address and enters into an agreement with the foreign person and the OMC Contractor to mitigate such risks; or
 - (iv) the President of the United States has announced a decision not to exercise his authority pursuant to Section 721 with respect to such Change in Ownership.

“**Project**” means the operation, and maintenance, of the Broadband Infrastructure included as part of the each of the I-95/U.S. 70 Network and the U.S. 74 Network and all other works and ancillary services in accordance with the OMC Agreement, including the Commercial Activities.

“**Project Conduit**” means the Conduit constructed by the OMC Contractor pursuant to the OMC Agreement.

“**Project Data**” means:

- (a) the Design Documents; and
- (b) any other information, documents or data acquired or brought into existence or used in relation to the Work or the OMC Agreement,

in each case, that is used by or on behalf of any OMC Contractor-Related Entity in connection with the provision of the Work or the performance of the OMC Contractor’s obligations under the OMC Agreement.

“**Project Debt**” means all outstanding obligations from time to time pursuant to the Finance Documents.

“**Project Documents**” means the OMC Agreement, the Key Contracts, and the Finance Documents.

“**Project Fibers**” means, collectively, the Department Fibers and the OMC Contractor Fibers.

“**Project Site**” means [●].¹¹

¹¹ **Note to Proposers:** Definition to identify those portions of the Department’s Right-of-Way on which the Project is to be situated.

“**Proposal**” means the proposal submitted by the OMC Contractor to the Department in response to the RFP.

“**Proposal Due Date**” means [●].

“**Proposer**” means each firm or team of firms that was shortlisted in accordance with the RFQ and invited to submit a proposal to the Department in response to the RFP.

“**Protection in Place**” means any action taken to avoid damaging a Utility which does not involve removing or relocating that Utility, including staking the location of the Utility, exposing the Utility, avoidance of a Utility’s location by construction equipment, installing steel plating or concrete slabs, encasement in concrete, temporarily de-energizing power lines and installing physical barriers. The term includes both temporary measures and permanent installations meeting this definition.

“**Public Records Law**” is defined in Section 65(a) (Public Records Law).

“**Qualified Investor**” means [●].¹²

“**Qualifying Change in Law**” means:

- (c) a Discriminatory Change in Law; or
- (d) a General Change in Law which involves Capital Expenditure,

which, in either case, was not foreseeable at the Closing Date.

“**Quarantine Restriction**” means any Applicable Law enacted by a Governmental Entity in response to an epidemic or pandemic that restricts the movement or gathering of people in an effort to curb the outbreak or spread of disease, including so-called stay-at-home or shelter-in-place orders.

“**Reasonable Efforts**” means all those steps (if any) in the power of the relevant Party that are capable of producing the desired result, being steps which a prudent, determined and commercially reasonable Person desiring to achieve that result would take; *provided that* “Reasonable Efforts” does not mean that, subject to its other express obligations under the OMC Agreement, the relevant Party is required to expend funds, except for those necessary to meet the reasonable costs reasonably incidental or ancillary to the steps to be taken by the relevant Party (including its reasonable travel expenses, correspondence costs and general overhead expenses).

“**Redundancy Payment**” means the payment of all wages earned, accrued unused vacation time, and any other payments required by Applicable Law or required by the employer’s employment agreement with the employees.

“**Related Entity**” means each of: [●].¹³

“**Relevant Event**” means any of the following:

- (a) a Department change for which the Department has issued a Department change order;

¹² **Note to Proposers:** To be determined based on OMC Contractor’s financing structure.

¹³ **Note to Proposers:** To be determined following selection of the preferred proposer based on members of proposer’s consortium.

- (b) an OMC Contractor change that the Department has approved by issuing an OMC Contractor change order; or
- (c) a Compensation Event.

“**Relevant Insurance Amount**” is defined in Section 51(a)(iv)(A) (Consequences of a Risk Becoming an Uninsurable Risk).

“**Relief Event**” means:

- (a) any Change in Law that is not a Qualifying Change in Law;
- (b) any Force Majeure Event;
- (c) any flood;
- (d) any fire, explosion or earthquakes;
- (e) any tornado or named windstorm and ensuing storm surges;
- (f) any riot or civil commotion;
- (g) any blockade or embargo;
- (h) any:
 - (i) official or unofficial strike;
 - (ii) lockout;
 - (iii) go-slow; or
 - (iv) other labor dispute,
generally affecting the construction industry or a significant sector of it;
- (i) any accidental loss or damage to the Project Site or any roads servicing the Project Site (including obstructed waterways); or
- (j) any delay in obtaining any Governmental Approval to the extent that such delay is beyond the reasonable control of any OMC Contractor-Related Entity; or
- (k) any material interruption to, or interference with, the Work caused by the entry onto the Project Site or the Broadband Infrastructure of a Governmental Entity empowered to enforce Applicable Law for purposes of carrying out such Governmental Entity’s law enforcement duties; *provided* that such entry onto the Project Site or the Broadband Infrastructure is not attributable to any investigation of, or action by, any OMC Contractor-Related Entity,

except, in each case, to the extent attributable to any breach of the OMC Agreement, Applicable Law or any Governmental Approval by, or any negligent act or negligent omission of, a OMC Contractor-Related Entity.

“**Remedial Plan**” is defined in Section 58.4(a) (Remedial Plan for OMC Contractor Default).

“**Renewal Work**” means maintenance, repair, reconstruction, rehabilitation, restoration, renewal or replacement of any worn-out, obsolete, deficient, damaged or under-performing element that is not Preventive Maintenance so that such element does not prematurely deteriorate and remains fully functional.

“**Request for Proposals**” or “**RFP**” means the Request for Proposals for the I-95, U.S. 70 & U.S. 74 Broadband Infrastructure Project (TIP R-5777D, I-5986C, HO-0002A, B & C) dated as of [●] [●], 2021.

“**Required Action**” is defined in Section 62.3(a)(i) (Required Action by the Department).

“**Required Rights**” means any approval, right, license, permit, franchise, authorization, certification, consent, easement, right-of-way, right of use, leases, fee interest, and other agreements from any Person (other than any Governmental Entity) that is necessary for the OMC Contractor to use the OMC Contractor Infrastructure, connect to the OMC Contractor Infrastructure, or use and operate the OMC Contractor Infrastructure, in each case as contemplated by Section 8 (Grant of Rights).

“**Restricted Change in Ownership**” is defined in Section 67.1(b) (Restricted Change in Ownership).

“**Revenues from Commercial Activities**” means the gross revenues resulting from the OMC Contractor’s Commercial Activities and recognized when cash is received from Commercial End-Users, with the exception of any one-time, non-recurring payment associated with a multi-year Commercial Agreement, wherein the OMC Contractor may elect to recognize such one-time, non-recurring revenue over the initial term of the associated Commercial Agreement in even installments.

“**Safety Standards**” means those provisions of the Technical Requirements that are measures to protect public safety or worker safety. Provisions of the Technical Requirements primarily directed at durability of materials or equipment, where the durability is primarily a matter of life cycle cost rather than protecting public or worker safety, are not Safety Standards.

“**Section 311**” is defined in clause (g) of the definition of “Prohibited Person.”

“**Section 721**” is defined in clause (l) of the definition of “Prohibited Person.”

“**Security Documents**” means the documents listed in [●] (Security Documents) of [●] (Finance Documents), together with any other document designated by the Parties (acting jointly) as a Security Document.

“**Service Line**” means (a) a Utility line, the function of which is to directly connect the improvements on an individual property to another Utility line located off such property, which other Utility line connects more than one such individual line to a larger system or (b) any cable or conduit that supplies an active feed from a Utility Owner’s facilities to activate or energize the Department’s or a local agency’s lighting and electrical systems, traffic control systems, communications systems or irrigation systems.

“**Special Covenant**” means any covenant set forth in Section 8(b)(i) (Grant of Rights) or Section 9(a) (Certain Covenants and Confirmation).

“**State**” means the State of North Carolina.

“Subcontractor Breakage Costs” means Losses that have been or will be reasonably and properly incurred by the OMC Contractor under a Key Contract as a direct result of the termination of the OMC Agreement (and which will not include lost profit or lost opportunity), but only to the extent that:

- (a) the Losses are incurred in connection with the Project and with respect to the Work required to be provided or carried out, including:
 - (i) any materials or goods ordered or subcontracts placed that cannot be cancelled without such Losses being incurred;
 - (ii) any expenditures incurred in anticipation of the provision of services or the completion of Work in the future; and
 - (iii) the cost of demobilization, including the cost of any relocation of equipment used in connection with the Project;
- (b) the Losses are incurred under arrangements or agreements that are consistent with terms that have been entered into in the ordinary course of business and on an arm’s length basis; and
- (c) the OMC Contractor and the relevant Key Contractor have each used their Reasonable Efforts to mitigate such Losses.

“Supplier” means any Person not performing work at or on a Project Site which supplies machinery, equipment, materials, hardware, software, systems or any other appurtenance to the Project to the OMC Contractor or to any Contractor in connection with the performance of the Work. Persons who merely transport, pick up, deliver or carry materials, personnel, parts or equipment or any other items or Persons to or from a Project Site will not be deemed to be performing Work at such Project Site.

“Technical Requirements” means the Technical Requirements set out in Section 25 (General Obligations).

“Telecommunications Act” means the Telecommunications Act of 1996 (Pub. LA. No. 104-104, 110 Stat. 56 (1996)), as amended (and any regulation or order of the FCC with respect thereto).

“Telecommunications Carrier” has the meaning set forth in the Telecommunications Act.

“Telecommunications Service” has the meaning set forth in the Telecommunications Act.

“Term” is defined in Section 2(a) (Term).

“Termination by Court Ruling for Illegality” is defined in Section 61.1(a) (Termination by Court Ruling or for Materially Adverse FCC Order).

“Termination by Court Ruling for Impossibility” is defined in Section 61.1(b) (Termination by Court Ruling or for Materially Adverse FCC Order).

“Termination Date” means:

- (a) the Expiry Date; or
- (b) if applicable, the Early Termination Date.

“**Termination Notice**” means any termination notice delivered under the terms of the OMC Agreement.

“**Termination Sum**” means any of (i) Reserved, (ii) the OMC Contractor Default Termination Sum, (iii) the No Fault Termination Sum, (iv) the Department Termination Sum, and (v) the Revenue Payment Termination Sum.

“**Terrorism**” means activities against Persons or property of any nature:

- (a) that involve the following or preparation for the following:
 - (i) use or threat of force or violence; or
 - (ii) Department or threat of an act that interferes with or disrupts an electronic, communication, information or mechanical system; and
- (b) when one or both of the following applies:
 - (i) it appears that the intent is to intimidate or coerce the Department, a Governmental Entity or the civilian population or any segment of the civilian population, or to disrupt any segment of the economy;
 - (ii) it appears that the intent is to intimidate or coerce the Department or a Governmental Entity, or to further political, ideological, religious, social or economic objectives or to express (or express opposition to) a philosophy or ideology; and
- (c) that are criminally defined as terrorism for purposes of State or federal Applicable Law.

“**Third Party Claims**” means any and all claims, disputes, disagreements, causes of action, demands, suits, actions, investigations or administrative proceedings brought by a Person that is not an Indemnified Party or the OMC Contractor with respect to damages, injuries, liabilities, obligations, losses, costs, penalties, fines or expenses (including attorneys’ fees and expenses) sustained or incurred by such Person.

“**Transfer Date**” means the date each Network Segment is transferred from the DB Contractor to the Contractor following substantial completion of such Network Segment.

“**UAS**” is defined in Section 23 (Unmanned Aircraft Systems).

“**Uninsurable Risk**” means a risk for which:

- (a) insurance is not available to the OMC Contractor with respect to the Project in the worldwide insurance or reinsurance markets on the terms required in the OMC Agreement with reputable insurers of good standing; or
- (b) the insurance premium payable for insuring that risk on the terms required in the OMC Agreement is at such level that the risk is not generally being insured against in the worldwide insurance or reinsurance markets with reputable insurers of good standing by contractors in relation to comparable infrastructure projects in North America.

“**U.S. 74 Network**” means the fiber optic network along the U.S. 74 corridor, as further described in Part B-1.4 of the RFP.

“Utility” means a privately, publicly, or cooperatively owned line, facility, or system for transmitting or distributing communications, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, a combined stormwater and sanitary system, or other similar commodities, including wireless telecommunications, television transmission signals and publicly owned fire and police signal systems, which directly or indirectly serve the public. The necessary appurtenances to each Utility facility will be considered part of such Utility. Without limitation, any Service Line connecting directly to a Utility will be considered an appurtenance to that Utility, regardless of the ownership of such Service Line.

“Utility Adjustment” means each relocation (temporary or permanent), abandonment, Protection in Place, removal (of previously abandoned Utilities as well as of newly abandoned Utilities), replacement, reinstallation, or modification of existing Utilities necessary to accommodate construction, conversion, operation, maintenance or use of the Project or the Work; *provided* that the term “Utility Adjustment” shall not refer to any of the work associated with facilities owned by a Railroad.

“Work” means the O&M Work, and all other work, services and obligations (including the performance of the Commercial Activities), required to be furnished, performed and provided by the OMC Contractor under the Project Documents.

“Work Product” has the meaning set forth in Section 64 (*Intellectual Property*).

EXHIBIT 2

FORM OF LENDERS DIRECT AGREEMENT¹⁴

North Carolina Department of Transportation

and

[•]

as OMC Contractor

and

[•]

as Collateral Agent

¹⁴ **Note to Proposers:** Form of Lenders' Direct Agreement provided for Proposers considering a non-recourse project financing transaction structure.

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THIS LENDERS DIRECT AGREEMENT (this “Agreement”) is made on [•], 20[•]: BETWEEN:

- (1) The **NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**, a public agency of the State of North Carolina (the “Department”);
- (2) [•], a [•] (the “OMC Contractor”); and
- (3) [•], as collateral agent for the Lenders (the “Collateral Agent”).

RECITALS:

- (A) The Department and the OMC Contractor have entered into the Operations, Maintenance and Commercialization Agreement for the I-95, U.S. 70 & U.S. 74 Broadband Infrastructure Project, dated [•], as may be amended from time to time (the “OMC Agreement”), in connection with (i) the operation and maintenance of a fiber optic broadband network to be installed within the Department’s right-of-way and (b) the utilization of such network for the generation of revenue from non-Department entities for the benefit the Department and the OMC Contractor (collectively, the “Project”) as more fully described in the OMC Agreement.
- (B) The Collateral Agent is the collateral agent for the various providers (the “Lenders”) of senior debt (the “Senior Debt”) to the OMC Contractor pursuant to the Finance Documents, the proceeds of which will be provided to the OMC Contractor and used by the OMC Contractor to perform, in part, its obligations under the OMC Agreement.
- (C) Pursuant to the Finance Documents, the provision by the Lenders of the Senior Debt to the OMC Contractor is conditioned upon the Department providing the Lenders with certain assurances (as set out in this Agreement).
- (D) This Agreement is, for the purposes of the OMC Agreement, the Lenders Direct Agreement referred to in the OMC Agreement.

THE PARTIES AGREE as follows:

1. INTERPRETATION, OMC AGREEMENT AND ORDER OF PRECEDENCE

1.1 Definitions

Capitalized terms used but not otherwise defined in this Agreement will have the respective meanings set out in Exhibit 1 (*Definitions*) to the OMC Agreement. In addition, the following terms have the meanings specified below:

“Bankruptcy-Related Default” means an OMC Contractor Default that arises pursuant to Section 58.1(e) (*Insolvency of OMC Contractor*) of the OMC Agreement;

“Collateral Agent Notice” is defined in Section 3.2(a) (Finance Document Defaults);

“Department Notice” is defined in Section 3.1(a) (OMC Contractor Default);

“Cure Period” means the period commencing on the date that the Collateral Agent receives a Department Notice pursuant to Section 3.1(a) (OMC Contractor Default) and ending on the earliest of:

- (a) the relevant Cure Period Completion Date;
- (b) any Step-out Date;
- (c) the Substitution Effective Date; or
- (d) the last day of the Term;

“Cure Period Completion Date” means, subject to Section 9.2 (Extension of Cure Period Completion Date):

- (a) with respect to any Payment Default, the date falling thirty (30) days after the later of (i) the date that the Collateral Agent receives the relevant Department Notice and (ii) expiration of any applicable cure period granted to the OMC Contractor pursuant to Section 58.3 (*Notice and Cure Periods*) of the OMC Agreement;
- (b) with respect to any Bankruptcy-Related Default, the date falling ninety (90) days after the later of (i) the date that the Collateral Agent receives the relevant Department Notice and (ii) expiration of any applicable cure period granted to the OMC Contractor pursuant to Section 58.3 (*Notice and Cure Periods*) of the OMC Agreement;
- (c) Reserved;
- (d) with respect to any OMC Contractor Default not referred to in clauses (a) through (c), the date falling ninety (90) days after the later of (1) the date that the Collateral Agent receives the relevant Department Notice and (2) expiration of any applicable cure period granted to the OMC Contractor pursuant to Section 58.3 (*Notice and Cure Periods*) of the OMC Agreement; provided, that such period will, at the request of the Collateral Agent, be extended up to a maximum of sixty (60) additional days, but only to the extent that:
 - (i) within the ninety (90) day period provided for in this clause (d), the Collateral Agent and the Department (each acting reasonably) agree to a plan specifying the remedial action to be taken with respect to the relevant OMC Contractor Default; and
 - (ii) the extension requested by the Collateral Agent represents (in the reasonable opinion of the Department) a reasonable period of time to remedy the relevant OMC Contractor Default;

“Designated Account” means [●];

“Discharge Date” means the date on which all of the obligations of the OMC Contractor under the Finance Documents have been irrevocably discharged in full to the satisfaction of the Collateral Agent;

“Event of Default” has the meaning given to such term in the Finance Documents;

“Initial Equity Members” means the Equity Members as of the date of this Agreement;

“Initial Period” means:

- (a) with respect to any Payment Default, the later of:

- (i) the date falling thirty (30) days after the date that the Collateral Agent receives the relevant Department Notice; and
 - (ii) expiration of any applicable cure period granted to the OMC Contractor pursuant to Section 58.3 (*Notice and Cure Periods*) of the OMC Agreement; and
- (b) with respect to any other OMC Contractor Default not referred to in clause (a), the later of:
- (i) the date falling ninety (90) days after the date that the Collateral Agent receives the relevant Department Notice; and
 - (ii) expiration of any applicable cure period granted to the OMC Contractor pursuant to Section 58.3 (*Notice and Cure Periods*) of the OMC Agreement,

in each case, as may be extended pursuant to Section 9.2 (*Extension of Cure Period Completion Date*);

“Payment Default” means an OMC Contractor Default that arises pursuant to Section 58.1(j) (*Non-Payment*) of the OMC Agreement;

“Property” means any right or interest in or to property of any kind whatsoever, whether real, personal or mixed, and whether tangible or intangible;

“Qualified Substitute OMC Contractor” means a Person who:

- (c) has the legal capacity, power and authority to become a party to, and perform the obligations of the OMC Contractor under, the OMC Agreement;
- (d) has the resources available to it (including committed financial resources) to perform the obligations of the OMC Contractor under the OMC Agreement;
- (e) employs or subcontracts with Persons having the appropriate qualifications, experience and technical competence available to them that are sufficient to enable them to perform the obligations of the OMC Contractor under the OMC Agreement; and
- (f) is not a Prohibited Person;

“Step-in Date” is defined in Section 5.1(c) (*Step-in Notice*);

“Step-in Entity” is defined in Section 5.1(b) (*Step-in Notice*);

“Step-in Entity Accession Agreement” means the OMC Agreement to be entered into by a Step-in Entity pursuant to Section 5.1(c) (*Step-in Notice*);

“Step-in Notice” is defined in Section 5.1(a) (*Step-in Notice*);

“Step-in Period” in relation to a Step-in Entity, means the period from and including the Step-in Date until the earliest of:

- (g) the last day of the Cure Period;
- (h) the Substitution Effective Date;

- (i) the Step-out Date;
- (j) the date of termination of the OMC Agreement by the Department in accordance with this Agreement and the OMC Agreement; and
- (k) the last day of the term;

“Step-out Date” is defined in Section 5.3(a) (Step-out);

“Step-out Notice” is defined in Section 5.3(a) (Step-out);

“Substitute” is defined in Section 6.1 (Notice of Proposed Substitute);

“Substitute Accession Agreement” means the agreement to be entered into by a Substitute pursuant to Section 7.1 (Substitution Effective Date);

“Substitution Effective Date” is defined in Section 7.1 (Substitution Effective Date); and

“Substitution Notice” is defined in Section 6.1 (Notice of Proposed Substitute).

1.2 Interpretation

The rules of interpretation set out in Sections [●] through [●] (*Interpretation*) of the OMC Agreement shall apply to this Agreement.

1.3 Order of Precedence

If there is any conflict, ambiguity or inconsistency between the provisions of the OMC Agreement and the provisions of this Agreement, the provisions of this Agreement will prevail.

1.4 No Effect on OMC Agreement

Nothing in this Agreement amends or modifies any of the OMC Contractor’s obligations to the Department under the OMC Agreement.

2. CONSENT TO SECURITY AND DEPARTMENT PAYMENTS

2.1 Consent to Security

Despite anything to the contrary in the OMC Agreement:

- (a) the Department acknowledges and consents to:
 - (i) the security interest granted by the OMC Contractor to the Collateral Agent with respect to the OMC Contractor’s Interest pursuant to the Finance Documents;
 - (ii) the security interest granted by each of the Initial Equity Members to the Collateral Agent in its respective equity interest(s) in the OMC Contractor, in each case pursuant to the Finance Documents; and
 - (iii) the grant of security interests set out in the Security Documents;

- (b) none of the security interests referred to in Section 2.1(a) (Consent to Security):
 - (i) constitutes (or with the giving of notice or lapse of time, or both, could constitute) either a breach of the OMC Agreement or an OMC Contractor Default; or
 - (ii) requires any consent of the Department that is either additional or supplemental to those granted pursuant to this Section 2.1 (Consent to Security);
- (c) the Collateral Agent will not, by virtue of the security interests referred to in Section 2.1(a) (Consent to Security), acquire any greater rights to the OMC Contractor's Interest than the OMC Contractor itself has at any particular time pursuant to the OMC Agreement; and
- (d) for so long as any amount under the Finance Documents is outstanding, the Department shall not, without the prior written consent of the Collateral Agent (to the extent such consent is required under the Finance Documents), consent to any assignment, transfer, pledge or hypothecation of the OMC Agreement or any interest in the OMC Agreement by the OMC Contractor, other than as specified in this Agreement.

2.2 Department Payments under the OMC Agreement

The Department shall, unless directed otherwise by the Collateral Agent, deposit all amounts payable by it under the OMC Agreement into the Designated Account and the OMC Contractor agrees that any such payment made in accordance with this Section 2.2 (Department Payments under the OMC Agreement) will constitute a complete discharge of the Department's applicable payment obligations for such payment under the OMC Agreement.

3. NOTICES

3.1 OMC Contractor Default

- (a) The Department shall give the Collateral Agent written notice promptly upon becoming aware of the occurrence of an OMC Contractor Default (a "Department Notice"), which must specify:
 - (i) the unperformed obligations of the OMC Contractor under the OMC Agreement of which the Department is aware (having made reasonable inquiry) and the grounds for termination of the OMC Agreement in sufficient detail to enable the Collateral Agent to assess the nature of the OMC Contractor Default, the requirement to remedy the OMC Contractor Default and the scope and amount of any liability of the OMC Contractor resulting from such OMC Contractor Default;
 - (ii) all amounts due and payable by the OMC Contractor to the Department under the OMC Agreement, if any, on or before the date of the Department Notice and that remain unpaid at such date and, by cross-reference to the applicable provision(s) of the OMC Agreement, the nature of the OMC Contractor's obligation to pay such amounts; and
 - (iii) the amount of any payments that the Department reasonably foresees will become due from the OMC Contractor during the applicable Cure Period.

- (b) The Department shall from time to time update any Department Notice issued pursuant to Section 3.1(a) (OMC Contractor Default) as and when it becomes aware of any unperformed obligations (including non-payment of amounts that are due) under the OMC Agreement that were not specified in the relevant Department Notice.
- (c) Nothing in this Agreement will prevent the concurrent running of multiple Department Notices.
- (d) In addition to the Department's obligation to provide a Department Notice in accordance with Section 3.1(a), the Department shall provide the Collateral Agent with a copy of any notice delivered to the OMC Contractor pursuant to Sections 46.2 or 46.3 of the OMC Agreement.

3.2 **Finance Document Defaults**

The Collateral Agent shall:

- (a) promptly (and in any event within five (5) Business Days) after becoming aware of any Event of Default (whether or not a Department Notice has been served in connection with the same event) give the Department written notice (a "Collateral Agent Notice");
- (b) specify in any Collateral Agent Notice the circumstances and nature of the Event of Default to which the Collateral Agent Notice relates; and
- (c) notify the Department of any decision to accelerate amounts outstanding under the Finance Documents or to exercise any enforcement remedies under the Finance Documents promptly (and in any event within five (5) Business Days) after the taking of such decision.

3.3 **Updates to Notices**

The Collateral Agent shall update any Collateral Agent Notice issued pursuant to Section 3.2 (Finance Document Defaults) as and when it becomes aware of any matter described in clauses (a) through (c) of Section 3.2 (Finance Document Defaults) that was not specified in the relevant Collateral Agent Notice.

4. **RIGHTS AND OBLIGATIONS DURING THE CURE PERIOD**

4.1 **No Termination during the Cure Period**

At any time during a Cure Period, the Department shall not, subject to the terms of this Agreement:

- (a) terminate or give notice terminating the OMC Agreement for OMC Contractor Default; or
- (b) take, join in or support, whether directly or indirectly, any action for the liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding-up of the OMC Contractor or for the composition or readjustment of the OMC Contractor's debts, or any similar insolvency procedure in relation to the OMC Contractor, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator or similar official for the OMC Contractor or for any part of the OMC Contractor's Property, provided, that if and after any of the foregoing have been commenced with respect to the OMC Contractor by a Person other than the Department,

this clause (b) will not otherwise restrict or impair the ability of the Department to participate in any way in such liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding-up of the OMC Contractor or for the composition or readjustment of the OMC Contractor's debts, or any similar insolvency procedure in relation to the OMC Contractor, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator or similar official for the OMC Contractor or for any part of the OMC Contractor's Property.

4.2 Collateral Agent Rights

- (a) At any time during an Event of Default (but, in the case of an OMC Contractor Default, only for so long as the Initial Period has not expired), without giving a Step-in Notice, the Collateral Agent may (but shall have no obligation), in its sole discretion, perform or arrange for the performance of any act, duty or obligation required of the OMC Contractor under the OMC Agreement, or remedy any breach of the OMC Contractor under the OMC Agreement at any time, which performance or remedy by or on behalf of the Collateral Agent shall be accepted by the Department in lieu of performance by the OMC Contractor and in satisfaction of the OMC Contractor's corresponding obligations under the OMC Agreement. If any breach of the OMC Contractor under the OMC Agreement is remedied or any payment liabilities or obligations of the OMC Contractor are performed by the Collateral Agent under this Section 4.2(a) (Collateral Agent Rights), such action will discharge the relevant liabilities or obligations of the OMC Contractor to the Department. No such performance by or on behalf of the Collateral Agent under this Section 4.2(a) (Collateral Agent Rights) will be construed as an assumption by the Collateral Agent, or any person acting on the Collateral Agent's behalf, of any of the covenants, agreements or other obligations of the OMC Contractor under the OMC Agreement.
- (b) At any time during a Cure Period or an Event of Default, the Collateral Agent may:
 - (i) issue a Step-in Notice in accordance with the requirements of Section 5.1 (Step-in Notice); or
 - (ii) issue a Substitution Notice in accordance with the requirements of Section 6.1 (Notice of Proposed Substitute).

5. STEP-IN ARRANGEMENTS

5.1 Step-in Notice

- (a) Provided that all unperformed payment obligations of the OMC Contractor identified in a Department Notice have been remedied in full or waived by the Department on or before the Step-in Date, the Collateral Agent may provide the Department with a written notice ("Step-in Notice") under this Section 5.1 (Step-in Notice) at any time during any Cure Period or Event of Default.
- (b) The Collateral Agent shall nominate, in any Step-in Notice, any one of:
 - (i) the Collateral Agent, a Lender or any of their respective Affiliates that is not a Prohibited Person; or

- (ii) any Person approved by the Department in its reasonable discretion, such approval not to be unreasonably withheld, conditioned or delayed if such Person meets all the criteria to be a Qualified Substitute OMC Contractor and the Department has been provided with the relevant information required under Section 6.3 (Provision of Information) with respect to such Person (if the Department has failed to respond to the Collateral Agent within sixty (60) days of the date on which the Department has received the information specified in Section 6.3 (Provision of Information) with respect to any such nominated Person, the approval of the Department will be deemed to have been given),

(each a “Step-in Entity”), stating that the Step-in Entity is to become a joint and several obligor with the OMC Contractor under the OMC Agreement and this Agreement in accordance with the terms of this Agreement.

- (c) The Step-in Entity named in the Step-in Notice will be deemed to become a party to the OMC Agreement and this Agreement on and from the date it executes a duly completed Step-in Entity Accession Agreement, substantially in the form attached to this Agreement as Schedule 1 (Form of Step-in Entity Accession Agreement), and submits it to the Department (the “Step-in Date”).

5.2 **Rights and Obligations on Step-in**

- (a) On and from the Step-in Date and during the Step-in Period, the Step-in Entity shall be:
 - (i) jointly and severally entitled to exercise and enjoy the rights and powers expressed to be assumed by or granted to the OMC Contractor under the OMC Agreement and this Agreement;
 - (ii) entitled to exercise and enjoy the rights and powers expressed to be assumed by or granted to a Step-in Entity under this Agreement; and
 - (iii) jointly and severally liable with the OMC Contractor for the payment of all sums due from the OMC Contractor under or arising out of the OMC Agreement at the Step-in Date and for the performance of all of the OMC Contractor’s obligations under or arising out of the OMC Agreement on or after the Step-in Date.
- (b) Without prejudice to Section 8 (Reinstatement of Remedies), during the Step-in Period:
 - (i) the Department agrees:
 - (A) not to terminate or give notice terminating the OMC Agreement for OMC Contractor Default, unless:
 - (aa) the grounds for termination or giving notice of termination arose during the Step-in Period; or
 - (bb) the Step-in Entity fails to comply with the requirements of any plan agreed between the Department and the Collateral Agent in connection with the extension of the relevant Cure Period Completion Date; and

- (B) not to take, join in or support, whether directly or indirectly, any action for the liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding-up of the OMC Contractor or for the composition or readjustment of the OMC Contractor's debts, or any similar insolvency procedure in relation to the OMC Contractor, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator or similar official for the OMC Contractor or for any part of the OMC Contractor's Property; provided, that if and after any of the foregoing have been commenced with respect to the OMC Contractor by a Person other than the Department, this clause (B) will not otherwise restrict or impair the ability of the Department to participate in any way in such liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding-up of the OMC Contractor or for the composition or readjustment of the OMC Contractor's debts, or any similar insolvency procedure in relation to the OMC Contractor, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator or similar official for the OMC Contractor or for any part of the OMC Contractor's Property;
 - (C) not to suspend its performance (including in connection with any insolvency or bankruptcy proceeding in relation to the OMC Contractor) under the OMC Agreement, unless the grounds for suspension of performance arose during the Step-in Period; and
 - (D) to continue to make payments required to be made to the OMC Contractor under the OMC Agreement to the Designated Account or to such other account as notified by the Collateral Agent to the Department;
- (ii) the Department will owe its obligations under the OMC Agreement and this Agreement to the OMC Contractor and such Step-in Entity jointly; provided, that:
- (A) subject to clause (B), the performance of such obligations by the Department in favor of either such Step-in Entity or the OMC Contractor shall be a good and effective discharge of such obligations under this Agreement and the OMC Agreement; and
 - (B) the Collateral Agent will be entitled at any time by notice in writing to the Department to direct (such direction being binding on the Collateral Agent, the Department and the OMC Contractor) that, at all times while such Step-in Entity is deemed to be a party to the OMC Agreement and this Agreement and subject to any further notice from the Collateral Agent, such Step-in Entity will be solely entitled to make any decisions, to give any directions, approvals or consents, to receive any payments or otherwise to deal with the Department under the OMC Agreement and this Agreement.
- (c) The OMC Contractor will not be relieved from any of its obligations under the OMC Agreement, whether arising before or after the Step-in Date, by reason of the Step-in Entity becoming a party to the OMC Agreement pursuant to a Step-in Entity Accession Agreement, except to the extent provided in Section 4.2(a) (Collateral Agent Rights) and Section 7.2(a) (Effectiveness of Substitution).

5.3 **Step-out**

- (a) A Step-in Entity may, at any time, by giving not less than thirty (30) days' prior written notice to the Department ("Step-out Notice"), notify the Department of the date that it wishes to terminate its obligations to the Department under the OMC Agreement and this Agreement (the "Step-out Date").
- (b) On the Step-out Date the Step-in Entity will no longer be deemed to be a party to the OMC Agreement and this Agreement and will be released from all obligations under the OMC Agreement and this Agreement. The obligations of the Department to the Step-in Entity in such capacity under the OMC Agreement and this Agreement will also terminate on the Step-out Date.
- (c) Nothing in this Section 5.3 (Step-out) will have the effect of releasing the Step-in Entity from any liability that relates to the performance or non-performance of the OMC Agreement or this Agreement by the OMC Contractor or the Step-in Entity during the Step-in Period.

6. **SUBSTITUTION PROPOSALS**

6.1 **Notice of Proposed Substitute**

If the Collateral Agent or the Lenders at any time propose to require the OMC Contractor to assign its rights and obligations under the OMC Agreement or this Agreement to a Person (a "Substitute") designated by the Collateral Agent or the Lenders (whether by mutual agreement or enforcement of rights under the Finance Documents), the effectiveness of such assignment will be conditional upon:

- (a) the Collateral Agent issuing a notice (a "Substitution Notice") to the Department requesting the prior approval of the proposed Substitute;
- (b) the Department approving the identity of the proposed Substitute pursuant to Section 6.2 (Grounds for Refusing Approval) or Section 6.4 (Deemed Approval); and
- (c) the proposed Substitute executing a Substitute Accession Agreement in accordance with Section 7.1 (Substitution Effective Date).

6.2 **Grounds for Refusing Approval**

The Department will only be entitled to withhold its approval to any proposed Substitute that is the subject of a Substitution Notice if:

- (a) the proposed Substitute is not a Qualified Substitute OMC Contractor; or
- (b) subject to Section 7.4 (Settlement of Outstanding Obligations), there are outstanding breaches of the OMC Agreement that have been previously notified by the Department to the Collateral Agent and have not, to the reasonable satisfaction of the Department, been remedied or waived prior to the date of the Substitution Notice; unless the Department has approved (such approval not to be unreasonably withheld, conditioned or delayed) a plan specifying the remedial action that the Substitute will be required to take after the Substitution Effective Date in order to remedy each such breach.

6.3 **Provision of Information**

The Collateral Agent shall promptly provide to the Department such information in relation to (1) the proposed Substitute and (2) any Person who, it is proposed, will enter into a material subcontract with the proposed Substitute in relation to the Project, as the Department shall reasonably require to enable it to reasonably determine whether the proposed Substitute is a Qualified Substitute OMC Contractor, including:

- (a) the name and address of the proposed Substitute;
- (b) unless such proposed Substitute is a publicly traded entity, the names of the proposed Substitute's shareholders or members, and the share capital or partnership or membership interests, as the case may be, held by each of them;
- (c) the manner in which it is proposed to finance the proposed Substitute and the extent to which such financing is committed (to the extent relevant);
- (d) copies of the proposed Substitute's most recent financial statements (if available, for the last three (3) financial years and audited) or, in the case of a special purpose company, its opening balance sheet;
- (e) a copy of the proposed Substitute's organizational documents;
- (f) details of the resources available to the proposed Substitute and the proposed Substitute's appropriate qualifications, experience and technical competence available to the proposed Substitute which enable it to perform the obligations of the OMC Contractor under the OMC Agreement; and
- (g) the names of the proposed Substitute's directors and any key personnel who will have responsibility for the day-to-day management of its participation in the Project.

6.4 **Deemed Approval**

If the Department has failed to respond to the Collateral Agent within sixty (60) days of the date on which the Department has confirmed it has received the information specified in Section 6.3 (Provision of Information) with respect to any proposed Substitute, the approval of the Department will be deemed to have been given.

7. **SUBSTITUTION**

7.1 **Substitution Effective Date**

If the Department approves (or is deemed to have approved) the identity of a proposed Substitute pursuant to Section 6 (Substitution Proposals), the Substitute shall execute a duly completed Substitute Accession Agreement substantially in the form set out in Schedule 2 (Form of Substitute Accession Agreement) and submit it to the Department (with a copy of it to the other parties to this Agreement). Such assignment will become effective on and from (a) the date on which the Department countersigns the Substitute Accession Agreement or (b) the date that is seven (7) Business Days after the date the Department receives the completed Substitute Accession Agreement if the Department fails to countersign the Substitute Accession Agreement (the "Substitution Effective Date").

7.2 Effectiveness of Substitution

On and from the Substitution Effective Date:

- (a) the Substitute will become a party to the OMC Agreement and this Agreement in place of the OMC Contractor who will be immediately released from its obligations arising under, and cease to be a party to, the OMC Agreement and this Agreement from that Substitution Effective Date; and
- (b) the Substitute will exercise and enjoy the rights and perform the obligations of the OMC Contractor under the OMC Agreement and this Agreement, including any and all undischarged obligations of the OMC Contractor that were otherwise required to be performed by the OMC Contractor prior to the Substitution Effective Date; and
- (c) the Department will owe its obligations (including any undischarged liability with respect to any loss or damage suffered or incurred by the OMC Contractor prior to the Substitution Effective Date) under the OMC Agreement and this Agreement to the Substitute in place of the OMC Contractor and any Step-in Entity.

7.3 Facilitation of Transfer

The Department shall use its reasonable efforts to facilitate the transfer to the Substitute of the OMC Contractor's obligations under the OMC Agreement and this Agreement.

7.4 Settlement of Outstanding Obligations

- (a) The Substitute shall pay to the Department within thirty (30) days after the Substitution Effective Date any amount due from the OMC Contractor to the Department under the OMC Agreement and this Agreement as of the Substitution Effective Date (as notified by the Department to the Substitute reasonably in advance of such Substitution Effective Date).
- (b) If the Substitute fails to satisfy its obligations pursuant to Section 7.4(a) (Settlement of Outstanding Obligation), the Department will be entitled to exercise its rights under the OMC Agreement with respect to the amount so due and unpaid.

7.5 Consequences of Substitution

On and from the Substitution Effective Date:

- (a) subject to Section 7.4 (Settlement of Outstanding Obligations), any right of termination or any other right suspended by virtue of Section 4.1 (No Termination During the Cure Period) will be of no further effect and the Department shall not be entitled to terminate the OMC Agreement and this Agreement by virtue of any act, omission or circumstance that occurred prior to such Substitution Effective Date;
- (b) if any Step-in Entity is a party to or has any obligations under the OMC Agreement and this Agreement on the Substitution Effective Date, such Step-in Entity will cease to be a party to the OMC Agreement and to this Agreement and will be discharged from all obligations under the OMC Agreement and under this Agreement; and

- (c) the Department shall enter into an equivalent direct agreement on substantially the same terms as this Agreement, except that the OMC Contractor will be replaced as a party by the Substitute.

8. REINSTATEMENT OF REMEDIES

If a Department Notice has been given, the grounds for that notice are continuing and have not been remedied or waived by the Department and:

- (a) no Step-in Entity or Substitute becomes a party to the OMC Agreement and this Agreement before the Cure Period Completion Date relating to the applicable OMC Contractor Default; or
- (b) a Step-in Entity becomes a party to the OMC Agreement and this Agreement, but the Step-in Period relating to such Step-in Entity ends without a Substitute becoming a party to the OMC Agreement and this Agreement,

then, on and from the Cure Period Completion Date or the date such Step-in Period expires, the Department shall be entitled to:

- (i) act upon any and all grounds for termination available to it in relation to the OMC Agreement with respect to OMC Contractor Defaults under the OMC Agreement that have not been remedied or waived by the Department;
- (ii) pursue any and all claims and exercise any and all remedies against the OMC Contractor; and
- (iii) if and to the extent that it is then entitled to do so under the OMC Agreement, take or support any action of the type referred to in Section 4.1(b) (No Termination during the Cure Period).

9. IMPACT OF BANKRUPTCY OR INSOLVENCY PROCEEDINGS

9.1 Rejection of the OMC Agreement

- (a) If:
 - (i) the OMC Agreement is rejected by a trustee or debtor-in-possession in, or terminated as a result of, any bankruptcy or insolvency proceeding involving the OMC Contractor; and
 - (ii) within one hundred fifty (150) days after such rejection or termination, the Collateral Agent requests or certifies in writing to the Department that the Collateral Agent or the Collateral Agent's permitted designee or assignee (including a Qualified Substitute OMC Contractor) intends to perform the obligations of the OMC Contractor as and to the extent required under the OMC Agreement,

the Department will execute and deliver to the Collateral Agent (or any Substitute satisfying the requirements of this Agreement if directed to do so by the Collateral Agent) a new OMC Agreement. The new OMC Agreement must contain term, conditions and

limitations which are the same as those of the OMC Agreement, except for any obligations that have been fulfilled by the OMC Contractor, any party acting on behalf of or stepping-in for the OMC Contractor or the Collateral Agent prior to such rejection or termination. References in this Agreement to the OMC Agreement will be deemed also to refer to any such new OMC Agreement.

- (b) The effectiveness of any new OMC Agreement referred to in Section 9.1(a) (Rejection of the OMC Agreement) will be conditional upon the Collateral Agent first reimbursing the Department with respect to its costs incurred in connection with the execution and delivery of such new OMC Agreement.

9.2 **Extension of Cure Period Completion Date**

If:

- (a) the Collateral Agent is prohibited by any court order, bankruptcy or insolvency proceedings from remedying the OMC Contractor Default that is the subject of a Department Notice; or
- (b) the Collateral Agent pursues with good faith, diligence and continuity lawful processes and steps to obtain the appointment of a court receiver for the Project and possession, custody and control of the Project, but despite such efforts the Collateral Agent is unable to obtain such possession, custody and control of the Project,

each of the relevant Cure Period Completion Date and Initial Period will be extended by a period of time equal to the shorter of (i) the period of such prohibition and (ii) one hundred fifty (150) days.

10. **TERMINATION OF THIS AGREEMENT**

This Agreement will remain in effect until the earliest to occur of:

- (a) the Discharge Date;
- (b) the time at which all of the parties' respective obligations and liabilities under the OMC Agreement and this Agreement have expired or have been satisfied in accordance with the terms of the OMC Agreement and this Agreement; and
- (c) any assignment to a Substitute has occurred under Section 7 (Substitution) and the Department has entered into an equivalent direct agreement on substantially the same terms as this Agreement, except that the OMC Contractor has been replaced as a party by the Substitute.

11. **RESERVED**

12. **RESERVED**

13. **REPRESENTATIONS AND WARRANTIES**

- (a) The undersigned signatory for the Collateral Agent represents and warrants that he or she is an officer of the Collateral Agent and that he or she has full and complete authority to enter into this Agreement on behalf of the Collateral Agent.
- (b) The Collateral Agent represents and warrants that the Collateral Agent has full power and authority to execute and perform its obligations under this Agreement.
- (c) The undersigned signatory for the OMC Contractor represents and warrants that he or she is an officer of the OMC Contractor and that he or she has full and complete authority to enter into this Agreement on behalf of the OMC Contractor.
- (d) The OMC Contractor represents and warrants that the OMC Contractor has full power and authority to execute and perform its obligations under this Agreement.
- (e) The Department represents and warrants that:
 - (i) the Department has the full power and authority to execute, deliver and perform this Agreement and to carry out the transactions contemplated by this Agreement;
 - (ii) the execution, delivery and performance of this Agreement, and the performance of the transactions contemplated in this Agreement, have been duly and validly authorized by all necessary action of the Department; and
 - (iii) this Agreement has been duly and validly executed and delivered by the Department, and constitutes a valid and binding obligation of the Department, enforceable against the Department in accordance with its terms, subject only to applicable bankruptcy, insolvency and similar laws affecting the enforceability of the rights of creditors generally and the general principles of equity.
- (f) The Department represents and warrants to the Collateral Agent that:
 - (i) there is no Department Default or, to its knowledge, OMC Contractor Default, there exists no event or condition that would, with the giving of notice or passage of time or both, constitute such a Department Default or, to its knowledge, a OMC Contractor Default, and no Department Default or, to its knowledge, OMC Contractor Default has occurred prior to the date of this Agreement; and
 - (ii) each representation and warranty made by it under Section [●] (*Department Representations and Warranties*) of the OMC Agreement is true and correct as of the date of this Agreement.

14. **GOVERNING LAW AND JURISDICTION**

14.1 **Governing Law**

This Agreement will be governed by and construed in accordance with the laws of the State of North Carolina.

14.2 **Submission to Jurisdiction**

Without prejudice to the Department's right under Applicable Law to initiate a claim in different forum and subject to Article 57 (*Dispute Resolution*) of the OMC Agreement, the parties hereto agree that the exclusive original jurisdiction and venue for any legal action or proceeding, at law or in equity, arising out of this Agreement shall be the United States District Court for the Eastern District of North Carolina.

14.3 **Waiver of Jury Trial**

THE PARTIES HEREBY KNOWINGLY, IRREVOCABLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHTS THAT ANY MAY HAVE TO A TRIAL BY JURY WITH RESPECT TO ANY ACTION, PROCEEDING, COUNTERCLAIM OR DEFENSE BASED ON THIS AGREEMENT, OR ARISING OUT OF, UNDER OR IN ANY CONNECTION WITH THIS AGREEMENT, OR WITH RESPECT TO ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER ORAL OR WRITTEN) OR ACTIONS OF ANY PARTY HERETO RELATING TO THIS AGREEMENT. THIS PROVISION IS A MATERIAL INDUCEMENT FOR ALL PARTIES ENTERING INTO THIS AGREEMENT. THIS PROVISION APPLIES ONLY TO SUITS BETWEEN THE PARTIES ARISING OUT OF OR RELATED TO THIS AGREEMENT AND DOES NOT APPLY TO THIRD PARTY CLAIMS OR SUITS BY OR ON BEHALF OF THE PARTIES FOR PROJECT PROPERTY ACQUISITION AND/OR CONSTRUCTION CONTRACT CLAIMS AND DEFENSES. Each of the Parties (a) certifies that no representative, agent, attorney or any other Person has represented, expressly or otherwise, that such other Person would not, in the event of any suit, action or proceedings relating to this Agreement, seek to enforce the foregoing waiver and (b) acknowledges that it has been induced to enter into this Agreement by, among other things, the mutual waivers and certifications in this Section 14.3 (*Waiver of Jury Trial*).

15. **GENERAL PROVISIONS**

15.1 **Public Information and Confidentiality**

- (a) The Department and the Collateral Agent will comply with the requirements of the OMC Agreement with regard to the public disclosure of information as if any reference to the OMC Contractor in the OMC Agreement was a reference to the Collateral Agent.
- (b) The Department approves disclosure by the OMC Contractor to the Collateral Agent, the Lenders and other agents of the Lenders, of the information, documents, reports, data or records provided to, or prepared by, the OMC Contractor under the OMC Agreement, or prepared by any OMC Contractor's Contractor under the relevant Contract.

15.2 Amendments and Waivers

- (a) No amendment of this Agreement, and no waiver of any term, covenant or condition of this Agreement, will be effective unless in writing and signed by the parties to this Agreement.
- (b) The exercise by a party of any right or remedy provided under this Agreement or Applicable Law will not waive or preclude any other or further exercise thereof or the exercise of any other right or remedy. No waiver by any party of any right or remedy under this Agreement or Applicable Law will be deemed to be a waiver of any other or subsequent right or remedy under this Agreement or Applicable Law. The consent by one party to any act by the other party requiring such consent will not be deemed to render unnecessary the obtaining of consent to any subsequent act for which consent is required, regardless of whether similar to the act for which consent is given.

15.3 Non-collusion

- (a) The Collateral Agent warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Collateral Agent, to solicit or secure this Agreement, and that it has not paid or agreed to pay any company or person any fee, Department, percentage, brokerage fee, gifts or any other consideration contingent upon or resulting from the making of this Agreement.
- (b) For breach or violation of this warranty, the Department shall have the right to terminate this Agreement without liability.

15.4 Disputes

- (a) In the event of any dispute between the Department and the Collateral Agent under this Agreement, the parties shall resolve the dispute according to the dispute resolution procedures set out in the OMC Agreement, with the Collateral Agent having the same rights and obligations as the OMC Contractor under the dispute resolution procedures set out in Article 57 (*Dispute Resolution*) of the OMC Agreement.
- (b) Nothing in Section 15.4(a) (*Disputes*) affects the Collateral Agent's rights and remedies against the OMC Contractor and the OMC Contractor's Interest under the Finance Documents or the procedures available to the Collateral Agent under law to exercise its security interests under the Finance Documents.

15.5 Successors and Assigns

- (a) No party to this Agreement may assign or transfer any part of its rights or obligations under this Agreement without the prior written consent of the other parties; provided, that the Collateral Agent may assign or transfer its rights and obligations under this Agreement to a successor Collateral Agent in accordance with the Finance Documents. In connection with any such assignment or transfer, the Department agrees to enter into a new direct agreement with the successor Collateral Agent on terms that are substantially the same as those of this Agreement.
- (b) This Agreement will be binding upon and inure to the benefit of the parties to this Agreement and their respective successors and permitted assigns.

15.6 **Severability**

In the event any one or more of the provisions contained in this Agreement will, for any reason, be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability will not affect any other provision of this Agreement and this Agreement will be construed as if such invalid, illegal, or unenforceable provision had never been contained in this Agreement.

15.7 **Prior Contracts Superseded**

This Agreement constitutes the sole agreement of the parties with respect to the subject matter set out in this Agreement and supersedes any prior understandings or written or oral contracts between the parties respecting such subject matter.

15.8 **Notices and Communications**

- (a) Whenever under the provisions of this Agreement it will be necessary or desirable for one party to serve any approval, notice, request, demand, report or other communication on another party, the same will be in writing and will not be effective for any purpose unless and until actually received by the addressee or unless served (i) personally, (ii) by independent, reputable, overnight commercial courier or (iii) by deposit in the United States mail, postage and fees fully prepaid, registered or certified mail, with return receipt requested, addressed as follows:

If to the Department:

North Carolina Department of Transportation

Address: [●]

Attention: [Name], [Title]

Email: [●]

Telephone: [●]

If to the OMC Contractor:

[●]

Address: [●]

Attention: [●]

Email: [●]

Telephone: [●]

If to the Collateral Agent:

[•]
Address: [•]

Attention: [•]
Email: [•]
Telephone: [•]

- (b) Any party may, from time to time, by notice in writing served upon the other parties, designate an additional or a different mailing address or an additional or a different person to whom all such notices, requests, demands, reports and communications are thereafter to be addressed. Any notice, request, demand, report or other communication served personally will be deemed delivered upon receipt, if served by mail or independent courier will be deemed delivered on the date of receipt as shown by the addressee's registry or certification receipt or on the date receipt at the appropriate address is refused, as shown on the records or manifest of the United States Postal Service or independent courier.

15.9 **Effect of Breach**

Without prejudice to any rights a party may otherwise have, a breach of this Agreement will not of itself give rise to a right to terminate the OMC Agreement.

15.10 **Counterparts**

This instrument may be executed in two or more counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument.

15.11 **No Third-Party Beneficiaries**

Nothing contained in this Agreement is intended or will be construed as creating or conferring any rights, benefits or remedies upon, or creating any obligations of the parties to this Agreement toward, any person or entity not a party to this Agreement.

15.12 **No Partnership**

Nothing contained in this Agreement will be deemed to constitute a partnership between the parties to this Agreement. None of the parties shall hold itself out contrary to the terms of this Section 15.12 (No Partnership).

15.13 **No Interference**

The OMC Contractor joins in this Agreement to acknowledge and consent to the arrangements set out and agrees not to knowingly do or omit to do anything that may prevent any party from enforcing its rights under this Agreement.

15.14 **Collateral Agent Liability**

- (a) Notwithstanding anything to the contrary in this Agreement, but subject to Section 5 (Step-in Arrangements) (solely to the extent the Collateral Agent or any of its Affiliates is the Step-in Entity), Section 13 (Representations and Warranties) and Section 15.14(b)

(Collateral Agent Liability), the Collateral Agent shall not have any liability to the Department under this Agreement, unless the Collateral Agent expressly assumes such liability in writing.

- (b) The Department acknowledges and agrees that the Collateral Agent shall not be obligated or required to perform any of the OMC Contractor's obligations under the OMC Agreement, except during any Step-in Period (solely to the extent the Collateral Agent or any of its Affiliates is the Step-in Entity).

15.15 Reliance by the Department

The Department may rely upon any notice purported to be signed and delivered by or for the Collateral Agent without any obligation to the Collateral Agent, any Lender, the OMC Contractor or any third party to ascertain or investigate its authenticity, truth or accuracy.

The parties are signing this Agreement on the date stated in the introductory clause.

[Signature Pages to Follow]

SIGNATORIES

North Carolina Department of Transportation)
)
Signed by [●])
)
)

OMC Contractor)
)
Signed by [●])
for and on behalf of [●])

Collateral Agent)
)
Signed by [●])
for and on behalf of [●])

SCHEDULE 1

FORM OF STEP-IN ENTITY ACCESSION AGREEMENT

To: North Carolina Department of Transportation:
[●]

Copied to: [●]
[Lenders and other parties to Finance Documents to be listed] [insert address]

For the attention of: [●]

From: [Step-in Entity]

THE NORTH CAROLINA FIBER OPTIC BROADBAND NETWORK PROJECT STEP-IN ENTITY ACCESSION AGREEMENT

Ladies and Gentlemen:

Reference is made to (i) the Operations, Maintenance and Commercialization Agreement for the I-95, U.S. 70 & U.S. 74 Broadband Infrastructure Project, dated [●] (as amended, supplemented or otherwise modified from time to time, the “OMC Agreement”), between the North Carolina Department of Transportation (the “Department”) and [●] (the “OMC Contractor”) and (ii) the Lenders Direct Agreement, dated [●] (as amended, supplemented or otherwise modified from time to time, the “Lenders Direct Agreement”), between the Department, the OMC Contractor and [●], as the Collateral Agent.

Terms used but not otherwise defined in this Step-in Entity Accession Agreement will have the meaning given to them in the Lenders Direct Agreement.

We confirm that we are a Step-in Entity pursuant to Section 5 (*Step-in Arrangements*) of the Lenders Direct Agreement.

1. We acknowledge and agree that, upon and by reason of our execution of this Step-in Entity Accession Agreement, we will become a party to the OMC Agreement and the Lenders Direct Agreement jointly and severally with the OMC Contractor as a Step-in Entity and, accordingly, will have the rights and powers and assume the obligations of the OMC Contractor under the OMC Agreement and the Lenders Direct Agreement in accordance with the terms of the Lenders Direct Agreement.
2. Our mailing address, telephone number and address for electronic mail for the purposes of receiving notices are as follows:

[contact details of Step-in Entity]
3. This Step-in Entity Accession Agreement will be governed by and construed in accordance with the laws of the State of North Carolina. Without prejudice to the Department’s right under Applicable Law to initiate a claim in different forum and subject to Article [●] (*Dispute Resolution*) of the OMC Agreement, we agree that the exclusive original jurisdiction and venue for any legal action or proceeding, at law or in equity, arising out of this Agreement shall be the United States District Court for the Eastern District of North Carolina.

The terms set out in this Step-in Entity Accession Agreement are agreed to: [*Step-in Entity*]

By

Name:

Title:

SCHEDULE 2

FORM OF SUBSTITUTE ACCESSION AGREEMENT

[Date]

To: North Carolina Department of Transportation:

[●]

Copied to: [●]

From: [Substitute]

THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION FIBER OPTIC BROADBAND NETWORK PROJECT SUBSTITUTE ACCESSION AGREEMENT

Ladies and Gentlemen:

Reference is made to (i) the Operations, Maintenance and Commercialization Agreement for the I-95, U.S. 70 & U.S. 70 Broadband Infrastructure Project, dated [●] (as amended, supplemented or otherwise modified from time to time, the "OMC Agreement"), between the North Carolina Department of Transportation (the "Department") and [●] (the "OMC Contractor") and (ii) the Lenders Direct Agreement, dated [●] (as amended, supplemented or otherwise modified from time to time, the "Lenders Direct Agreement"), between the Department, the OMC Contractor and [●], as the Collateral Agent.

Terms used but not otherwise defined in this Substitute Accession Agreement will have the meaning given to them in the Lenders Direct Agreement.

1. We confirm that we are a Substitute pursuant to Section 7 (*Substitution*) of the Lenders Direct Agreement.
2. We acknowledge and agree that, upon and by reason of our execution of this Substitute Accession Agreement, we will become a party to the OMC Agreement and the Lenders Direct Agreement as a Substitute and, accordingly, will have the rights and powers and assume the obligations of the OMC Contractor under the OMC Agreement and the Lenders Direct Agreement in accordance with the terms of the Lenders Direct Agreement.
3. Our mailing address, telephone number and address for electronic mail for the purposes of receiving notices are as follows:

[contact details of Substitute]

4. This Substitute Accession Agreement will be governed by and construed in accordance with the laws of the State of North Carolina. Without prejudice to the Department's right under Applicable Law to initiate a claim in different forum and subject to Article [●] (*Dispute Resolution*) of the OMC Agreement, we agree that the exclusive original jurisdiction and venue for any legal action or proceeding, at law or in equity, arising out of this Agreement shall be the United States District Court for the Eastern District of North Carolina.

The terms set out in this Substitute Accession Agreement are hereby agreed to: [*Substitute*]

By:

Name:

Title:

Agreed for and on behalf of:

North Carolina Department of Transportation

By:

Name:

Title:

EXHIBIT 3
RESERVED

EXHIBIT 4
RESERVED

EXHIBIT 5

KEY PERSONNEL

Position Title	Primary Functions/Duties	Period during which Position is to be Filled	Minimum Qualifications/ Experience	Name of Initial Individual
[•]	[•]	[•]	[•]	[•]

EXHIBIT 6

COMPENSATION ON TERMINATION¹⁵

1. COMPENSATION ON TERMINATION FOR CONVENIENCE, DEPARTMENT DEFAULT OR COURT RULING

On termination of the OMC Agreement pursuant to Section 56 (Termination for Convenience), Section 57 (Termination for Department Default), or Section 61.1 (Termination by Court Ruling), the Department shall, subject to and in accordance with Section 5 (Miscellaneous Compensation Provisions) of this Exhibit 6, pay to the OMC Contractor an amount (the “Department Termination Sum”) calculated at the Early Termination Date (without double-counting) as follows:

- (a) Fair Market Value of the OMC Contractor’s Interest (as determined pursuant to Section 5.1 (Determination of Fair Market Value) of this Exhibit 6 (Compensation on Termination)); plus
- (b) Net Lenders’ Liabilities; plus
- (c) Subcontractor Breakage Costs; plus
- (d) without double-counting, the amount of the OMC Contractor’s gross revenue (if any) that has been received but not earned (in accordance with US GAAP) under Commercial Agreements and that will be refunded from the OMC Contractor to its customers as a direct result of the Early Termination; plus
- (e) Redundancy Payments for employees of the OMC Contractor that have been or will be reasonably incurred by the OMC Contractor as a direct result of termination of this Agreement; minus
- (f) any Liquidated Damages assessed but not paid.

2. COMPENSATION ON TERMINATION FOR EXTENDED FORCE MAJEURE, UNINSURABILITY OR MATERIALLY ADVERSE FCC ORDER

On termination of the OMC Agreement pursuant to Section 59 (Termination for Extended Force Majeure), Section 60 (Termination for Uninsurability), or Section 61.3 (Termination for Materially Adverse FCC Order) the Department shall, subject to and in accordance with Section 5 (Miscellaneous Compensation Provisions) of this Exhibit 6, pay to the OMC Contractor an amount (the “No Fault Termination Sum”) calculated at the Early Termination Date (without double-counting) as follows:

- (a) The greater of zero (0) or the sum of:
 - (i) all amounts paid to the OMC Contractor by way of equity to the capital of the OMC Contractor less dividends and other distributions paid by the OMC Contractor to the Equity Members, (except to the extent deducted under clause (a)(ii)); plus

¹⁵ **Note to Proposers:** The terms of Exhibit 6 have been set assuming the Preferred Proposer will put in place a non-recourse project finance structure that includes debt. The Department will revise the terms of Exhibit 6 as needed to accommodate a different financing structure.

- (ii) the principal amount of all Equity Members Debt less an amount equal to the aggregate of all payments of interest made by the OMC Contractor under the Equity Member Funding Agreements; plus
- (b) the amount of gross revenue (if any) which has been received but not earned (in accordance with US GAAP) under Commercial Agreements and will be refunded from the OMC Contractor to its customers as a direct result of the Early Termination), less, without double-counting (A) any reserves held by the OMC Contractor of such unearned revenue and (B) any distributions or other types of payments whatsoever (including payments subject to a contingency) which were made to Equity Members prior to Early Termination using such unearned revenue; plus
- (c) Net Lenders' Liabilities; plus
- (d) Subcontractor Breakage Costs; plus
- (e) Redundancy Payments for employees of the OMC Contractor that have been or will be reasonably incurred by the OMC Contractor as a direct result of termination of this Agreement; minus
- (f) any Liquidated Damages assessed but not paid.

3. RESERVED

4. COMPENSATION ON TERMINATION FOR OMC CONTRACTOR DEFAULT

On termination of the OMC Agreement pursuant to Section 58 (Termination for OMC Contractor Default), the Department shall, subject to and in accordance with Section 5 (Miscellaneous Compensation Provisions) of this Exhibit 6, pay to the OMC Contractor an amount (the "OMC Contractor Default Termination Sum") calculated at the Early Termination Date (without double-counting) as follows:

- (a) eighty percent (80%) of the amount of Lenders' Liabilities as of the Early Termination Date; minus
- (b) all Losses incurred by the Department as a result of such termination, including but not limited to:
 - (i) the costs to rectify any nonconforming work and any funds reasonably necessary to ensure that the future costs of O&M Work and the fulfillment of the Handback Requirements will not exceed the costs shown in the Base Case Financial Model;
 - (ii) the costs of procuring a new developer to undertake the Work; and
 - (iii) transition costs;
 minus
- (c) an amount equal to the sum of the following amounts:
 - (i) Deferred Equity Amounts (if any);
 - (ii) Insurance Proceeds; and

- (iii) Account Balances.

5. MISCELLANEOUS COMPENSATION PROVISIONS

5.1 Determination of Fair Market Value

Whenever Fair Market Value of the OMC Contractor's Interest is required to be determined, it shall be determined as of the Early Termination Date as follows:

- (a) Within thirty (30) days after a request by either Party, the Department and the OMC Contractor shall jointly appoint an independent third party appraiser (the "Appraiser") to determine the Fair Market Value of the OMC Contractor's Interest. The Appraiser must be nationally recognized and experienced in appraising similar assets. If the Parties fail to appoint the Appraiser by such deadline, each party shall appoint, within ten (10) days after such deadline, an independent third-party appraiser, and such appraisers shall jointly appoint, within fifteen (15) days after their appointments, the Appraiser. If such appraisers fails to appoint the Appraiser by such deadline, either Party may petition the [court of competent jurisdiction] to appoint the Appraiser. The Department and the OMC Contractor shall pay in equal shares the reasonable costs and expenses of the Appraiser; provided, each Party shall pay the costs of their own appraiser (contemplated in the third sentence of this paragraph).
- (b) The Appraiser shall appraise Fair Market Value on the basis of the assumptions contained in the definition of Fair Market Value and by taking into account (i) the terms of this Agreement, (ii) the condition of the Project, (iii) the OMC Contractor's record regarding compliance with the Performance Requirements, but only for the purpose of evaluating and taking into account the effect of such record on the condition and viability of the Project, (iv) the projected revenues and costs of the Project for the remainder of the Term had the OMC Agreement not be terminated, as determined by the Appraiser and (v) such other factors as the Appraiser considers relevant. The Appraiser will determine the data inputs and data values.
- (c) In conducting the appraisal, and before issuing a draft appraisal report, the Appraiser shall afford each Party with a reasonable and comparable opportunity to provide the Appraiser with information, data, analysis and reasons supporting each Party's view on the Fair Market Value. The Appraiser shall then deliver to both Parties a draft appraisal report. The Parties shall have fifteen (15) days after receipt of the draft appraisal report to comment thereon. Not later than fifteen (15) days after the opportunity to comment has expired, the Appraiser shall consider and evaluate all comments, prepare a final appraisal report stating the Fair Market Value, and deliver the final appraisal report to both Parties.
- (d) Either Party may Dispute the Appraiser's determination of Fair Market Value within thirty (30) days after receiving the final appraisal report, which Dispute shall be resolved according to the Dispute Resolution Procedures. Failure to timely Dispute the final appraisal report shall constitute acceptance thereof. In resolution of any such Dispute, the Appraiser's determination shall be given substantial weight in evidence absent failure to properly apply the terms of this Agreement or Applicable Law.

5.2 Set-Off on Termination

Notwithstanding any other provision of this Agreement, the Department may not set off any amount against the Department Termination Sum or the No Fault Termination Sum if the effect of such set off would be to reduce the amount payable to the OMC Contractor to less than an amount equal to the Net Lenders' Liabilities. Subject to the foregoing sentence of this Section 5.2 (Set-Off on Termination), the Department may set off any Revenue Sharing Payments against any Termination Sum payable by the Department to the OMC Contractor.

5.3 Payment of Termination Sum by Department

Subject to Section 72 (Financial Obligations of the Department) of the OMC Agreement, the Department shall pay any Termination Sum within sixty (60) days after such amount is finally agreed or determined. Such payments shall be made together with any interest that may accrue under the Finance Documents between the Early Termination Date and the date of payment of the Termination Sum by the Department.

5.4 Payment of Termination Sum by OMC Contractor

The OMC Contractor shall pay the Termination Sum within sixty (60) days after such amount is finally agreed or determined.

5.5 Transfer of Key Assets

As a condition precedent to the payment of any Termination Sum by the Department, the Department may require the OMC Contractor to (i) transfer its rights, title and interest in and to the Key Assets to the Department and (ii) make available to the Department as of the Early Termination Date the benefit of all warranties provided to the OMC Contractor.

5.6 Exclusivity of Remedy

Any Termination Sum irrevocably paid by the Department to the OMC Contractor or the OMC Contractor to the Department will be in full and final settlement of each Party's rights and claims against the other for breaches and termination of this OMC Agreement whether under contract, tort, restitution or otherwise, but without prejudice to:

- (a) any accrued liability of either Party to the other that arose prior to the Early Termination Date, but not from the termination itself, to the extent such liability has not already been taken into account in the calculation of the Termination Sum; and
- (b) any liabilities arising with respect to any breach by either Party after the Early Termination Date of any obligation under this Agreement that survives the Early Termination Date, to the extent not taken into account in the calculation of the Termination Sum.

5.7 Lenders' Liabilities

The Department shall be entitled to rely on a certificate of the Collateral Agent as conclusive evidence as to the amount of the Lenders' Liabilities outstanding at the relevant time.

EXHIBIT 7

PRINCIPLES FOR CALCULATION OF CHANGE IN COSTS

Any Change in Costs will be calculated in accordance with the following principles:

1. OMISSION AND SUBSTITUTION OF WORK

Where a Relevant Event involves the omission of work and its substitution with new work, the incremental costs incurred by the OMC Contractor must exclude the value of the new work to the extent that the value of the new work is the same as the value of the work omitted.

2. INCREMENTAL COSTS AND REVENUES ONLY

Changes in Costs must be determined on an incremental basis where:

- (a) in the case of an increase in costs, only costs that would not be incurred but for the Relevant Event are taken into account; and
- (b) in the case of a reduction in costs, only savings that would not have accrued but for the Relevant Event are taken into account.

3. FAIR AND REASONABLE, ARM'S LENGTH ARRANGEMENTS

All increases and decreases in costs included in the calculation must:

- (a) be fair and reasonable; and
- (b) reflect commercial arm's length arrangements.

4. NONCOMPLIANCE WITH MITIGATION AND OTHER OBLIGATIONS

All Changes in Costs will:

- (a) exclude any incremental costs which would not have been incurred or suffered; and
- (b) include any cost savings which would have been derived,

had the OMC Contractor complied with its obligations (including its obligations to mitigate) under the OMC Agreement.

5. MARGINS

- (a) The OMC Contractor is entitled to claim margin on costs that it incurs in amount not to exceed three percent (3%) of such costs.
- (b) No Key Contractor is entitled to claim margin on the costs that it incurs in excess of the margin under the relevant Key Contract as at the Closing Date.

Appendix Part C – OMC: Acknowledgement of Operations, Maintenance and Commercialization Agreement Terms Review

Appendix Part C – OMC: Acknowledgment of Operations, Maintenance and Commercialization Agreement Terms Review

North Carolina Department of Transportation
I-95 & U.S. 70 Broadband Infrastructure Project
TIP R-5777D, I-5986C, HO-0002A, B & C



Instructions: Proposers must acknowledge that they have reviewed the Operations, Maintenance and Commercialization Agreement Terms for the Project and identify any changes or specific modifications in writing that the Proposer considers essential for entering into a Contract Agreement with the Department for this Project. The Department reserves the right to consider and accept, in its sole and absolute discretion, to requested changes in the Operations, Maintenance and Commercialization Agreement Terms.

The Operations, Maintenance and Commercialization Agreement Terms were reviewed in connection with this RFP.

Authorized Signature: _____ Date: _____

Print Name: _____ Title: _____

Firm Name: _____

List all proposed changes / modifications to the Operations, Maintenance and Commercialization Agreement Terms (if any) below:

- 1.
- 2.
- 3.

Appendix Part D – OMC: Price Proposal for O&M and Commercialization

Please refer to attachment “NC Fiber Final RFP_Appendix Part D - OMC Price Proposal for OM and Commercialization.xlsx”

Appendix Part E – P3: Comprehensive Agreement Terms



NORTH CAROLINA
Department of Transportation

**North Carolina Department of Transportation
I-95, US-70 & US-74 Broadband Infrastructure Project
(TIP R-5777D, I-5986C, HO-0002A, B & C)**

APPENDIX PART E – P3

Comprehensive Agreement Terms

This document presents a detailed overview of the anticipated terms of the Comprehensive Agreement for the Project (the “CA Terms”). The Comprehensive Agreement will set forth the Developer’s rights and obligations relating to the design, construction, operations, maintenance, and commercialization of the Project.

PART A — PRELIMINARY		
1.	Definition	Unless the context otherwise requires, capitalized terms and acronyms used in the CA Terms have the meanings given in <u>Exhibit 1 (Definitions)</u> .
2.	Term	<p>(a) The Comprehensive Agreement (and all of the rights and obligations under the Comprehensive Agreement) will come into effect on the Closing Date and continue until the earlier of: (i) the Expiry Date, which may be extended by the Department in accordance with <u>clause (b)</u> below; or (ii) the Early Termination Date (the “<u>Term</u>”).</p> <p>(b) At any time after the Project Substantial Completion Date, the Developer will be entitled to request an extension of the Expiry Date. Any such request must be made in writing, and set forth a business case describing the Developer’s plan for providing Commercialization Services during the period of any such extension, including: (i) the additional capital investment, if any, to be made by the Developer; (ii) a description of the Commercialization Services to be provided by the Developer; (iii) the amount of operations and maintenance costs the Developer expects to incur; (iv) the amount of gross revenues the Developer expects to generate; and (v) the benefits to the Department of granting the requested extension, including the increase in revenue sharing payments to the Department. Following the Developer’s submission of its request to extend the Expiry Date, the Developer will confer with the Department and provide such additional information as the Department may reasonably request with respect to such proposed extension. Within ninety (90) days of the Department’s receipt of the Developer’s request (including the business case that addresses the requirements set forth in the preceding sentence), the Department will determine, in its sole discretion, whether to grant the requested extension. If the Department grants the requested extension, the Department and the Developer will work in good faith to promptly negotiate and execute an amendment to the Comprehensive Agreement setting forth the terms of the extension, including the duration of the extension and the relevant adjustments to the revenue sharing payments to be made to the Department. In no event shall the duration of any such extension(s) cause the Term to extend beyond the maximum period set forth in N.C. Gen. Stat. § 136-18(46).</p>
3.	Conditions Precedent to Closing Date	<p>The Comprehensive Agreement will set forth conditions precedent to the Closing Date usual and customary for the Developer’s plan of finance (i.e., corporate finance or non-recourse project finance). Such conditions precedent will include, if required for a non-recourse project finance structure, the Department’s execution and delivery of a Lenders Direct Agreement, in the form set forth in <u>Exhibit 2 (Form of Lenders Direct Agreement)</u>.</p> <p>The Department is not prescribing the structure of the Developer’s plan of finance (i.e., corporate finance or non-recourse project finance).</p>
4.	Representations and Warranties	The Comprehensive Agreement will set forth usual and customary representations and warranties of the Developer and the Department.
5.	Financing	The repayment of any debt or equity arranged by the Developer to finance the Project will be the sole responsibility of the Developer.
6.	Collaborative Nature of the Project	Each Party agrees to cooperate, at its own expense, with the other Party in the fulfillment of the purposes and intent of the Comprehensive Agreement. Neither Party shall be under any obligation to perform any of the other Party’s obligations under the Comprehensive Agreement.

7.	Designation of Representatives	The Department and the Developer shall each designate an individual or individuals who will be authorized to make decisions and bind the Parties on matters relating to the Comprehensive Agreement. A Party may change its designation from time to time by a subsequent notice in writing delivered to the other Party.
PART B — GRANT OF RIGHTS, PROJECT SITE, & OTHER GENERAL REQUIREMENTS		
8.	Grant of Rights	<p>(a) Subject to the terms and conditions of the Comprehensive Agreement, the Department hereby grants to the Developer the exclusive right, and the Developer accepts such right and acknowledges its obligation, to (i) develop, design, construct and finance the Broadband Infrastructure and (ii) operate and maintain the Broadband Infrastructure, in each case, in accordance with the terms of the Comprehensive Agreement (including, without limitation, the Technical Requirements).</p> <p>(b) Subject to the Developer’s compliance with the Comprehensive Agreement (including, without limitation, the requirements of <u>Section 38 (Payments to Department)</u>), from the Network Segment Substantial Completion Date with respect to a Network Segment until the end of the Term, the Developer shall have:</p> <p>(i) to the fullest extent permitted by Applicable Law, and subject to the terms of the Comprehensive Agreement, an exclusive right to use the Developer Infrastructure on such Network Segment solely for the purpose of conducting the Commercial Activities; and</p> <p>(ii) a non-exclusive right to use any Department Junction Box in such Network Segment necessary for the operation of the Developer Fibers pursuant to <u>Section 8(b)(i) (Grant of Rights)</u>, subject to the right of the Department or any Governmental Entity to conduct the Operating Activities hereunder.</p> <p>(c) It is the express intent and agreement of the Parties that the Comprehensive Agreement shall in no way be deemed to constitute a lease to the Developer (whether an operating lease or a financing lease) or, except as expressly provided herein, a grant (regardless of the characterization of such grant, including by way of easement, purchase option, conveyance, lien or mortgage) in each case, of any right, title, interest or estate in the Broadband Infrastructure, the Project Site, or of any assets incorporated into, appurtenant to, or in any way connected with the Project. It is the express agreement and intent of the Parties that the Developer shall not be treated as or deemed to be the legal or equitable owner of the Broadband Infrastructure or the Project Site for any purpose under the Comprehensive Agreement. The Developer’s rights hereunder are derived solely from its status as a Developer and independent contractor as described in the Comprehensive Agreement, and not as a tenant, lessee, easement holder, optionee, lienor, mortgagee, purchaser or owner of any other interest in real property. The payments to be received by the Developer under the Comprehensive Agreement are not payments in the nature of rent or fees with respect to the real property or purchase price of real property.</p> <p>(d) Any interconnection between the Developer Fibers and any facility of the Department will be made by the Developer only in accordance with the provisions of the Technical Requirements. Nothing herein shall require the Department to provide any equipment used to transmit signals over or “light” the Developer Fibers. Except as set forth in the Technical Requirements or as may be separately agreed to in a facility services agreement between the Department and the Developer, the Developer is solely responsible for providing, installing and maintaining all electronics, including optical transmitters, receivers and repeaters, used to “light” the Developer Fibers.</p>

		<p>(e) Neither any Developer Entity-Related Entity nor any Commercial End-User (or any of its customers) shall assess any rate, rent, fee, charge, fine or other amount in respect of vehicular usage of the Department’s highway network. In addition, neither any Developer-Related Entity nor any Commercial End-User shall develop, design, construct, finance, operate, maintain, or implement the Project or use the Developer Infrastructure in a manner that would materially adversely affect the operations of the Department’s highway network or the Department’s use of the Department Infrastructure.</p> <p>(f) The Developer shall not engage in any business or activity other than business or activities conducted for the purposes of the Project or otherwise expressly permitted under the Comprehensive Agreement.</p> <p>(g) Without limiting any other right of the Department hereunder:</p> <p>(i) the Department may use the Department Infrastructure as part of the Department’s operation of the Department’s highway network (including, without limitation, the operation of electronic toll collection systems, intelligent transportation systems, intelligent vehicle highway systems, traffic cameras, dynamic message signs, autonomous vehicle systems, and connected vehicle systems);</p> <p>(ii) the Department may provide Governmental Entities with access to the Department Infrastructure for purposes of carrying out law enforcement activities, conducting emergency response, and promoting public safety, in each case on the Department’s highway network or in connection with the operation of the Department’s highway network; and</p> <p>(iii) any Governmental Entity may use the Department Infrastructure for the purposes described in clause (ii) of this <u>Section 8(g) (Grant of Rights)</u> as authorized and approved by the Department,</p> <p>(such activities, collectively, the “<u>Operating Activities</u>”).</p>
9.	Certain Covenants and Confirmations	<p>(a) To the fullest extent permitted by Applicable Law, the Department agrees that it shall not use, and it shall not permit any other Person to use, any part of the Department Infrastructure in any manner that directly competes with the Developer’s performance of the Commercial Activities; <i>provided that</i>, for the avoidance of doubt, the Parties agree that none of the Operating Activities violate (or shall be deemed to violate) this <u>Section 9(a) (Certain Covenants and Confirmations)</u>.</p> <p>(b) Nothing herein shall constitute a grant to the Developer of an exclusive right of physical access to the Department Right-of-Way, including the Project Site.</p> <p>(c) Subject to <u>Section 9(a) (Certain Covenants and Confirmations)</u>, the Department may grant to any Telecommunications Carrier a right of physical access to the Department Right-of-Way (other than to the Developer Infrastructure) in order for such Telecommunications Carrier to construct facilities that provide, and in order to provide, wholesale or retail Telecommunications Services.</p>

		<p>(d) The Developer agrees that:</p> <ul style="list-style-type: none"> (i) (x) to the extent it provides wholesale access to the Developer Fibers to any Telecommunications Carrier, the Developer shall do so at rates set by the Developer on a non-discriminatory basis and shall otherwise provide access to the Developer Infrastructure and charge rates (if any) therefor in accordance with Applicable Law and (y) without prejudice to the rights of the Department hereunder, the Department shall have the right to enforce this clause (i) for the benefit of any Telecommunications Carrier; (ii) wherever the Developer conducts Commercial Activities over the Developer Infrastructure, the Developer Infrastructure shall house capacity of at least [●]¹ strands of fiber optic cable; and (iii) the Developer will offer to the Department a right of first refusal with respect to capacity made available by the Developer for Commercialization Services.² <p>(e) At all times during the Term, the Developer shall maintain a list of each Commercial Agreement that is in effect (the “<u>Commercial Agreements Register</u>”) and shall provide to the Department a copy of the then-current version of such list within three (3) Business Days of the Developer’s receipt of a request from the Department for a copy of such list. Such list shall include:</p> <ul style="list-style-type: none"> (i) the effective date and the termination date of such Commercial Agreement; (ii) the amount of pre-payment, if any, made by the Commercial End-User to the Developer; and (iii) a description of the service being provided by the Developer to the Commercial-End User. <p>(f) If the Department receives an Initial Facilities Installation Proposal from any Person other than the Developer, then, subject to Applicable Law, the Department will promptly notify the Developer and refer such Person to the Developer so that the Developer and such Person may negotiate terms of service over the Developer Infrastructure; <i>provided</i>, that after the fiftieth (50th) day following the date of such notice from the Department, the Department may negotiate, accept or reject such Initial Facilities Proposal in its sole discretion; <i>provided further</i>, that, to the fullest extent permitted by Applicable Law, the Developer will not be required by the Department to grant access to the Developer Infrastructure under any such Initial Facilities Installation Proposal.</p> <p>(g) The Department shall not assist the Developer in the acquisition of any additional property rights outside of the Department Right-of-Way necessary to conduct Commercial Activities. Notwithstanding any other provision of the Comprehensive Agreement, any such additional property rights acquired by the Developer shall be retained by the Developer.</p> <p>(h) The Department may, in its sole discretion, permit the Developer to use Department-owned land (other than highway right-of-way) for the installation of Developer Fibers and other commercialization assets.</p>
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10.	Revenues from Commercial Activities	The Developer acknowledges and agrees that, except to the extent expressly provided otherwise in the Comprehensive Agreement, (i) the Developer bears all risk relating to the amount of revenues that may be generated from the Commercial Activities and (ii) Department has no financial responsibility whatsoever to the Developer or otherwise if the amount of such revenues is insufficient to pay any costs or expenses of the Developer, including, but not limited to, the repayment of any debt or equity arranged by the Developer to finance the Project.
11.	Cellular Connected Vehicle Sites	<p>(a) The Department anticipates that the scope of the D&C Work will include installation of a limited number of cellular connected vehicle sites at the I-95/I-40 interchange (such sites, the “<u>Department Connected Vehicle Sites</u>”). Subject to the terms of <u>Section 8 (Grant of Rights)</u>, the Developer will have the right to commercialize the network capacity of the Department Connected Vehicle Sites not otherwise reserved for the Department’s use.</p> <p>(b) The Developer will have the right to propose construction of additional cellular connected vehicle sites, at its sole cost and expense, subject to the limitations on the construction of such facilities set forth in N.C. Gen. Stat. § 136-18.3A (such sites, the “<u>Developer Connected Vehicle Sites</u>”). The Department shall not assist the Developer in the acquisition of any additional property rights outside of the Department Right-of-Way necessary to accommodate any Developer Connected Vehicle Sites.</p> <p>(c) The Developer will provide the Department with cellular data from the Department Connected Vehicle Sites and the Developer Connected Vehicle Sites (if any) for transportation purposes, including traffic management and incident response.</p>
12.	Access to the Project Site and the Broadband Infrastructure	<p>(a) Subject to <u>clause (b)</u> below, the Department shall, at its own cost, obtain and provide the Developer-Entities with:</p> <ul style="list-style-type: none"> (i) access to the Project Site from the Closing Date until the end of the Term; and (ii) access to the Broadband Infrastructure from the Closing Date until the end of the Term, <p>for the sole purpose of performing their obligations and exercising their rights under the Comprehensive Agreement.</p> <p>(b) The Developer acknowledges that installation of the Project is subject to Department regulations, polices, and procedures governing the encroachment and installation of utilities on the Department’s right-of-way, as well as the applicable provisions of federal law, including the regulations of the Federal Highway Administration. The Developer thus agrees that, prior to such installation, it will execute a modified encroachment agreement with the Department, the terms of which are subject to the Department’s sole discretion, to ensure that installation of the Project does not interfere with the public highway purposes of the Department’s right-of-way and is carried out in accordance with all Applicable Law, policies, and procedures.³</p>

¹ **Note to Proposers:** Each Proposer to propose the minimum number of strands it anticipates needing for resale capacity.

² **Note to Proposers:** Provision included pursuant to the requirements set forth in N.C. Gen. Stat. § 136-18(46). The Department anticipates the scope of the Project as presented in the RFP will provide the Department with sufficient network capacity for the duration of the Term.

³ **Note to Proposers:** As per the NCDOT Utility Policy Manual, the accommodation of utilities on highway rights-of-way allow utility owners varied degrees of authority to install and maintain their lines and facilities, in accordance with sound engineering principles and related requirements and authorization by NCDOT. Policies for

13.	Compliance with Governmental Approvals	The Developer shall at all times perform its obligations under the Comprehensive Agreement in compliance with all Governmental Approvals.
14.	Responsibility for Governmental Approvals	<p>(a) Developer Responsibility</p> <p>(i) Except with respect to the Department-Provided Approvals, the Developer is solely responsible for obtaining all Governmental Approvals (including any application, revision, modification, amendment, supplement, renewal or extension related thereto) required in connection with its performance of the Comprehensive Agreement.</p> <p>(ii) The Developer is responsible for obtaining amendments or modifications to any Department-Provided Approvals necessary to reflect the Developer’s Final Design or means and methods if the Final Design or construction means and methods deviate from the basis upon which a Department-Provided Approval was initially granted by the relevant Governmental Entity. If any necessary amendments or modifications are not permitted by the Governmental Entity, the Developer shall, at its own risk of delay and cost, revise its Final Design or means and methods as necessary to satisfy the requirements and conditions of the relevant Governmental Entity.</p> <p>(b) Department Responsibility</p> <p>(i) The Department has obtained all Department-Provided Approvals as of the Closing Date and will, subject to <u>clause (a)</u>, maintain, renew, replace, extend the validity of, or arrange necessary amendments to, the Department-Provided Approvals as necessary during the Term.</p>
15.	Cooperation with Respect to Governmental Approvals	<p>(a) If requested by the Developer, the Department shall cooperate with the Developer in relation to any application by the Developer for a Governmental Approval and shall, at the reasonable request of the Developer, and where necessary to obtain, renew, replace, extend the validity of, or arrange necessary amendments to, any Governmental Approval:</p> <p>(i) execute such documents as can only be executed by the Department;</p> <p>(ii) make such applications as required by Applicable Law, either in its own name or jointly with the Developer, as can only be made by the Department jointly by the Developer and the Department, as applicable; and</p> <p>(iii) attend meetings with appropriately qualified staff and cooperate with such Governmental Entity as reasonably requested by the Developer, in each</p>

encroachers have been created and utilized for typically approved encroaching utilities and installation methods. According to the NCDOT Utilities Accommodation Manual (1. General P. Exemptions), exceptions to standard practices are allowed with additional approval. There is no form of encroachment agreement for longitudinal installations along fully-controlled access facilities. For the purposes of the Project, the Developer will be granted special permission for the scoped installation from the Chief Engineer for exemptions from NCDOT’s standard allowable encroachment practices. Once the Comprehensive Agreement has been awarded, Form 16.2 shall be completed and submitted, along with a letter requesting the exemption, to the Chief Engineer’s office. This will result in an approval memo that will be retained in the encroachment file for NCDOT’s records. These documents will satisfy the encroachment of the installation of a longitudinal utility within fully-controlled right-of-way. Additional documentation will need to be created and agreed upon for maintenance and repairs during the life of the utility. More information is available at:

<https://connect.ncdot.gov/municipalities/Utilities/UtilitiesDocuments/Utilities%20Policy%20Manual.pdf>
<https://connect.ncdot.gov/municipalities/Utilities/Pages/Encroachment-Agreements.aspx>

		<p>case, within a reasonable period of time of being requested to do so by the Developer.</p> <p>(b) If the Department provides any assistance to the Developer pursuant to <u>clause (a)</u>, the Developer shall reimburse the Department for its reasonable third party costs associated with the provision of such assistance within thirty (30) days of receiving an invoice from the Department with respect to such costs.</p>
16.	Copies of Governmental Approvals	<p>The Developer shall promptly (and in any event within five (5) Business Days after submitting an application or obtaining a Governmental Approval) deliver to the Department true and complete copies of:</p> <p>(i) any application for a Governmental Approval submitted by the Developer (including any application to amend an existing Governmental Approval); and</p> <p>(ii) any new or amended Governmental Approval obtained by the Developer.</p>
17.	Compliance with NEPA Document	The Developer shall at all times comply with the NEPA Document.
18.	Governmental Approvals and Required Rights with respect to Commercial Activities	<p>(a) To the extent that the Developer shall exercise its rights under <u>Section 8(b) (Grant of Rights)</u>, the Developer shall exercise such rights in compliance with all Governmental Approvals and all Required Rights.</p> <p>(b) The Developer is solely responsible for obtaining any Required Right (including any application, revision, modification, amendment, supplement, renewal or extension related thereto) required in connection with the exercise of its rights under <u>Section 8(b) (Grant of Rights)</u>.</p>
PART C — DESIGN AND CONSTRUCTION		
19.	General Obligations	<p>The Comprehensive Agreement will require the Developer to undertake the D&C Work in accordance with the terms of the RFP (including Section F-1.1 and Appendix Part A) and the Department’s <i>Standard Specifications for Roads and Structures (January 2018)</i> (the “<u>Standard Specifications</u>”). With respect to the preparation of Proposals, in the event of any conflict between the provisions of the RFP, the Standard Specifications, and the CA Terms, the CA Terms will prevail.</p> <p>If the Department selects Track 2 as the Preferred Procurement Track, the Department anticipates compiling the relevant terms of the RFP relating to the D&C Work into a set of technical requirements (the “<u>Technical Requirements</u>”) and appending the Technical Requirements to the Comprehensive Agreement.</p>
20.	Notices to Proceed	
20.1	Design Work and Conditions Precedent to NTP1	<p>(a) The Department shall not be required to accept any Submittal of any Design Work with respect to a Network Segment until the Department has issued a notice (“<u>NTP1</u>”) to the Developer authorizing submittal of the Design Work for the relevant Network Segment.</p> <p>(b) Upon satisfaction of the conditions precedent set out in Part 1 (<i>Conditions Precedent to NTP1</i>) of <u>Exhibit 3 (Conditions Precedent to Notices to Proceed)</u> for a Network</p>

		<p>Segment, the Developer shall deliver a notice to the Department certifying that such conditions precedent for such Network Segment have been satisfied and requesting the issuance of NTP1 for the relevant Network Segment.</p> <p>(c) Within seven (7) Business Days after receipt of the notice provided by the Developer under <u>clause (b)</u>, the Department shall either:</p> <p>(i) if all applicable conditions precedent have been satisfied, issue NTP1 for the relevant Network Segment; or</p> <p>(ii) if any applicable conditions precedent have not been satisfied, notify the Developer in writing of which conditions precedent have not been satisfied.</p> <p>(d) If the Developer does not agree with the Department’s determination as to whether the conditions precedent to NTP1 for the relevant Network Segment have been satisfied, the Developer may submit such Dispute for resolution in accordance with the Dispute Resolution Procedures.</p>
20.2	Construction Work and Conditions Precedent to NTP2	<p>(a) The Developer shall not commence or permit commencement of the Construction Work with respect to any portion of a Network Segment until the Department has issued a notice (“<u>NTP2</u>”) to the Developer authorizing commencement of the Construction Work for such portion of such Network Segment.</p> <p>(b) Upon satisfaction of the conditions precedent set out in Part 2 (<i>Conditions Precedent to NTP2</i>) of Exhibit 3 (<i>Conditions Precedent to Notices to Proceed</i>) for a Network Segment, the Developer shall deliver a notice to the Department certifying that such conditions precedent have been satisfied for such Network Segment and requesting the issuance of NTP2 for the relevant Network Segment.</p> <p>(c) Within seven (7) Business Days after receipt of the notice provided by the Developer under <u>clause (b)</u>, the Department shall either:</p> <p>(i) if all applicable conditions precedent have been satisfied, issue NTP2 for the relevant Network Segment; or</p> <p>(ii) if any applicable conditions precedent have not been satisfied, notify the Developer in writing of which conditions precedent have not been satisfied.</p> <p>(d) If the Developer does not agree with the Department’s determination as to whether the conditions precedent to NTP2 for the relevant Network Segment have been satisfied, the Developer may submit such Dispute for resolution in accordance with the Dispute Resolution Procedures.</p>
21.	Completion	
21.1	General	<p>(a) The Comprehensive Agreement will set forth a completion deadline for the I-95/U.S. 70 Network (such date the “<u>I-95/U.S. 70 Network Substantial Completion Deadline</u>”). The Department will assess delay liquidated damages if the Developer fails to achieve Network Substantial Completion for the I-95/U.S. 70 Network on or before the I-95/U.S. 70 Network Substantial Completion Deadline (as each such date may be extended pursuant to the terms of the Comprehensive Agreement).</p> <p>(b) The Comprehensive Agreement will set forth a completion deadline for the Project (which, for clarity, means the achievement Network Substantial Completion for</p>

		<p>each of the I-95/U.S. 70 Network and the U.S. 74 Network) (such date, the “<u>Project Substantial Completion Deadline</u>”). The Department will assess delay liquidated damages if the Developer fails to achieve Project Substantial Completion on or before the Project Substantial Completion Deadline (as such date may be extended pursuant to the terms of the Comprehensive Agreement).</p>
21.2	<p>Network Segment Substantial Completion</p>	<p>(a) The Developer shall provide written notice to the Department of the anticipated date for Network Segment Substantial Completion with respect to each Network Segment:</p> <ul style="list-style-type: none"> (i) at least sixty (60) days prior to the anticipated date for Network Segment Substantial Completion of the relevant Network Segment; and (ii) at least thirty (30) days prior to the anticipated date for Network Segment Substantial Completion of the relevant Network Segment. <p>(b) The Developer shall provide a further written notice to the Department of the anticipated date for Network Segment Substantial Completion in respect of the relevant Network Segment at least fifteen (15) Business Days prior to the anticipated date for Network Segment Substantial Completion, so as to allow the Department to commence its review of those Network Segment Substantial Completion Conditions capable of being reviewed at the time of such notice. The notice must include a list of all requirements that will be achieved to allow the Department’s issuance of the Certificate of Network Substantial Completion in respect of such Network Segment.</p> <p>(c) No later than ten (10) Business Days prior to satisfying all Network Substantial Completion Conditions for the relevant Network Segment, the Developer shall meet and confer with the Department to confirm that the list of requirements provided for in <u>clause (b)</u> is in accordance with the Comprehensive Agreement. Following the initial meeting, the Developer and the Department will meet, confer and exchange information on a regular basis to allow for the Department’s orderly, timely inspection of the relevant Network Segment, review of the Final Design Documents and final Construction Documents with respect to such Network Segment, and determination of whether the Developer has satisfied all of the Network Segment Substantial Completion Conditions.</p> <p>(d) The Developer shall provide written notice to the Department once it has satisfied all of the Network Segment Substantial Completion Conditions in respect of the relevant Network Segment.</p> <p>(e) Within thirty (30) days of receiving the Developer’s notice under <u>Section 21.2(d) (Network Segment Substantial Completion)</u> in respect of the relevant Network Segment:</p> <ul style="list-style-type: none"> (i) the Department shall inspect the Network Segment, review the Final Design Documents, Construction Documents and other Submittals and conduct such other investigation as may be necessary to evaluate whether Network Segment Substantial Completion in respect of such Network Segment has been achieved; and

		<p>(ii) the Department shall:</p> <p>(A) if all the applicable Network Segment Substantial Completion Conditions have been satisfied, issue a written certificate that certifies that the Developer has achieved Network Segment Substantial Completion in respect of such Network Segment (the “<u>Certificate of Network Segment Substantial Completion</u>”); or</p> <p>(B) if any applicable Network Segment Substantial Completion Condition in respect of such Network Segment has not been satisfied, notify the Developer in writing of the reasons why Network Segment Substantial Completion has not been achieved.</p> <p>(f) If any Network Segment Substantial Completion Condition in respect of the Network Segment has not been satisfied, the Developer may resubmit a notice pursuant to <u>clause (d)</u> once the relevant Network Segment Substantial Completion Condition has been satisfied and <u>clause (e)</u> will apply.</p> <p>(g) If the Developer does not agree with the Department’s determination as to whether the Network Segment Substantial Completion Conditions with respect to the relevant Network Segment have been satisfied or as to the date of Network Segment Substantial Completion, the Developer may submit such Dispute for resolution in accordance with the Dispute Resolution Procedures.</p> <p>(h) In connection with the Department’s issuance of the Certificate of Network Segment Substantial Completion for the relevant Network Segment, the Department may in its reasonable discretion add or remove items to or from the Punch List. Any Dispute regarding whether an item added by the Department is appropriately included on the Punch List will be resolved according to the Dispute Resolution Procedures.</p>
21.3	Network Substantial Completion	<p>(a) The Developer shall achieve Network Substantial Completion with respect to the I-95/U.S. 70 Network on or before the I-95/U.S. 70 Network Substantial Completion Deadline.</p> <p>(b) The Developer shall provide written notice to the Department of the anticipated date for Network Substantial Completion:</p> <p>(i) at least sixty (60) days prior to the anticipated date for Network Substantial Completion; and</p> <p>(ii) at least thirty (30) days prior to the anticipated date for Network Substantial Completion.</p> <p>(c) The Developer shall provide a further written notice to the Department of the anticipated date for Network Substantial Completion at least fifteen (15) Business Days prior to the anticipated date for Network Substantial Completion, so as to allow the Department to commence its review of those Network Substantial Completion Conditions capable of being reviewed at the time of such notice. The notice must include a list of all requirements that will be achieved to allow the Department’s issuance of the Certificate of Network Substantial Completion.</p> <p>(d) No later than ten (10) Business Days prior to satisfying all Network Substantial Completion Conditions, the Developer shall meet and confer with the Department</p>

		<p>to confirm that the list of requirements provided for in <u>clause (c)</u> is in accordance with the Comprehensive Agreement. Following the initial meeting, the Developer and the Department will meet, confer and exchange information on a regular basis to allow for the Department’s orderly, timely inspection of the Network, review of the Final Design Documents and final Construction Documents, and determination of whether the Developer has satisfied all of the Network Substantial Completion Conditions.</p> <p>(e) The Developer shall provide written notice to the Department once it has satisfied all of the Network Substantial Completion Conditions.</p> <p>(f) Within thirty (30) Days of receiving the Developer’s notice under <u>clause (e)</u>:</p> <p>(i) the Department shall inspect the relevant Network, review the Final Design Documents, Construction Documents and other Submittals and conduct such other investigation as may be necessary to evaluate whether Substantial Completion in respect of such Network has been achieved; and</p> <p>(ii) the Department shall:</p> <p>(A) if all the Network Substantial Completion Conditions have been satisfied, issue a written certificate that certifies that the Developer has achieved Network Substantial Completion (the “<u>Certificate of Network Substantial Completion</u>”); or</p> <p>(B) if any Network Substantial Completion Condition has not been satisfied, notify the Developer in writing of the reasons why Network Substantial Completion has not been achieved.</p> <p>(g) If any Network Substantial Completion Condition has not been satisfied, the Developer may resubmit a notice pursuant to <u>clause (e)</u> once the relevant Network Substantial Condition has been satisfied and <u>clause (f)</u> will apply.</p> <p>(h) If the Developer does not agree with the Department’s determination as to whether the Network Substantial Completion Conditions have been satisfied or as to the date of Network Substantial Completion, the Developer may submit such Dispute for resolution in accordance with the Dispute Resolution Procedures.</p> <p>(i) In connection with the Department’s issuance of the Certificate of Network Substantial Completion, the Department may in its reasonable discretion add or remove items to or from the Punch List. Any Dispute regarding whether an item added by the Department is appropriately included on the Punch List will be resolved according to the Dispute Resolution Procedures.</p>
21.4	Project Substantial Completion	<p>(a) The Developer shall achieve Project Substantial Completion on or before the Project Substantial Completion Deadline.</p> <p>(b) The Developer shall provide written notice to the Department of the anticipated date for Project Substantial Completion at least fifteen (15) Business Days prior to the anticipated date for Project Substantial Completion, so as to allow the Department to commence its review of those Project Substantial Completion Conditions capable of being reviewed at the time of such notice. The notice must include a list of all</p>

		<p>requirements that will be achieved to allow the Department’s issuance of the Certificate of Project Substantial Completion.</p> <p>(c) The Developer shall provide written notice to the Department once it has satisfied all of the Project Substantial Completion Conditions.</p> <p>(d) Within thirty (30) Days of receiving the Developer’s notice under <u>clause (d)</u>:</p> <p>(i) the Department shall inspect the Project, review the Final Design Documents, Construction Documents and other Submittals and conduct such other investigation as may be necessary to evaluate whether Project Substantial Completion has been achieved; and</p> <p>(ii) the Department shall:</p> <p>(A) if all the Project Substantial Completion Conditions have been satisfied, issue a written certificate that certifies that the Developer has achieved Project Substantial Completion (the “<u>Certificate of Project Substantial Completion</u>”); or</p> <p>(B) if any Project Substantial Completion Condition has not been satisfied, notify the Developer in writing of the reasons why Project Substantial Completion has not been achieved.</p> <p>(e) If any Project Substantial Completion Condition has not been satisfied, the Developer may resubmit a notice pursuant to <u>clause (c)</u> once the relevant Project Substantial Completion Condition has been satisfied and <u>clause (d)</u> will apply.</p> <p>(f) If the Developer does not agree with the Department’s determination as to whether the Project Substantial Completion Conditions have been satisfied or as to the date of Project Substantial Completion, the Developer may submit such Dispute for resolution in accordance with the Dispute Resolution Procedures.</p> <p>(g) In connection with the Department’s issuance of the Certificate of Project Substantial Completion, the Department may in its reasonable discretion add or remove items to or from the Punch List. Any Dispute regarding whether an item added by the Department is appropriately included on the Punch List will be resolved according to the Dispute Resolution Procedures.</p>
21.5	Network Final Acceptance	<p>(a) The Developer shall achieve Network Final Acceptance on or before the Network Final Acceptance Deadline.</p> <p>(b) The Developer shall provide written notice to the Department of the anticipated date for Network Final Acceptance no later than fifteen (15) Business Days prior to the anticipated date for Network Final Acceptance, so as to allow the Department to commence its review of those Network Final Acceptance Conditions capable of being reviewed at the time of such notice. The notice must include a list of all requirements that will be achieved to allow the Department’s issuance of the Certificate of Network Final Acceptance.</p> <p>(c) No later than ten (10) Business Days prior to satisfying all Network Final Acceptance Conditions, the Developer shall meet and confer with the Department to confirm that the list of requirements provided for in <u>clause (b)</u> is in accordance with the Comprehensive Agreement. Following the initial meeting, the Developer</p>

		<p>and the Department will meet, confer and exchange information on a regular basis to allow for the Department’s orderly, timely inspection of the Network, and determination of whether the Developer has satisfied all of the Network Final Acceptance Conditions.</p> <p>(d) The Developer shall provide written notice to the Department once it has satisfied all of the Network Final Acceptance Conditions.</p> <p>(e) Within thirty (30) days of receiving the Developer’s notice under <u>clause (d)</u>:</p> <p>(i) the Department shall inspect the items on the Punch List, review the As-Built Drawings and carry out such other investigation as may be necessary to evaluate whether Network Final Acceptance has been achieved; and</p> <p>(ii) the Department shall:</p> <p>(A) if all the applicable Network Final Acceptance Conditions have been satisfied, issue a written certificate that certifies that the Developer has achieved Network Final Acceptance (the “<u>Certificate of Network Final Acceptance</u>”); or</p> <p>(B) if any applicable Network Final Acceptance Condition has not been satisfied, notify the Developer in writing of the reasons why Network Final Acceptance has not been achieved.</p> <p>(f) If any Network Final Acceptance Condition has not been satisfied, the Developer may resubmit a notice pursuant to <u>clause (d)</u> once the relevant Network Final Acceptance Condition has been satisfied and <u>clause (e)</u> will apply.</p> <p>(g) If the Developer does not agree with the Department’s determination as to whether the Network Final Acceptance Conditions have been satisfied or as to the date of Network Final Acceptance, the Developer may submit such Dispute for resolution in accordance with the Dispute Resolution Procedures.</p>
21.6	Project Final Acceptance	<p>(a) The Developer shall achieve Project Final Acceptance on or before the Project Final Acceptance Deadline.</p> <p>(b) The Developer shall provide written notice to the Department of the anticipated date for Project Final Acceptance no later than fifteen (15) Business Days prior to the anticipated date for Project Final Acceptance, so as to allow the Department to commence its review of those Project Final Acceptance Conditions capable of being reviewed at the time of such notice. The notice must include a list of all requirements that will be achieved to allow the Department’s issuance of the Certificate of Project Final Acceptance.</p> <p>(c) No later than ten (10) Business Days prior to satisfying all Project Final Acceptance Conditions, the Developer shall meet and confer with the Department to confirm that the list of requirements provided for in <u>clause (b)</u> is in accordance with the Comprehensive Agreement. Following the initial meeting, the Developer and the Department will meet, confer and exchange information on a regular basis to allow for the Department’s orderly, timely inspection of the Project, and</p>

		<p>determination of whether the Developer has satisfied all of the Project Final Acceptance Conditions.</p> <p>(d) The Developer shall provide written notice to the Department once it has satisfied all of the Project Final Acceptance Conditions.</p> <p>(e) Within thirty (30) days of receiving the Developer’s notice under <u>clause (d)</u>:</p> <p>(i) the Department shall inspect the items on the Punch List, review the As-Built Drawings and carry out such other investigation as may be necessary to evaluate whether Project Final Acceptance has been achieved; and</p> <p>(ii) the Department shall:</p> <p>(A) if all the applicable Project Final Acceptance Conditions have been satisfied, issue a written certificate that certifies that the Developer has achieved Project Final Acceptance (the “<u>Certificate of Project Final Acceptance</u>”); or</p> <p>(B) if any applicable Project Final Acceptance Condition has not been satisfied, notify the Developer in writing of the reasons why Project Final Acceptance has not been achieved.</p> <p>(f) If any Project Final Acceptance Condition has not been satisfied, the Developer may resubmit a notice pursuant to <u>clause (d)</u> once the relevant Project Final Acceptance Condition has been satisfied and <u>clause (e)</u> will apply.</p> <p>(g) If the Developer does not agree with the Department’s determination as to whether Project Final Acceptance Conditions have been satisfied or as to the date of Project Final Acceptance, the Developer may submit such Dispute for resolution in accordance with the Dispute Resolution Procedures.</p>
22.	Twelve Month Guarantee	The “Twelve Month Guarantee” provisions set forth in Appendix Part A of the RFP will be incorporated into the Comprehensive Agreement.
23.	Unmanned Aircraft Systems	During the Term of the Comprehensive Agreement, the Developer shall not use or operate Unmanned Aircraft Systems (“ <u>UAS</u> ”) without the prior written consent of the Department. Such consent shall be determined upon review and authorization of a written request from the Developer by the Department’s legal department and UAS program managers. If approved, the Developer shall execute a separate Authorization to Operate UAS (in a form to be provided by the Department) or other applicable third-party agreement prepared by the Department’s legal department setting forth the necessary indemnification, release, and insurance requirements. The Authorization to Operate UAS shall define the requirements that the Developer must follow in order to operate UAS within the Department Right-of-Way and other property. The Developer shall conduct all approved UAS operations in accordance with the Small Unmanned Aircraft Rule (Part 107) (14 CFR Part 107) of the Federal Aviation Administration Regulations.
PART D – OPERATION AND MAINTENANCE		
24.	Duration of the O&M Work	(a) The Developer shall carry out the O&M Work for existing dynamic message signs, related cabinets, and related communications devices, as further described in RFP

		<p>Part F-1.2, from the Closing Date until the end of the Term, in accordance with the Technical Requirements.</p> <p>(b) The Developer shall carry out the O&M Work for each Network Segment from the Network Segment Substantial Completion Date for the relevant Network Segment until the end of the Term, in accordance with the Technical Requirements.</p>
25.	General Obligations	<p>The Comprehensive Agreement will require the Developer to undertake the O&M Work and the Commercialization Activities in accordance with the terms of the RFP (including Part F-1.2 and Part F-1.3) and the Standard Specifications. With respect to the preparation of Proposals, in the event of any conflict between the terms of the RFP, the Standard Specifications, and the CA Terms, the CA Terms will prevail.</p> <p>If the Department selects Track 2 as the Preferred Procurement Track, the Department anticipates including the relevant terms of the RFP relating to the O&M Work and the Commercialization Activities into the Technical Requirements appended to the Comprehensive Agreement.</p>
26.	Utility Accommodation	<p>It is anticipated that from time to time during the Operating Period, Utility Owners will apply for additional Utility permits to modify, repair, upgrade, relocate or expand existing Utilities within the Department Right-of-Way. For such Utility permit applications submitted after the Substantial Project Completion Date, the Developer shall:</p> <ul style="list-style-type: none"> (i) as reasonably requested, assist the Department in its consideration of each Utility permit application in accordance with the Comprehensive Agreement; (ii) within twenty-one (21) days of a request from the Department, provide copies of the most recent Broadband Infrastructure design information and As-Built Drawings, as applicable, to the Department for forwarding to the applicants; (iii) as reasonably requested, assist each applicant with information regarding the location of other proposed and existing Utilities; and (iv) use Reasonable Efforts to coordinate work schedules with such applicants, as appropriate, to avoid the applicants' activities interfering with the operation of the Broadband Infrastructure.
27.	Law Enforcement Services	<p>The Developer acknowledges that any Governmental Entity empowered to enforce all Applicable Law is free to enter the Project Site or access the Broadband Infrastructure at any and all times in accordance with Applicable Law to carry out its law enforcement duties. No provision of the Comprehensive Agreement is intended to surrender, waive or limit any law enforcement powers of any Governmental Entity, and all such police powers are expressly reserved.</p>
28.	Handback	<p>(a) On the Termination Date, the Developer shall, at no charge to the Department:</p> <ul style="list-style-type: none"> (i) hand back the Broadband Infrastructure to the Department; (ii) ensure that the Broadband Infrastructure meets all of the Handback Requirements; and

		<p>(iii) transfer to the Department all of the Developer’s right, title and interest in and to the Key Assets.</p> <p>(b) In the event of Early Termination, the Developer shall only be required to comply with the requirements of <u>clause (a)</u> to the extent that any Renewal Work under the Handback Requirements was scheduled to have been performed prior to the Early Termination Date.</p> <p>(c) The Comprehensive Agreement will set out terms relating to asset inspections and liquid security requirements to ensure the Developer’s compliance with the Handback Requirements.</p>
PART E – SUBCONTRACTING AND KEY PERSONNEL; LEGAL REQUIREMENTS		
29.	Subcontracting	<p>(a) Nothing in the Comprehensive Agreement will create any contractual relationship between the Department and any Contractor.</p> <p>(b) No Contract entered into by any Developer-Related Entity will impose any obligation or liability upon the Department to any Contractor or any of its employees.</p> <p>(c) The retention of Contractors by the Developer will not relieve the Developer of its obligations under the Comprehensive Agreement and the Developer will at all times be fully responsible under the Comprehensive Agreement for the acts and omissions of all Contractors performing Work in relation to the Project, as if they were the acts and omissions of the Developer.</p>
30.	Key Personnel	<p>(a) Obligation to Maintain Key Personnel</p> <p>(i) The Developer shall maintain the Key Personnel throughout the Term, as applicable, in accordance with this <u>Section 30 (Key Personnel)</u> and <u>Exhibit 5 (Key Personnel)</u>.</p> <p>(ii) With respect to the Key Personnel:</p> <p>(A) the Developer shall retain, or shall ensure that the relevant Key Contractor will retain, employ and utilize the individuals specifically named and listed as Key Personnel in <u>Exhibit 5 (Key Personnel)</u> (or replacements approved in accordance with this <u>Section 30 (Key Personnel)</u>) to fill the corresponding positions for the time periods set out in <u>Exhibit 5 (Key Personnel)</u>;</p> <p>(B) each of the Key Personnel shall fulfill the “Primary Functions/Duties” and satisfy the “Minimum Qualifications/Experience” of such Key Personnel position, in each case, specified in <u>Exhibit 5 (Key Personnel)</u>;</p> <p>(C) each of the Key Personnel shall be assigned to the Project on a full-time basis and shall act independently of other organizations that may have an interest in the Developer; and</p> <p>(D) the Developer shall obtain the prior written consent of the Department for the appointment of any replacement Key Personnel,</p>

Subject to Section 30(b)(iii)(B) (Appointment and Replacement of Key Personnel).

(b) **Appointment and Replacement of Key Personnel**

- (i) The Developer shall not change or substitute any Key Personnel except:
 - (A) due to retirement, death, disability, incapacity or voluntary or involuntary termination of employment; or
 - (B) with the prior written consent of the Department.
- (ii) The Developer shall notify the Department in writing of any proposed replacement for any Key Personnel position, and shall ensure that any replacement satisfies the “Minimum Qualifications/Experience” for that position set out in Exhibit 5 (Key Personnel).
- (iii) The Department will have the right to:
 - (A) review the qualifications, capability and experience of each individual to be appointed to a Key Personnel position (including personnel employed by any Key Contractor to fill any such position); and
 - (B) approve or reject the appointment of such individual in such position prior to the commencement of any Work by such individual (such approval not to be unreasonably withheld, delayed or conditioned). It will be reasonable for the Department to reject a proposed individual if that individual does not have qualifications, capability and experience that satisfy the “Minimum Qualifications/Experience” set out in Exhibit 5 (Key Personnel).
- (iv) The Developer shall prepare a role profile, and submit such proposal in writing to the Department, for any new Key Personnel role it proposes. If the Department objects to a proposed additional or substitute Key Personnel role, the Developer shall repeat the above process until the Department has consented in writing to the proposed additional or substitute Key Personnel role.

(c) **General Obligations**

- (i) The Developer shall ensure that each individual filling a Key Personnel position will dedicate the amount of time necessary for the proper prosecution and performance of the Work.
- (ii) A Key Personnel member may undertake more than one role with the prior written consent of the Department, however, no individual shall be nominated to fulfill the equivalent of more than one full-time role.
- (iii) The Developer shall prepare and maintain an organizational chart showing the Key Personnel. For each of the Key Personnel, the chart shall indicate their:

		<ul style="list-style-type: none"> (A) name; (B) the percentage of their time dedicated to each Key Personnel role; (C) their principal employer organization; and (D) their reporting line(s). <p>(iv) The Developer shall provide the Department with contact information for all Key Personnel. The Developer shall also provide to the Department five (5) personnel who the Department can contact twenty-four (24) hours per day, seven (7) days per week, as necessary, with at least three (3) such personnel being Key Personnel, including:</p> <ul style="list-style-type: none"> (A) prior to the Substantial Project Completion Date, two (2) from the Lead Contractor and one (1) from the Developer; and (B) on or after the Project Substantial Completion Date: <ul style="list-style-type: none"> (aa) if an O&M Contractor is performing the O&M Work, two (2) from the O&M Contractor and one (1) from the Developer; or (bb) if the Developer is self-performing the O&M Work, three (3) from the Developer, <p>in each case, who will be able to, in turn, promptly contact all other Key Personnel.</p>
31.	Contracts with Affiliates	<p>(a) The Developer shall have the right to have Work and services performed by Affiliates only under the following terms and conditions:</p> <ul style="list-style-type: none"> (i) The Developer shall execute a written Contract with the Affiliate (ii) The Contract shall be consistent with Good Industry Practice and be in form and substance substantially similar to Contracts then being used by the Developer or Affiliates for similar Work or services with unaffiliated Contractors; (iii) The Contract shall set forth the scope of Work and services and all the pricing, terms and conditions respecting the scope of Work and services; (iv) The pricing, scheduling and other terms and conditions of the Contract shall be no less favorable to the Developer than those the Developer could reasonably obtain in an arms' length transaction with an unaffiliated contractor. The Developer shall bear the burden of proving that the same are no less favorable to the Developer; (v) No Affiliates (other than the Lead Contractor if it is an Affiliate) shall be engaged to perform any Work or services which any Project Documents or any component part, plan or other documentation thereunder indicates are to be performed by an independent or unaffiliated party. No Affiliate shall

		<p>be engaged to perform any Work or services, which would be inconsistent with Good Industry Practice.</p> <p>(b) Before entering into a written Contract with an Affiliate or any supplement or amendment thereto, the Developer shall submit a true and complete copy of the proposed Contract to the Department for review and comment to confirm compliance with the requirements of the Project Documents. The Department shall have fifteen (15) Business Days after receipt to deliver its comments to the Developer. If the Contract with the Affiliate is a Key Contract, and such Affiliate's selection as a Key Contractor is not known, as of the Closing Date, the Affiliate shall be subject to the Department's prior written approval in the Department's reasonable discretion.</p> <p>(c) The Developer shall make no payments to Affiliates for work or services in advance of provision of such work or services, except for reasonable mobilization payments or other payments consistent with arm's length, competitive transactions of similar scope. Advance payments in violation of this provision shall be excluded from the calculation of compensation for termination as set forth in <u>Exhibit 6 (Compensation on Termination)</u>.</p>
32.	Non-Discrimination; Equal Employment Opportunity	<p>(a) The Developer shall not, and shall cause the Contractors to not, discriminate on the basis of race, color, national origin, sex, age, religion or handicap in the performance of the Work under the Project Documents. The Developer shall carry out, and shall cause the Contractors to carry out, applicable requirements of 49 CFR Part 26. Failure by the Developer to carry out these requirements is a material breach of the Comprehensive Agreement, which may result in a Developer Default and the termination of the Comprehensive Agreement or such other remedy permitted hereunder as the Department deems appropriate (subject to the Developer's and Lenders' rights to notice and opportunity to cure set forth in the Comprehensive Agreement).</p> <p>(b) The Developer shall include the text of <u>clause (a)</u> in every Contract (including purchase orders and in every Contract of any Developer-Related Entity for Work), and shall require that it be included in all Contracts at lower tiers, so that such provisions will be binding upon each Contractor.</p> <p>(c) The Developer confirms for itself and all Contractors that the Developer and each Contractor has an equal employment opportunity policy ensuring equal employment opportunity without regard to race, color, national origin, sex, age, religion or handicap; and that the Developer and each Contractor maintains no employee facilities segregated on the basis of race, color, national origin, sex, age, religion or handicap. The Developer shall comply with all applicable equal employment opportunity and nondiscrimination provisions, including those set forth in the Federal Requirements, and shall require its Contractors to comply with such provisions.</p>
33.	Prompt Payment to Contractors	The Developer shall comply, and cause its Contractors to comply, with the North Carolina Prompt Payment Act, N.C. Gen. Stat. § 143-134.1.

34.	Applicable Law	(a) The Developer shall at all times in carrying out the Work comply, and require its Contractors to comply, with all Applicable Law, including the Federal Requirements. (b) If there is any conflict between any Applicable Law and the other requirements of the Comprehensive Agreement, Applicable Law will prevail and take precedence over any such conflicting provisions.
35.	Federal Requirements	(a) The Developer shall comply, and require its Contractors to comply, with all laws and regulations applicable to the Project as a result of the costs of the Project being financed in part with federal-aid funds, including the Federal Requirements. (b) The Developer is prohibited from the use of “covered telecommunications equipment” as defined by 2 C.F.R. § 200.216 and the NDAA FY 2019 Section 889, and shall require its Contractors to comply with such prohibition.
36.	DBE Participation	The Developer shall comply with the DBE participation requirements set forth in Appendix Part A to the RFP.
PART F – PAYMENTS; LIQUIDATED DAMAGES		
37.	Payments to Developer	(a) Payments with respect to the D&C Work will be made in accordance with the progress payment terms set forth in Appendix Part A to the RFP. (b) Payments with respect to the O&M Work will be calculated and made in accordance with the performance payment terms set forth in Part F-1.2 of the RFP.
38.	Payments to Department	Payment terms with respect to the revenue sharing payments (including the upfront payment and annual revenue sharing payments) (collectively, the “ <u>Revenue Sharing Payments</u> ”) will be based on the relevant payment terms set forth in the RFP.
39.	Liquidated Damages	The Department shall be entitled to assess liquidated damages for non-permitted lane closures, late completion of the D&C Work, and failure to achieve performance requirements with respect to the O&M Work (in the form of pay-for-performance disincentives) (collective, “ <u>Liquidated Damages</u> ”), as described in the RFP.
PART G – SUPERVENING EVENTS		
40.	Compensation Events	
40.1	Entitlement to Claim	If a Compensation Event directly causes, or is reasonably likely to directly cause, the Developer to do any one or more of the following: (a) fail to achieve any Completion Milestone by the anticipated date for achievement of the relevant Completion Milestone (as shown in the Project Schedule); (b) fail to comply with its obligations or exercise its rights under the Comprehensive Agreement; (c) incur additional or increased costs; or (d) incur a Negative Commercial Revenue Impact,

		<p>The Developer may claim one or more of the following:</p> <ul style="list-style-type: none"> (i) an extension of the relevant Completion Milestone Deadline; (ii) relief from compliance with its obligations under the Comprehensive Agreement; (iii) compensation for any Change in Costs that the Developer has incurred or will incur as a direct result of such Compensation Event; or (iv) compensation for any Negative Commercial Revenue Impact.
40.2	Notice and Information for Compensation Events	The Comprehensive Agreement will set forth requirements relating to the form and content of notices relating to the occurrence of Compensation Events, the timing for submission of such notices to the Department, and the consequences to the Developer for failing to submit the required notices, including the waiver by the Developer of its entitlement to relief.
40.3	Mitigation	The Developer shall use Reasonable Efforts to mitigate the delay and any other consequence of any Compensation Event.
40.4	Grant of Relief and Compensation	<p>If the Developer satisfies the relevant conditions relating to notice of a Compensation Event and otherwise meets its burden of proof that such Compensation Event was the direct cause or is reasonably likely to be the direct cause of, as applicable:</p> <ul style="list-style-type: none"> (i) a delay in achieving a Completion Milestone by the anticipated date for achievement of the relevant Completion Milestone (as shown in the Project Schedule); (ii) the Developer's inability to comply with its obligations under the Comprehensive Agreement; (iii) the Developer incurring a Change in Costs; or (iv) the Developer incurring a Negative Commercial Revenue Impact, <p>the Developer will be entitled to an extension of time, relief from obligations, or compensation.</p>
40.5	Calculation of Change in Cost and Negative Commercial Revenue Impacts	<ul style="list-style-type: none"> (a) Any Change in Costs will be calculated in accordance with <u>Exhibit 7 (Principles for Calculation of Change in Costs)</u>. (b) Any Net Commercial Revenue Impact will be calculated in accordance with the definition thereof.
40.6	Positive Revenue Impact of Compensation Event	If a Compensation Event results in a Positive Commercial Revenue Impact, then the Developer will pay any amounts due to the Department from such Positive Commercial Revenue Impact in a manner reasonably acceptable to the Department.
41.	Relief Events	

41.1	Entitlement to Claim	<p>If a Relief Event directly causes, or is likely to directly cause, the Developer to do any one or more of the following:</p> <ul style="list-style-type: none"> (a) fail to achieve any Completion Milestone by the anticipated date for achievement of the relevant Completion Milestone (as shown in the Project Schedule); or (b) fail to comply with any of its obligations or exercise any of its rights under the Comprehensive Agreement, <p>the Developer may claim one or more of the following:</p> <ul style="list-style-type: none"> (i) an extension of the relevant Completion Milestone Deadline; or (ii) relief from any rights of the Department under <u>Section 58 (Termination for Developer Default)</u>.
41.2	Notice and Information for Relief Events	<p>The Comprehensive Agreement will set forth requirements relating to the form and content of notices relating to the occurrence of Relief Events, the timing for submission of such notices to the Department, and the consequences to the Developer for failing to submit the required notices, including the waiver by the Developer of its entitlement to relief.</p>
41.3	Mitigation	<p>The Developer shall use Reasonable Efforts to mitigate the delay and any other consequence of any Relief Event.</p>
41.4	Grant of Relief	<p>If the Developer satisfies the relevant conditions relating to notice of a Relief Event and otherwise meets its burden of proof that such Relief Event was the direct cause or is reasonably likely to be the direct cause of, as applicable:</p> <ul style="list-style-type: none"> (i) a delay in achieving a Completion Milestone by the anticipated date for achievement of the relevant Completion Milestone (as shown in the Project Schedule); or (ii) the Developer's inability to comply with its obligations under the Comprehensive Agreement, <p>the Developer will be entitled to an extension of time or other relief from obligations (as applicable).</p>
42.	Force Majeure Events	
42.1	General	<p>The occurrence or continuance of any Force Majeure Event shall not excuse any Party from performing any payment obligations contemplated under the Comprehensive Agreement.</p>
42.2	No Breach of Obligations	<p>Neither Party may bring a claim for a breach of obligations under the Comprehensive Agreement by the other Party or incur any liability to the other Party for any losses or damages incurred by that other Party if a Force Majeure Event occurs and the Affected Party is prevented from carrying out its obligations by that Force Majeure Event.</p>
42.3	Failure to Agree; Right to Terminate	<ul style="list-style-type: none"> (a) If: <ul style="list-style-type: none"> (i) as a result of a Force Majeure Event, the Affected Party is unable to comply with any of its material obligations under the Comprehensive

		<p>Agreement for a continuous period of more than one hundred eighty (180) days after the date such Force Majeure Event occurred; and</p> <p>(ii) within such one hundred eighty (180) day period, the Parties are unable to agree on appropriate terms to mitigate the effects of the Force Majeure Event and facilitate the continued performance of the Comprehensive Agreement,</p> <p>either Party may deliver notice to the other Party that it wishes to terminate the Comprehensive Agreement (a “<u>Force Majeure Termination Notice</u>”). A Force Majeure Termination Notice must (x) provide a proposed date of termination and (y) be delivered to the other Party at least thirty (30) days before such proposed date of termination.</p> <p>(b) If:</p> <p>(i) the Department delivers a Force Majeure Termination Notice to the Developer in accordance with <u>clause (a)</u> above; or</p> <p>(ii) the Developer delivers a Force Majeure Termination Notice to the Department in accordance with <u>clause (a)</u> during the D&C Period,</p> <p>the Comprehensive Agreement will terminate on the date of termination stated in such Force Majeure Termination Notice.</p> <p>(c) If the Developer delivers a Force Majeure Termination Notice to the Department in accordance with <u>clause (a)</u> above during the Operating Period, <u>Section 42.4 (Department Options)</u> will apply.</p>
42.4	Department Options	<p>(a) If the Developer delivers a Force Majeure Termination Notice in accordance with <u>Section 42.3(a) (Failure to Agree; Right to Terminate)</u> during the Operating Period, the Department shall, within fifteen (15) Business Days of receiving such notice, deliver a notice to the Developer stating that the Department either:</p> <p>(i) accepts that the Comprehensive Agreement will terminate on the date stated in the Force Majeure Termination Notice; or</p> <p>(ii) requires the Comprehensive Agreement to continue.</p> <p>(b) If the Department issues a notice under <u>clause (a)(i)</u> above or fails to deliver any notice under <u>clause (a)</u>, the Comprehensive Agreement will terminate on the date set out in the Force Majeure Termination Notice delivered by the Developer in accordance with <u>Section 42.3(a) (Failure to Agree; Right to Terminate)</u>.</p> <p>(c) If the Department delivers a notice under <u>clause (a)(ii)</u> above:</p> <p>(i) subject to <u>clause (d)</u> below, the Comprehensive Agreement will not terminate and will continue until the Department provides written notice (of at least thirty (30) days) to the Developer that it wishes the Comprehensive Agreement to terminate; and</p>

		<p>(ii) until such time as the Department terminates the Comprehensive Agreement in accordance with <u>clause (c)(i)</u>:</p> <p>(A) the Developer shall, to the extent practicable, continue to perform the Work; and</p> <p>(B) if a Force Majeure Event directly causes the assessment of any Performance Points, then, for the period following the Department’s delivery of the notice described in <u>clause (a)(ii)</u>, such Performance Points will be deemed to have not occurred for purposes of the Comprehensive Agreement and no Liquidated Damages will be assessed by the Department in respect of such Force Majeure Event.</p> <p>(d) Unless otherwise agreed by the Developer, if the Force Majeure Event has a material adverse impact on the Developer’s ability to carry out the Commercial Activities (as determined by comparing the amount of revenues from Commercial Activities the Developer will lose while the Force Majeure Event persists to the amount of such revenues that the Developer forecasts in the Base Case Financial Model), then the Department shall not be entitled to require the Comprehensive Agreement to continue for more than twelve (12) months following the date on which the Department delivers a notice under <u>clause (a)(ii)</u>.</p>
42.5	Cessation of Force Majeure Event	The Affected Party shall notify the other Party as soon as practicable after the Force Majeure Event ceases or no longer causes the Affected Party to be unable to comply with its obligations under the Comprehensive Agreement. Following such notification the Comprehensive Agreement shall continue to be performed on the terms existing immediately prior to the occurrence of the Force Majeure Event.
43.	Changes in Law	<p>(a) The Developer shall ensure that the Work is performed in accordance with the terms of the Comprehensive Agreement following any Change in Law.</p> <p>(b) The provisions of <u>Section 40 (Compensation Events)</u> apply with respect to any Qualifying Change in Law.</p>
44.	Department Changes	The Comprehensive Agreement will set forth a process by which the Department may request and/or direct the Developer to undertake changes in the Work.
45.	Developer Changes	The Comprehensive Agreement will set forth a process by which the Developer may propose changes in the Work, including Developer Connected Vehicle Sites, Commercial Laterals, and extensions of the Project to other routes within the Department Right-of-Way.
PART H – INDEMNITIES; INSURANCE		
46.	Indemnity	<p>Subject to <u>Section 47 (Exclusions from Indemnity)</u>, to the fullest extent permitted by Applicable Law, the Developer shall release, defend, indemnify and hold harmless the Indemnified Parties on demand from and against any and all claims, liabilities, damages, and costs, including reasonable attorneys’ fees, to third parties for Losses arising from:</p> <p>(a) death or personal injury;</p> <p>(b) loss of or damage to any Indemnified Party’s property;</p> <p>(c) Third Party Claims brought against any Indemnified Party;</p>

		<p>which may arise out of, or in consequence of, the performance or non-performance by the Developer of its obligations under any or all of the following:</p> <ul style="list-style-type: none"> (i) the Project Documents; (ii) any violation of any federal or state securities or similar law by any Developer-Related Entity (other than as a direct result of any disclosure statements made by the Department or other Indemnified Party); and (iii) if applicable, the authorization, issuance, sale, trading, redemption or servicing of any bonds issued to finance the Project (regardless of the identity of the issuer), or the Development's Entity's failure to comply with any requirement necessary to preserve the tax-exempt status of bonds (other than as a direct result of any disclosure statements made by the Department or other Indemnified Party). <p>The Developer's indemnification of the Indemnified Parties shall not be reduced in any way by any limitation on the amount of types of damages, compensation, or benefits payable by the Developer or its subcontractors under any employee benefit act including, but not limited to, worker's compensation acts, disability benefits acts, or other employee benefit acts.</p>
47.	Exclusions from Indemnity	<p>The Developer shall not be responsible or be obliged to release, defend, indemnify or hold harmless any Indemnified Party with respect to any liability or Losses under <u>Section 46 (Indemnity)</u> to the extent that the same arise as a direct result of:</p> <ul style="list-style-type: none"> (a) a Compensation Event, Relief Event, or Department Default; (b) the presence of Hazardous Materials on any Project Site for which the Department is deemed to be the sole generator and arranger, but only to the extent that the relevant Loss does not arise as a direct result of the negligence of the Developer or the Developer failing to comply with the terms of the Project Documents; (c) the fraud, negligence, recklessness, bad faith or willful misconduct of an Indemnified Party; (d) any performance or non-performance by an Indemnified Party of its obligations under the Project Documents; (e) any Losses suffered by an Indemnified Party with respect to use of the Project Data, or any intellectual property related to the Project Data, other than any use specifically for the Project; or (f) any Losses suffered by an Indemnified Party arising from the breach of <u>Section 8(e) (Grant of Rights)</u>; <p><i>provided that this Section 47 (Exclusions from Indemnity) shall not apply with regard to any liability or losses that would otherwise be covered by insurance carried by the Developer as required by Section 49 (Insurance).</i></p>
48.	Limitation on Indemnity	<p>An indemnity by the Developer under any provision of the Comprehensive Agreement shall be without limitation to any indemnity by the Developer under any other provision of the Comprehensive Agreement.</p>

49.	Insurance	The Developer shall obtain and maintain, or cause to be obtained or maintained, at a minimum, the insurance policies identified in the RFP, including Section 107-15 of the Standard Specifications.
50.	Uninsurable Risks	<p>(a) If, during the Operating Period, a risk usually covered by commercial general liability, all risks property or statutory insurances, in each case that is required under the Comprehensive Agreement, becomes an Uninsurable Risk, the Developer shall notify the Department promptly (and in any event within five (5) Business Days) after the earlier of:</p> <ul style="list-style-type: none"> (i) the Developer becoming aware that the risk is likely to be an Uninsurable Risk; and (ii) the risk becoming an Uninsurable Risk, <p>and, in any event, at least ten (10) Business Days before expiration or cancellation of any existing insurance with respect to that risk (irrespective of the reason for the same). The Developer shall provide the Department with such information as the Department reasonably requests regarding the Uninsurable Risk.</p> <p>(b) If both Parties agree, or it is determined pursuant to the Dispute Resolution Procedures, that a risk is an Uninsurable Risk, the Department and the Developer shall consider in Good Faith:</p> <ul style="list-style-type: none"> (i) alternative insurance packages and programs that provide coverage as comparable to that contemplated in <u>Section 49 (Insurance)</u> as is possible under then-existing insurance market conditions; and (ii) other means by which the risk should be managed or shared (including considering the issue of self-insurance by either Party). <p>(c) If the Department and the Developer do not agree on how to manage or share the relevant Uninsurable Risk within ten (10) days of the date on which the Developer provides notice under <u>clause (a)</u>, the Department may refer the matter to a mediator acceptable to the Department and the Developer (acting reasonably) instead of using the Dispute Resolution Procedures.</p>
51.	Consequence of a Risk Becoming an Uninsurable Risk	<p>(a) If both Parties agree (acting reasonably), or it is determined pursuant to the Dispute Resolution Procedures, that:</p> <ul style="list-style-type: none"> (i) a risk is an Uninsurable Risk in accordance with <u>Section 50(b) (Uninsurable Risks)</u> and the Parties do not agree on how to manage or share the relevant Uninsurable Risk within thirty (30) days of the date on which the Developer provides notice under <u>Section 50(a) (Uninsurable Risks)</u> (irrespective of whether the matter has been referred to mediation under <u>Section 50(c) (Uninsurable Risks)</u> in that period); and (ii) the risk being an Uninsurable Risk is not caused by the actions, breaches, omissions or defaults of: <ul style="list-style-type: none"> (A) the Developer; or

		<p>(B) a Contractor, unless the Developer has used best endeavors to remedy, overcome or otherwise mitigate the effect of the Contractor’s action, breach, omission or default,</p> <p>the Department shall deliver a notice to the Developer electing to either:</p> <p>(iii) terminate the Comprehensive Agreement and pay the Developer in accordance with <u>Section 60 (Termination for Uninsurability)</u>; or</p> <p>(iv) continue the Comprehensive Agreement and on the occurrence of the risk (but only for as long as such risk remains an Uninsurable Risk) the Department shall (at its option) either:</p> <p>(A) pay the Developer an amount equal to the insurance proceeds that would have been payable had the relevant insurance continued to be available (subject to the limitations, conditions and exclusions set out in the certificates and policies of insurance relating to such coverage previously provided by the Department, in which case the Developer will remain responsible for deductibles (the “<u>Relevant Insurance Amount</u>”)) and the Comprehensive Agreement will continue; or</p> <p>(B) pay the Developer an amount equal to the amount calculated in accordance with <u>Section 60 (Termination for Uninsurability)</u> plus (in relation to third party liability insurance only) the Relevant Insurance Amount for that third party liability insurance, and the Comprehensive Agreement will terminate.</p> <p>To the extent that the Department assumes any Uninsurable Risk in accordance with this <u>Section 51 (Consequences of a Risk Becoming an Uninsurable Risk)</u>, the Department shall provide a full waiver of subrogation to the Developer.</p> <p>(b) If, pursuant to <u>clause (a)(iv)</u>, the Comprehensive Agreement continues:</p> <p>(i) the Developer’s obligations in <u>Section 49 (Insurance)</u> to maintain insurance with respect to the Uninsurable Risk are waived and the Developer will not be considered in breach of its obligations regarding the maintenance of insurance pursuant to the Comprehensive Agreement as a result of the failure to maintain insurance with respect to such Uninsurable Risk for so long as the risk is an Uninsurable Risk (and for such time as is required for the Developer to take out insurance as required under <u>clause (b)(ii)</u>); and</p> <p>(ii) the Developer shall use Reasonable Efforts to regularly review the insurance market generally, to ascertain whether an Uninsurable Risk has become insurable and in any event shall approach (or require its insurance brokers to approach) the insurance market at least once every six (6) months to establish whether the risk remains an Uninsurable Risk. Upon the Developer becoming aware that the risk is no longer an Uninsurable Risk, the Developer shall promptly (and in any event within ten (10) Business Days of becoming aware) take out and maintain or</p>
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		ensure the taking out and maintenance of insurance (to be incepted as soon as reasonably practicable) for such risk in accordance with the Comprehensive Agreement
52.	Performance Security	The Developer shall provide, or cause to be provided, performance and payment bonds as further described in Part A-1.2 of the RFP (collectively, the “ <u>Performance Security</u> ”).
PART I – PRINCIPAL DEVELOPER DOCUMENTS; FINANCIAL MODEL		
53.	Key Contracts	<p>The Developer shall perform its obligations under, and observe all of the provisions of, the Key Contracts and must not, without the prior written consent of the Department:</p> <ul style="list-style-type: none"> (a) terminate or agree to termination of all or any part of any Key Contract, except for default in accordance with its terms; (b) amend any Key Contract in any material respect; (c) in any material respect depart from its obligations (or waive or allow to lapse any rights it may have in a material respect) or allow others in any material respect to depart from their obligations (or waive or allow to lapse any rights they may have in a material respect) under any Key Contract; or (d) enter into (or permit any other Person to enter into) any agreement replacing all or part of (or otherwise materially and adversely affecting the interpretation of) any Key Contract, <p>if the proposed course of action may reasonably be expected to have a material adverse effect on the ability of the Developer to perform its obligations under the Comprehensive Agreement.</p>
54.	Delivery of Changed Principal Developer Documents	If at any time an amendment is made to any Principal Developer Document or the Developer enters into a new Principal Developer Document (or any agreement that affects the interpretation or application of any Principal Developer Document), the Developer shall deliver to the Department a conformed copy of each such amendment or agreement within ten (10) Business Days of the date of its execution or creation (as applicable) certified as a true copy by an officer of the Developer.
55.	Financial Model	Base Case Financial Model requirements are specified in Part F-1.8 of the RFP. The Developer shall perform annual updates of the Base Case Financial Model in accordance with <u>Section 63 (Financial Performance Reporting; Audits)</u> .
PART J – TERMINATION AND STEP-IN		
56.	Termination for Convenience	
56.1	Right to Terminate for Convenience	The Department may terminate the Comprehensive Agreement at any time before the last date of the Term.
56.2	Compensation on Termination	If the Comprehensive Agreement is terminated pursuant to this <u>Section 56 (Termination for Convenience)</u> , the Department shall pay compensation to the Developer in accordance with <u>Section 1 (Compensation on Termination for Convenience, Department Default or Court Ruling)</u> of <u>Exhibit 6 (Compensation on Termination)</u> .
57.	Termination for Department Default	

57.1	Department Default	<p>The occurrence of any one or more of the following will constitute a “<u>Department Default</u>”:</p> <ul style="list-style-type: none"> (a) the Department fails to make any payment due to the Developer under the Comprehensive Agreement when due, except to the extent such payment is subject to a Good Faith Dispute; (b) any representation or warranty made by the Department under the Comprehensive Agreement is false, misleading or inaccurate when made, in each case in any material respect, or omits material information when made; (c) the Department fails to perform any of its obligations under the Comprehensive Agreement, which substantially frustrates or renders it substantially impossible for the Developer to perform its obligations or exercise its rights under the Comprehensive Agreement for a continuous period of sixty (60) days or more; (d) the Department fails to comply with <u>Section 66.3 (Assignment by the Department)</u>; or (e) any condemnation or other taking by eminent domain of all or any material portion of the Project.
57.2	Notice and Cure Periods	<ul style="list-style-type: none"> (a) The Developer shall provide written notice (“<u>Department Default Notice</u>”) to the Department upon the occurrence of a Department Default. (b) Upon receipt of a Department Default Notice, the Department will have the following cure periods: <ul style="list-style-type: none"> (i) for a Department Default under <u>Section 57.1(a) (Non-Payment)</u>, a period of forty-five (45) days after the Department receives the Department Default Notice; (ii) for a Department Default under <u>Section 57.1(c) (Non-Performance of Obligations)</u>, a period of sixty (60) days after the Department receives the Department Default Notice; (iii) for a Department Default under <u>Section 57.1(b) (Representations and Warranties)</u> or <u>Section 57.1(e) (Condemnation)</u>: <ul style="list-style-type: none"> (A) a period of thirty (30) days after the Department receives the Department Default Notice; or (B) if, despite the Department’s commencement of meaningful steps to cure immediately after receiving the Department Default Notice, the Department Default cannot be cured within such thirty (30) day period, the Department will have such additional period of time, up to a maximum cure period of one hundred twenty (120) days after the Department receives the Department Default Notice, as is reasonably necessary to cure the Department Default; and (iv) for a Department Default under <u>Section 57.1(d) (Assignment)</u>, there is no cure period. (c) A Department Default under <u>Section 57.1(b) (Representations and Warranties)</u> will be regarded as cured when the adverse effects of such Department Default are cured.

57.3	Compensation on Termination	If the Comprehensive Agreement is terminated pursuant to this <u>Section 57 (Termination for Department Default)</u> , the Department shall pay compensation to the Developer in accordance with Section 1 (<u>Compensation on Termination for Convenience, Department Default or Court Ruling</u>) of <u>Exhibit 6 (Compensation on Termination)</u> .
58.	Termination for Developer Default	
58.1	Developer Default	<p>The occurrence of any one or more of the following will constitute a “<u>Developer Default</u>”:</p> <ul style="list-style-type: none"> (a) the Developer Abandons the Project; (b) the Developer fails to achieve (i) Network Substantial Completion with respect to the I-95/U.S. 70 Network by the Long Stop Deadline or (ii) Project Substantial Completion by the Long Stop Deadline; (c) a Restricted Change in Ownership occurs; (d) the Developer assigns, transfers, pledges, mortgages or otherwise encumbers any of its rights or obligations under the Comprehensive Agreement in breach of <u>Section 66 (Assignment and Transfer; Fundamental Changes; Department Employees)</u>; (e) an Insolvency Event arises with respect to the Developer; (f) during the D&C Period, an Insolvency Event arises with respect to the Lead Contractor or any Lead Contractor Member, unless: <ul style="list-style-type: none"> (i) the Developer enters into a replacement design and construction contract or guarantee (as applicable) with a reputable counterparty reasonably acceptable to the Department within ninety (90) days of the relevant Insolvency Event, or within such longer period as agreed with the Department (acting reasonably) not to exceed one hundred-fifty (150) days which is reasonably necessary to effect such replacement, so long as the Developer is diligently pursuing such replacement; or (ii) with respect to any Lead Contractor Member, the Developer demonstrates to the satisfaction of the Department (acting reasonably) that the Lead Contractor Members with respect to which an Insolvency Event has not occurred possess the technical and financial capability to perform all remaining D&C Work in accordance with the Comprehensive Agreement; (g) during the Operating Period, an Insolvency Event arises with respect to an O&M Contractor or any O&M Contractor Member, unless: <ul style="list-style-type: none"> (i) the Developer enters into a replacement operation and maintenance contract with a reputable counterparty reasonably acceptable to the Department within ninety (90) days of the relevant Insolvency Event, or within such longer period as agreed with the Department (acting reasonably) not to exceed one hundred-twenty (120) days which is reasonably necessary to effect such replacement, so long as the Developer is diligently pursuing such replacement; or (ii) in the absence of entering into a replacement operation and maintenance contract, the Developer demonstrates to the satisfaction of the Department

		<p>(acting reasonably) that the Developer possesses the technical and financial capability to perform all remaining O&M Work in accordance with the Comprehensive Agreement;</p> <p>(h) the D&C Contract is terminated (other than non-default termination on its scheduled termination date) and the Developer has not entered into a replacement design and construction contract with a reputable counterparty reasonably acceptable to the Department within ninety (90) days of the termination of the D&C Contract, or within such longer period as agreed with the Department (acting reasonably) not to exceed one hundred-fifty (150) days which is reasonably necessary to effect such replacement, so long as the Developer is diligently pursuing such replacement;</p> <p>(i) the O&M Contract is terminated (other than non-default termination on its scheduled termination date) and the Developer has not either:</p> <p>(i) entered into a replacement operation and maintenance contract with a reputable counterparty reasonably acceptable to the Department within ninety (90) days of the termination of the O&M Contract, or within such longer period as agreed with the Department (acting reasonably) not to exceed one hundred-twenty (120) days which is reasonably necessary to effect such replacement, so long as the Developer is diligently pursuing such replacement; or</p> <p>(ii) in the absence of entering into a replacement operation and maintenance contract, the Developer demonstrates to the satisfaction of the Department (acting reasonably) that the Developer possesses the technical and financial capability to perform all remaining O&M Work in accordance with the Comprehensive Agreement;</p> <p>(j) the Developer fails to pay any amount due to the Department under the Comprehensive Agreement when due, except to the extent such payment is subject to a Good Faith Dispute;</p> <p>(k) any representation or warranty made by the Developer in the Comprehensive Agreement or any certificate, schedule, report, instrument or other document delivered to the Department pursuant to the Comprehensive Agreement is false or materially misleading or inaccurate when made, in each case in any material respect, or omits material information when made;</p> <p>(l) the Developer fails to comply with any Governmental Approval or Applicable Law in any material respect;</p> <p>(m) the Developer fails to promptly comply with any written suspension of Work order issued by the Department in accordance with the Comprehensive Agreement, except to the extent that such failure arises as a direct result of a Compensation Event or a Relief Event;</p> <p>(n) a Performance Point Default Trigger occurs;</p> <p>(o) the Developer fails to obtain, provide and maintain the insurance policies and the Performance Security in accordance with the requirements of the Comprehensive Agreement;</p>
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		<p>(p) a Persistent Breach by the Developer occurs;</p> <p>(q) there occurs any final, non-appealable suspension or debarment (distinguished from ineligibility due to lack of financial qualifications), or there goes into effect an agreement for voluntary exclusion, from bidding, proposing or contracting with any federal or State department or agency of (i) the Developer, (ii) any Affiliate of the Developer for whom transfer of ownership would constitute a Restricted Change in Ownership, (iii) any Equity Member or (iv) any Key Contractor whose work is not completed; or</p> <p>(r) without limiting <u>Section 58.1(a) (Developer Default)</u> through <u>Section 58.1(s) (Developer Default)</u>:</p> <p>(i) The Developer breaches any other material obligation under the Comprehensive Agreement, other than:</p> <p>(A) a breach for which a Performance Point was or could have been assessed; or</p> <p>(B) a breach that arises as a direct result of the occurrence of a Compensation Event or Relief Event; or</p> <p>(s) the Developer makes any written repudiation of the Comprehensive Agreement.</p>
58.2	Persistent Breach	<p>(a) Initial Warning Notice</p> <p>(i) If the Developer commits a breach of the Comprehensive Agreement (other than (x) any breach for which a Performance Point could have been assessed or (y) any breach that arises as a direct result of the occurrence of a Compensation Event or a Relief Event) that:</p> <p>(B) continues for more than thirty (30) consecutive days; or</p> <p>(C) occurs more than three (3) times in any six (6)-month period,</p> <p>the Department may serve a notice (an “<u>Initial Warning Notice</u>”) on the Developer, in accordance with <u>clause (a)(ii)</u>.</p> <p>(ii) An Initial Warning Notice must:</p> <p>(A) specify that it is an Initial Warning Notice;</p> <p>(B) give reasonable details of the relevant breach; and</p> <p>(C) state that the relevant breach is a breach which, if it recurs frequently or continues, may result in termination of the Comprehensive Agreement for Persistent Breach.</p>

		<p>(b) Final Warning Notice</p> <p>(i) If, after the date of service of the Initial Warning Notice, the breach specified in the Initial Warning Notice:</p> <p>(A) continues for more than thirty (30) consecutive days; or</p> <p>(B) recurs three (3) or more times within the nine (9)-month period after such date,</p> <p>the Department may serve another notice (a “<u>Final Warning Notice</u>”) on the Developer, in accordance with <u>clause (b)(ii)</u>.</p> <p>(ii) A Final Warning Notice must:</p> <p>(A) specify that it is a Final Warning Notice;</p> <p>(B) state that the breach specified has been the subject of an Initial Warning Notice served within the six (6)-month period prior to the date of service of the Final Warning Notice; and</p> <p>(C) state that if the breach:</p> <p>(aa) continues for more than thirty (30) consecutive days after the date of service of the Final Warning Notice; or</p> <p>(bb) recurs three (3) or more times within the six (6)-month period after the date of service of the Final Warning Notice,</p> <p>a Developer Default will occur under <u>Section 58.1 (Developer Default)</u> and the Comprehensive Agreement may be terminated.</p> <p>(c) Concurrency of Warning Notices</p> <p>An Initial Warning Notice must not be served with respect to any incident or breach for which an Initial Warning Notice or Final Warning Notice has been served and is outstanding.</p>
58.3	Notice and Cure Periods	<p>(a) The Department shall provide written notice (“<u>Developer Default Notice</u>”) to the Developer upon the occurrence of a Developer Default.</p> <p>(b) Upon receipt of a Developer Default Notice, the Developer shall have the following cure periods:</p> <p>(i) for a Developer Default under <u>Section 58.1(a) (Abandonment)</u>, <u>Section 58.1(j) (Non-Payment)</u>, <u>Section 58.1(o) (Insurance/Performance Security)</u>, a period of thirty (30) days after the Developer receives the Developer Default Notice;</p> <p>(ii) for a Developer Default under <u>Section 58.1(k) (Representations and Warranties)</u>, <u>Section 58.1(l) (Governmental Approvals)</u>, <u>Section 58.1(m)</u></p>

		<p><u>(Suspension Order)</u>, <u>Section 58.1(q) (Debarment)</u>, and <u>Section 58.1(r) (Material Breach)</u>,</p> <p>(A) a period of thirty (30) days after the Developer receives the Developer Default Notice; or</p> <p>(B) if, despite the Developer’s commencement of meaningful steps to cure immediately after receiving the Developer Default Notice, the Developer Default cannot be cured within such thirty (30) day period the Developer will have such additional period of time, up to a maximum cure period of one hundred fifty (150) days, as is reasonably necessary to cure the Developer Default; and</p> <p>(iii) for a Developer Default under <u>Section 58.1(b) (Long Stop Deadline)</u>, <u>Section 58.1(c) (Restricted Change in Ownership)</u>, <u>Section 58.1(d) (Assignment)</u>, <u>Sections 58.1(e) through 58.1(g) (Insolvency)</u>, <u>Section 58.1(h) (D&C Contract Termination)</u>, <u>Section 58.1(i) (O&M Contract Termination)</u>, <u>Section 58.1(n) (Performance Points)</u>, <u>Section 58.1(p) (Persistent Breach)</u>, and <u>Section 58.1(s) (Repudiation)</u> there is no cure period.</p> <p>(c) A Developer Default under <u>Section 58.1(k) (Representations and Warranties)</u> will be regarded as cured when the adverse effects of such Developer Default are cured.</p>
58.4	Remedial Plan for Developer Default	<p>(a) If a Developer Default occurs and it has not been cured within any relevant cure period set out in <u>Section 58.3 (Notice and Cure Periods)</u>, the Department may, without prejudice to any other right or remedy available to it, require the Developer to prepare and submit, within thirty (30) days of being notified, a remedial plan (“<u>Remedial Plan</u>”).</p> <p>(b) A Remedial Plan must set out specific actions and an associated schedule to be followed by the Developer to cure the relevant Developer Default and reduce the likelihood of such default occurring in the future. Such actions may include:</p> <p>(i) changes in organizational and management structure;</p> <p>(ii) revising and restating management plans and procedures;</p> <p>(iii) improvements to quality control practices;</p> <p>(iv) increased monitoring and inspections;</p> <p>(v) changes in Key Personnel and other important personnel; and</p> <p>(vi) replacement of Contractors.</p> <p>(c) Within thirty (30) days of receiving a Remedial Plan, the Department shall notify the Developer whether such Remedial Plan is acceptable (in the Department’s absolute discretion). If the Department notifies the Developer that its Remedial Plan is acceptable, the Developer shall implement such Remedial Plan in accordance with its terms.</p>

58.5	Termination for Developer Default	<p>(a) If a Developer Default occurs and:</p> <ul style="list-style-type: none"> (i) the Developer Default has not been cured within any relevant cure period set out in <u>Section 58.3 (Notice and Cure Periods)</u>; or (ii) where a Remedial Plan has been accepted by the Department, the Developer fails to comply with the Remedial Plan or cure the Developer Default, in each case in accordance with the schedule provided in such Remedial Plan, <p>the Department may serve a Termination Notice (“<u>Department Termination Notice</u>”) on the Developer at any time during the continuance of that the Developer Default.</p> <p>(b) A Department Termination Notice must specify the Developer Default that has occurred entitling the Department to terminate.</p> <p>(c) Subject to the terms of the Lenders Direct Agreement, the Comprehensive Agreement will terminate on the date that is thirty (30) days after the date the Developer receives a Department Termination Notice.</p>
58.6	Compensation on Termination	<p>(a) Subject to <u>clause (b)</u> below, if the Comprehensive Agreement is terminated in accordance with this <u>Section 58 (Termination for Developer Default)</u>, the Department shall pay compensation to the Developer in accordance with Section 3 (<u>Compensation on Termination for Developer Default Prior to Project Substantial Completion</u>) or Section 4 (<u>Compensation on Termination for Developer Default On or After Project Substantial Completion</u>), as applicable, of <u>Exhibit 6 (Compensation on Termination)</u>.</p> <p>(b) If it is finally determined under the Dispute Resolution Procedures that the Department was not entitled to terminate the Comprehensive Agreement under <u>Section 58.5 (Termination for Developer Default)</u>:</p> <ul style="list-style-type: none"> (i) the Department will be deemed to have terminated the Comprehensive Agreement for convenience under <u>Section 56 (Termination for Convenience)</u>; and (ii) the Department shall pay compensation to the Developer in accordance with <u>Section 56.2 (Compensation on Termination)</u> (net of any payments already made to the Developer under <u>clause (a)</u> above.
59.	Termination for Extended Force Majeure	
59.1	Right to Terminate for Extended Force Majeure	The Comprehensive Agreement may be terminated by either Party pursuant to <u>Section 42.3 (Failure to Agree; Right to Terminate)</u> or in accordance with <u>Section 42.4 (Department Options)</u> .
59.2	Compensation on Termination	If the Comprehensive Agreement is terminated pursuant to <u>Section 42.3 (Failure to Agree; Right to Terminate)</u> or <u>Section 42.4 (Department Options)</u> , the Department shall pay compensation to the Developer in accordance with Section 2 (<u>Compensation on Termination for Extended Force Majeure, Uninsurability or Materially Adverse FCC Order</u>) of <u>Exhibit 6 (Compensation on Termination)</u> .
60.	Termination for Uninsurability	

60.1	Right to Terminate for Uninsurability	The Comprehensive Agreement may be terminated by either Party pursuant to <u>Section 51 (Consequences of a Risk Becoming an Uninsurable Risk)</u> .
60.2	Compensation on Termination	If the Comprehensive Agreement is terminated pursuant to <u>Section 51 (Consequences of a Risk Becoming an Uninsurable Risk)</u> , the Department shall pay compensation to the Developer in accordance with Section 2 (<u>Compensation on Termination for Extended Force Majeure, Uninsurability or Materially Adverse FCC Order</u>) of <u>Exhibit 6 (Compensation on Termination)</u> .
61.	Termination by Court Ruling or for Materially Adverse FCC Order	
61.1	Termination by Court Ruling	The Comprehensive Agreement will automatically terminate upon the occurrence of either of the following: (a) issuance of a final, non-appealable order by a court of competent jurisdiction to the effect that the Comprehensive Agreement in its entirety is void, unenforceable or impossible to perform (except where void, unenforceable or impossible to perform by reason of the Developer’s acts, omissions, negligence, willful misconduct, fraud or breach of warranty or representation) (a “ <u>Termination by Court Ruling for Illegality</u> ”); or (b) issuance of a final, non-appealable order by a court of competent jurisdiction upholding the binding effect on the Developer or the Department of a Change in Law that causes impossibility of either performance of a fundamental obligation or exercise of a fundamental right by the Developer or the Department under the Comprehensive Agreement (a “ <u>Termination by Court Ruling for Impossibility</u> ”).
61.2	Compensation on Termination by Court Ruling	If the Comprehensive Agreement is terminated pursuant to <u>Section 61.1 (Termination by Court Ruling)</u> , the Department shall pay compensation to the Developer in accordance with Section 1 (<u>Compensation on Termination for Convenience, Department Default or Court Ruling</u>) of <u>Exhibit 6 (Compensation on Termination)</u> .
61.3	Termination for Materially Adverse FCC Order	(a) If there is issued a Materially Adverse FCC Order, then the Developer may terminate the Comprehensive Agreement by delivering to the Department a notice to the Department electing to terminate the Comprehensive Agreement (“ <u>FCC Termination Notice</u> ”) within thirty (30) days following the date of the Materially Adverse FCC Order. (b) An FCC Termination Notice must specify that a Materially Adverse FCC Order has been issued. (c) The Comprehensive Agreement will terminate on the date that is thirty (30) days after the date the Department receives a FCC Termination Notice.
61.4	Compensation on Termination for Materially Adverse FCC Order	If the Comprehensive Agreement is terminated pursuant to <u>Section 61.3 (Termination for Materially Adverse FCC Order)</u> , the Department shall pay compensation to the Developer in accordance with Section 2 (<u>Compensation on Termination for Extended Force Majeure, Uninsurability or Materially Adverse FCC Order</u>) of <u>Exhibit 6 (Compensation on Termination)</u> .
62.	Department Step-In	

62.1	Right to Step-In	<p>If the Department reasonably believes that it needs to take action in connection with the Work because:</p> <ul style="list-style-type: none"> (i) an Emergency has arisen; (ii) a Developer Default has occurred and has not been cured within the relevant cure period (if any) set out in <u>Section 57.2 (Notice and Cure Periods)</u>; or (iii) the Developer has failed to meet any Safety Standard within a reasonable period of time under the circumstances, <p>the Department may, subject to the Lenders Direct Agreement, take action in accordance with this <u>Section 62 (Department Step-in)</u>.</p>
62.2	Notice to Developer	<p>(a) If <u>Section 62.1(i) (Right to Step-in)</u> applies and the Department wishes to take action, the Department shall, subject to <u>Section 62.2(b) (Notice to Developer)</u>, notify the Developer in writing of the following:</p> <ul style="list-style-type: none"> (i) the action it wishes to take; (ii) the reason for such action; (iii) the date it wishes to commence such action; (iv) the time period which it believes will be necessary for such action; and (v) to the extent practicable, the effect on the Developer and its obligation to carry out the Work during the period such action is being taken. <p>(b) In the case of an Emergency, the Department may take any action it reasonably believes is necessary in order to mitigate or contain such Emergency without prior notice to the Developer.</p>
62.3	Required Action by the Department	<p>(a) Following service of notice under <u>Section 62.2(a) (Notice to Developer)</u> or upon the occurrence of an Emergency:</p> <ul style="list-style-type: none"> (i) the Department may take any action as notified or otherwise permitted under <u>Section 62.2 (Notice to the Developer)</u> and any consequential additional actions it reasonably believes are necessary (each a “<u>Required Action</u>”); and (ii) the Developer shall use Reasonable Efforts to give all assistance requested by the Department, while the Department is taking any Required Action. <p>(b) The Department shall provide the Developer with notice of completion of any Required Action. The Department shall also use Reasonable Efforts to provide the Developer with notice of anticipated completion as far in advance as is reasonably practicable.</p> <p>(c) The Department shall undertake any Required Action in accordance with Good Industry Practice.</p>

62.4	Step-In Without Developer Breach	<p>If the Department takes Required Action, other than as a result of the Developer breaching its obligations under the Comprehensive Agreement, for so long as, and to the extent that, the Required Action is taken and it prevents or delays the Developer’s performance of any of its obligations under the Comprehensive Agreement:</p> <ul style="list-style-type: none"> (i) the Developer will be relieved from performing such obligations under the Comprehensive Agreement; and (ii) subject to the Developer providing the Department with reasonable assistance (at the expense of the Department to the extent the Developer incurs incremental costs), for the period during which the Department is taking such Required Action, such Required Action will be deemed a Compensation Event.
PART K – MISCELLANEOUS		
63.	Financial Performance Reporting; Audits	<ul style="list-style-type: none"> (a) The Developer shall, and shall cause its Contractors, to maintain books and records related to the performance of the Comprehensive Agreement and necessary to substantiate amounts paid by the Department in accordance with Applicable Law, the terms of the Comprehensive Agreement, and GAAP. (b) Within ninety (90) Calendar Days following the end of the first year of the Commercialization Activities and each anniversary of such date thereafter for the remainder of the term, the Developer shall submit an annual financial performance report (the “<u>Annual Financial Performance Report</u>”) to the Department for its review and approval. (c) The Annual Financial Performance Report will include financial information, assumptions, revenues from the Commercialization Activities, capital investments, O&M Work costs, and sources and uses of funds relating to the Commercialization Activities. The Annual Financial Performance Report will also include an updated Base Case Financial Model, which reflects actual Revenues from Commercial Activities, O&M Costs for Commercial Activities, and Net Commercialization Cash Flows. (d) The Annual Financial Performance Report will be audited by an accredited audit firm chosen by the Developer that is unaffiliated with the Developer and otherwise free of conflicts of interest. The Developer will be responsible for all costs relating to such audits.
64.	Intellectual Property	<p>Except for third party licensed software and software previously developed by the Developer, all work product produced for the Department, including but not limited to source code, software, specifications, plans, designs and engineering, drawings, data, information, or other written, recorded, photographic, or visual materials, trademarks, service marks, copyrights, or other work product produced by the Developer or any Contractor in the performance of the Work shall be deemed “<u>Work Product</u>”. All Work Product is considered services for hire. Accordingly, all Work Product is the exclusive property of the Department. The Developer will notify the Department in writing before using any of the Developer’s previously developed software for the Work. The Developer and the Department will honor all applicable preexisting licenses, copyrights, trademarks, service marks, and patents. If the Developer purchases the right to any license, the agreements for the use or ownership of such license will be placed in the name of the Department, along with all other rights and obligations. In addition, the Developer will mark all Department content or previously unprotected work product designated by the</p>

		Department with a notice as follows: “North Carolina Department of Transportation, (Year)”.
65.	Public Records Law	<p>(a) The Developer acknowledges and agrees that, except as provided by North Carolina General Statutes §§ 132-1 <i>et seq.</i> (“<u>Public Records Law</u>”) or Applicable Law, all Submittals, records, documents, drawings, plans, specifications and other materials in the Department’s possession, including materials submitted by the Developer to the Department, are subject to the provisions of the Public Records Law. If the Developer believes information or materials submitted to the Department constitute trade secrets, proprietary information or other information that is not subject to the Public Records Law or is excepted from disclosure under the Public Records Law or Applicable Law, the Developer shall be solely responsible for specifically and conspicuously designating that information by placing “CONFIDENTIAL” in the center header of each such document or page affected, as it determines to be appropriate. Any specific proprietary information, trade secrets or confidential commercial and financial information shall be clearly identified as such, and shall be accompanied by a concise statement of reasons supporting the claim, including the applicable Law, which supports the claim. Nothing contained in this <u>Section 65 (Public Record Laws)</u> shall modify or amend requirements and obligations imposed on the Department by the Public Records Law or other Applicable Law, and the provisions of the Public Records Law or other Applicable Law shall control in the event of a conflict between the procedures described above and Applicable Law. The Developer is advised to contact legal counsel concerning such Applicable Law and its application to Developer.</p> <p>(b) If the Department receives a request for public disclosure of materials marked “CONFIDENTIAL,” the Department will use reasonable efforts to notify the Developer of the request and give the Developer an opportunity to assert, in writing and at its sole expense, a claimed exception under the Public Records Law or other Applicable Law within the time period specified in the notice issued by the Department and allowed under the Public Records Law. Under no circumstances, however, will the Department be responsible or liable to the Developer or any other Person for the disclosure of any such labeled materials, whether the disclosure is required by Applicable Law, or court order, or occurs through inadvertence, mistake or negligence on the part of the Department or its officers, employees, contractors or consultants.</p> <p>(c) In the event of any proceeding or litigation concerning the disclosure of any material submitted by the Developer to the Department, the Department’s sole involvement will be as a custodian retaining the material until otherwise ordered by a court or such other authority having jurisdiction with respect thereto, and the Developer shall be fully responsible for otherwise prosecuting or defending any action concerning the materials at its sole cost and risk; <i>provided, however</i>, that the Department reserves the right, in its sole discretion, to intervene or participate in the litigation in such manner as it deems necessary or desirable. Except in the case of the Department’s voluntary intervention or participation in litigation, the Developer shall pay and reimburse the Department within thirty (30) days after receipt of written demand and reasonable supporting documentation for all costs and fees, including attorneys’ fees and costs, the Department incurs in connection with any litigation, proceeding or request for disclosure.</p> <p>(d) Notwithstanding the foregoing, the Developer consents to all other disclosures required by Applicable Law. The Developer further expressly waives any right to</p>

		contest, impede, prevent or delay such disclosure, or to initiate any proceeding that may have the effect of impeding, preventing or delaying such disclosure, under the P3 Policy, the Public Records Law or any other Applicable Law relating to the confidentiality or disclosure of information.
66.	Assignment and Transfer; Fundamental Changes; Department Employees	
66.1	Assignment by Developer	Subject to <u>Section 66.2 (Security)</u> , the Developer shall not assign, transfer, pledge, mortgage or otherwise encumber any of its rights or obligations under the Comprehensive Agreement without the prior written consent of the Department.
66.2	Security	The provisions of <u>Section 66.1 (Assignment by the Developer)</u> do not apply to the grant of any security for any financing extended to the Developer (directly or indirectly) under the Finance Documents or to the enforcement of the same. ⁴
66.3	Assignment by Department	The Department may, upon prior written notice to the Developer, but without the Developer’s consent, assign all or any portion of its rights, title and interests in and to the Comprehensive Agreement, the Project, the Project Site, or the Performance Security (if any) to any other Governmental Entity that: <ul style="list-style-type: none"> (i) succeeds to the governmental powers and authority of the Department; and (ii) has sources of funding to perform the payment obligations of the Department under the Comprehensive Agreement that are at least as adequate and secure as the Department’s at the time of the assignment.
66.4	Change or Organization or Name	(a) The Developer shall not change the legal form of its organization without providing prior written notice to the Department. (b) If either Party changes its name, such Party agrees to promptly (and in any event within ten (10) Business Days of such change) furnish the other Party with written notice of such name change and appropriate supporting documentation.
66.5	Department Employees	The Developer shall not engage the services of any Person currently employed by the Department without prior written consent of the Department.
67.	Change in Ownership	
67.1	Restricted Change in Ownership	(a) A Restricted Change in Ownership will constitute a Developer Default for the purposes of <u>Section 57 (Termination for Developer Default)</u> . (b) A “ <u>Restricted Change in Ownership</u> ” will arise if: <ul style="list-style-type: none"> (i) prior to the second (2nd) anniversary of the Project Substantial Completion Date, without the prior written consent of the Department, in its sole discretion, any Qualified Investor ceases to own (directly or indirectly) the same percentage of the issued shares or membership interests in the Developer that it owned (directly or indirectly) on the date of the Comprehensive Agreement, other than as a result of an Additional Equity Investment;

⁴ **Note to Proposers:** Provision to be deleted and/or modified, as needed, to accommodate a corporate finance transaction structure.

		<p>(ii) any Change in Ownership occurs which involves the transfer of any shares, membership interests or control to a Prohibited Person; or</p> <p>(iii) any Change in Ownership occurs which would be reasonably likely to have a material adverse effect on the Developer’s ability to perform its obligations under the Comprehensive Agreement with respect to the O&M Work, taking into account the financial strength and integrity of the transferee, compared to that of the transferor.</p> <p>(c) A Restricted Change in Ownership will not arise pursuant to <u>Section 67.1(a) (<i>Restricted Change in Ownership</i>)</u> as a direct result of:</p> <p>(i) the grant or enforcement of security in favor of the Lenders over or in relation to any shares or membership interests in the Developer or an Equity Member under a Security Document exclusively for the purpose of securing the Project Debt, subject to the terms and conditions of the Comprehensive Agreement;</p> <p>(ii) a change in legal or beneficial ownership of any shares that are listed on a recognized stock exchange, including such transactions involving any initial public offering;</p> <p>(iii) a transfer of interests between managed funds that are under common ownership or control or between the general partner or manager (or the parent company of such general partner or manager) and any managed funds under common ownership or control with such general partner or manager (or the parent company of such general partner or manager), if the relevant funds and the general partner or manager of such funds (or the parent company of such general partner or manager) have been approved by the Department in writing prior to the date of the Comprehensive Agreement;⁵ or</p> <p>(iv) a reorganization or transfer of interest within a group of Persons under common ownership or control of direct or indirect ownership interests in any Person or of any intermediate entity in the chain of ownership of such Person so long as there is no substantive change in the entity or group of entities that ultimately have (individually or collectively) ownership or control of such Person.</p> <p>(d) For the purposes of this <u>Section 67.1 (<i>Restricted Change in Ownership</i>)</u>, a Person will only be deemed to own shares or membership interests in another Person if such Person owns the legal, beneficial and equitable interest in the relevant shares or membership interests of that other Person.</p>
67.2	Notification of Changes in Ownership	<p>(a) Except with respect to any change in legal or beneficial ownership of any shares:</p> <p>(i) that are listed on a recognized stock exchange; or</p> <p>(ii) that are issued pursuant to an employee or management incentive plan,</p>

⁵ **Note to Proposers:** The Department will consider identifying by name entities that are not otherwise captured by this provision that a Proposer wishes to exclude from the definition of Restricted Change in Ownership.

		<p>The Developer shall provide the Department with at least forty-five (45) days' prior written notice of any Change in Ownership.</p> <p>(b) Upon receipt of notice of a Change in Ownership from the Developer under <u>clause (a)</u> above, the Department shall inform the Developer within fifteen (15) Business Days if the Person to which the Developer plans to transfer legal or beneficial ownership of shares is a Prohibited Person under <u>clause (k)</u> of the definition of Prohibited Person.</p> <p>(c) The Developer shall reimburse the Department for all reasonable out-of-pocket expenses (including reasonable and proper fees of consultants and legal counsel) incurred by the Department in connection with its review of any Change in Ownership notified to it in accordance with <u>Section 67.2(a) (Notification of Changes in Ownership)</u> within thirty (30) days of receiving an invoice from the Department with respect to such costs.</p>
68.	Dispute Resolution	
68.1	Dispute Resolution Procedures	<p>(a) The Parties shall endeavor to resolve any Dispute that may arise between them through good faith negotiations.</p> <p>(b) Except as provided in <u>clause (c)</u> below, if any Dispute is not resolved to the mutual satisfaction of all Parties within thirty (30) days after written notification of such Dispute, or such longer time as is mutually agreed, the Dispute shall next be submitted in accordance with the following.</p> <p>(i) If, despite good faith negotiations between the Parties, any Disputes are not resolved within thirty (30) days after written notification of such Dispute, then the Dispute shall be submitted administratively to non-binding mediation as set forth below.</p> <p>(ii) The Parties shall mutually select a private mediator to formally mediate the Disputes. If the Parties cannot mutually select a private mediator, the mediator shall be selected pursuant to the mediation rules established by the American Arbitration Association or other dispute resolution organization agreed to by the Parties. Non-binding mediation shall normally be scheduled within forty-five (45) calendar days of notification of the decision by either party to submit the Dispute to non-binding mediation. The Department and the Developer shall each pay one-half of the fees and administrative costs charged by the selected mediator. Other parties, such as Contractors, may be invited to the non-binding mediation as may be appropriate for the non-binding mediation.</p> <p>(iii) The Parties, to provide economies of scale, may mutually agree in writing to submit one or more Claims, whether or not factually related, to a single, non-binding mediation. In such event, time periods may be extended by mutual written agreement to facilitate preparation for the non-binding mediation.</p> <p>(iv) If the Dispute has not been settled within forty-five (45) calendar days following written notification of the Dispute to non-binding mediation or within such other period that the Parties may agree in writing, such Dispute may be submitted to litigation by either party in accordance with <u>clause (b)(v); provided, however, that no litigation may be filed by either Party</u></p>

		<p>concerning any Claim or Dispute prior to using the procedure described in <u>clause (b)(i)</u>. This procedure is a condition precedent for any Party to commence a civil action for resolution of a Claim or Dispute.</p> <p>(v) Subject to <u>clause (c)</u> below, all litigation between the Parties arising out of or pertaining to a Dispute shall be filed, heard and decided in the General Court of Justice in Wake County, North Carolina, which shall have sole and exclusive jurisdiction and venue; <i>provided, however</i>, if an action must be brought in a federal forum, then it shall be brought and conducted solely and exclusively within the United States District Court for the Eastern District of North Carolina. Each Party shall bear its own attorney’s fees and costs in any dispute or litigation arising out of or pertaining to the Comprehensive Agreement, and no Party shall seek or accept an award of attorney’s fees or costs.</p> <p>(c) After the performance of all of the Developer’s obligations under the Project Documents, if the Developer has not received payments it claims are owed under the Project Documents, then the provisions of North Carolina General Statutes § 136-29 shall apply and such provisions shall be made a part of the Comprehensive Agreement and incorporated herein by reference. For purposes of clarity, the provisions of this <u>clause (c)</u> only apply to payment claims asserted after all of the Developer’s obligations are completed or satisfied under the Project Documents.</p>
68.2	Continuance of Work During Dispute	During the course of the dispute resolution process, the Developer will continue with the Work (including any Work that is the subject of the Dispute) in a diligent manner and without delay or otherwise conform to the Department’s decision or order, and will be governed by all applicable provisions of the Comprehensive Agreement, and the Department shall continue to make payments of any amounts not in dispute pursuant to the terms of the Comprehensive Agreement. Throughout any disputed Work, the Developer will keep complete records of extra costs and time incurred. The Developer will provide the Department access to these and any other records needed for evaluating the Dispute.
68.3	Costs of Dispute Resolution	Each Party will bear its own attorneys’ fees and costs in any Dispute arising out of or pertaining to the Comprehensive Agreement, and neither Party may seek or accept an award of attorneys’ fees or costs, except as otherwise expressly provided in the Comprehensive Agreement.
69.	Consequential Losses	<p>(a) Neither Party will have the right to claim damages, including punitive and incidental damages, against the other Party for breach of the Comprehensive Agreement, in tort or on any other basis whatsoever, to the extent that any loss claimed by either Party is for Indirect Losses.</p> <p>(b) The Parties agree that the limitation in <u>clause (a)</u> will not apply to or limit either Party’s right to recover from the other Party:</p> <p>(i) any Losses of the Developer arising under the Key Contracts as originally executed (or as amended in accordance with the terms of the Comprehensive Agreement), which are not of themselves Indirect Losses;</p> <p>(ii) any Losses (excluding defense costs) to the extent that they are covered by the proceeds of insurance required to be maintained pursuant to <u>Section 49 (Insurance)</u>, or to the extent the Developer is deemed to have self-insured the Loss;</p>

		<p>(iii) any Losses arising out of fraud, criminal conduct, intentional misconduct, recklessness or bad faith on the part of the relevant Party;</p> <p>(iv) amounts payable by the Developer to the Department under an indemnity set out in the Comprehensive Agreement on account of any Third Party Claim against the Department;</p> <p>(v) amounts payable by the Department to the Developer pursuant to <u>Section 40 (Compensation Events)</u> and <u>Exhibit 6 (Compensation on Termination)</u>;</p> <p>(vi) any Liquidated Damages; or</p> <p>(vii) interest, late charges, fees, transaction fees and charges, penalties and similar charges that the Comprehensive Agreement expressly states are due from the relevant Party.</p> <p>Notwithstanding the foregoing, this <u>Section 69 (Consequential Losses)</u> shall not in any way be construed to limit the doctrine of sovereign immunity as applicable to the Department or the State.</p>
70.	Governing Law	The Comprehensive Agreement will be governed and construed in accordance with the laws of the State of North Carolina without application of the State’s choice of law provisions.
71.	Waiver of Jury Trial	THE PARTIES HEREBY KNOWINGLY, IRREVOCABLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHTS THAT ANY MAY HAVE TO A TRIAL BY JURY WITH RESPECT TO ANY ACTION, PROCEEDING, COUNTERCLAIM OR DEFENSE BASED ON THE COMPREHENSIVE AGREEMENT, OR ARISING OUT OF, UNDER OR IN ANY CONNECTION WITH THE COMPREHENSIVE AGREEMENT, OR WITH RESPECT TO ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER ORAL OR WRITTEN) OR ACTIONS OF ANY PARTY HERETO RELATING TO THE COMPREHENSIVE AGREEMENT. THIS PROVISION IS A MATERIAL INDUCEMENT FOR ALL PARTIES ENTERING INTO THE COMPREHENSIVE AGREEMENT. THIS PROVISION APPLIES ONLY TO SUITS BETWEEN THE PARTIES ARISING OUT OF OR RELATED TO THE COMPREHENSIVE AGREEMENT AND DOES NOT APPLY TO THIRD PARTY CLAIMS OR SUITS BY OR ON BEHALF OF THE PARTIES FOR PROJECT PROPERTY ACQUISITION AND/OR CONSTRUCTION CONTRACT CLAIMS AND DEFENSES. Each of the Parties (a) certifies that no representative, agent, attorney or any other Person has represented, expressly or otherwise, that such other Person would not, in the event of any suit, action or proceedings relating to the Comprehensive Agreement, seek to enforce the foregoing waiver and (b) acknowledges that it has been induced to enter into the Comprehensive Agreement by, among other things, the mutual waivers and certifications in this <u>Section 71 (Waiver of Jury Trial)</u> .
72.	Financial Obligations of the Department	(a) Any and all payments by the State are expressly contingent upon and subject to the appropriation, allocation, and availability of funds to the Department. If the Comprehensive Agreement is funded in whole or in part by federal funds, the Department’s performance and payment shall be subject to and contingent upon the continuing availability of said federal funds for the purposes of the Project Documents. If the Term extends into fiscal years subsequent to that in which it is approved, such continuation of the Project Documents is expressly contingent upon the appropriation, allocation and availability of funds by the North Carolina General Assembly for the purposes set forth in the Project Documents. If funds to effect

		<p>payment are not available, the Department will provide written notification to the Developer. This <u>Section 72 (Financial Obligations of the Department)</u> applies to all monetary obligations of the Department set forth in the Project Documents, notwithstanding any contrary provisions of the Project Documents.</p> <p>(b) Pursuant to North Carolina General Statutes § 143C-6-11(i), the following provisions of North Carolina General Statutes § 143C-6-11(h) are incorporated verbatim in the Comprehensive Agreement as follows: “Amounts Encumbered – Transportation project appropriations may be encumbered in the amount of allotments made to the Department of Transportation by the Director for the estimated payments for transportation project contract work to be performed in the appropriation fiscal year. The allotments shall be multiyear allotments and shall be based on estimated revenues and shall be subject to the maximum contract authority contained in subsection (c) above. Payment for transportation project work performed pursuant to contract in any fiscal year other than the current fiscal year is subject to appropriations by the General Assembly. Transportation project contracts shall contain a schedule of estimated completion progress, and any acceleration of this progress shall be subject to the approval of the Department of Transportation provided funds are available. The State reserves the right to terminate or suspend any transportation project contract, and any transportation project contract shall be so terminated or suspended if funds will not be available for payment of the work to be performed during that fiscal year pursuant to the contract. In the event of termination of any contract, the contractor shall be given a written notice of termination at least 60 days before completion of scheduled work for which funds are available. In the event of termination, the contractor shall be paid for the work already performed in accordance with the contract specifications.” For purposes of this <u>Section 72(b) (Financial Obligations of the Department)</u>, the term “schedule of estimated completion progress” means the payment terms set forth in <u>Section 37 (Payments to Developer)</u> and the term “contract specifications” means the Project Documents.</p> <p>(c) Notwithstanding anything herein to the contrary, the Parties acknowledge and agree that the unavailability of funds for the Department to comply with its payment obligations shall in no event diminish, reduce or otherwise affect the Department’s responsibility for moneys owed by the Department under the Project Documents or the Developer’s ability to exercise any rights or remedies under the Project Documents, including its rights to termination compensation pursuant to <u>Exhibit 6 (Compensation on Termination)</u>.</p>
73.	Taxes	The Developer is solely responsible for the payment of taxes accrued or arising out of the performance of its obligations or the exercise of its rights pursuant to the Comprehensive Agreement.
74.	No Petition of FCC	The Developer agrees not to petition the FCC, the North Carolina Utilities Commission, or equivalent Governmental Entity to modify, reform, preempt, enforce, or otherwise affect the terms of the Comprehensive Agreement without the prior written consent of the Department (which consent the Department may withhold, delay or condition in its sole discretion). The Developer agrees that the Department is not subject to “one-touch-make-ready” laws or regulations administered by the FCC or any Governmental Entity in the State.
75.	Cooperation with Other Contractors	

75.1	Duties of the Department	<p>The Department shall:</p> <ul style="list-style-type: none"> (a) notify the Developer in advance of the identity of any Other Contractor and of the nature of the work or services which such Other Contractor is to perform on the Project Site; (b) ensure that each Other Contractor is contractually obligated to cooperate with the Developer and agrees to the activities to be carried out by the Developer and any Other Contractor in order to ensure that the Developer and the other Contractor can perform their respective duties: <ul style="list-style-type: none"> (A) to the Department; and (B) in accordance with Applicable Law; and (c) prior to any Other Contractor carrying out its work or services on the Project Site, cause any such Other Contractor to provide the following information to the Developer: <ul style="list-style-type: none"> (i) a description of the type, design and duration of the work or services to be carried out by the Other Contractor; (ii) the parts of the Project Site subject to the work or services to be carried out by the Other Contractor; and (iii) contact details for the relevant site manager of the Other Contractor.
75.2	Duties of Developer	<p>The Developer shall:</p> <ul style="list-style-type: none"> (a) fully cooperate at all times with Other Contractors performing work or services on the Project Site so that: <ul style="list-style-type: none"> (i) the Developer and the Other Contractors can perform their respective duties to the Department without interference and in accordance with Applicable Law, and (ii) the Department is not in breach of its obligations under the Comprehensive Agreement; and (b) allow any Other Contractor reasonable access to the Project Site and the Broadband Infrastructure at such times as such Other Contractor may reasonably require for the performance of its obligations under the terms of its contracts with the Department; (c) coordinate with the Other Contractors in respect of Developer's obligations under the Comprehensive Agreement that interface with the services to be provided by the Other Contractors under the terms of their contracts with the Department; and (d) provide notice to the Department of any problems which the undertaking or intended undertaking of any work or services of the Other Contractors may have on carrying out the Work of the Developer as soon as possible after becoming aware of such problems.

LIST OF EXHIBITS

Exhibit 1	Definitions
Exhibit 2	Form of Lenders Direct Agreement
Exhibit 3	Conditions Precedent to Notices to Proceed
Exhibit 4	Construction Completion Conditions
Exhibit 5	Key Personnel
Exhibit 6	Compensation on Termination
Exhibit 7	Principles for Calculation of Change in Costs

EXHIBIT 1

DEFINITIONS

Capitalized terms and acronyms used in the CA Terms have the meanings given in this Exhibit 1 (Definitions).

“**Abandon**” means to abandon all or a material part of the Project, which abandonment will be deemed to have occurred if:

- (a) the Developer demonstrates through statements, acts or omissions an intent not to continue (for any reason other than a Compensation Event or Relief Event that materially interferes with its ability to continue) to design, construct, operate or maintain all or a material part of the Project; or
- (b) no significant Work (taking into account the Project Schedule, if applicable, and any Compensation Event or Relief Event) on the Project is performed for a continuous period of more than sixty (60) days.

“**Account Balances**” means, at the Early Termination Date, all amounts standing to the credit of any bank account held by or on behalf of the Developer, or the value of any letter of credit issued in substitution for the maintenance of a reserve in any bank account previously held by the Developer.

“**Additional Equity Investment**” means an Equity Investment made solely by the Qualified Investors after the Closing Date that is not a Committed Equity Investment, or otherwise contractually committed to by the relevant Qualified Investors, as of the Closing Date.

“**Affected Party**” is defined in the definition of “Force Majeure Event”.

“**Affiliate**” means, in relation to any Person, any entity which, directly or indirectly, through one or more intermediaries:

- (a) has a ten percent (10%) or more voting or economic interest in such Person; or
- (b) Controls, is Controlled by, or is under common Control with such Person.

“**Agreement**” means the Comprehensive Agreement (including all its Exhibits), as amended from time to time.

“**Annual Financial Performance Report**” is defined in Section 63(b) (Financial Performance Reporting; Audits).

“**Annual Guaranteed Revenue Share**” means the guaranteed payments that the Developer will pay to the Department (in nominal U.S. dollars) annually throughout the Term. The Annual Guaranteed Revenue Share payments are committed by the Developer and must be paid in full, each year, regardless of the amount of revenues actually generated by the Commercial Activities.⁶

⁶ **Note to Proposers:** For clarity, the Comprehensive Agreement will set forth the amount of the Annual Guaranteed Revenue Share, as shown in the selected proposer’s Commercialization Price Proposal. The amount of the Annual Guaranteed Revenue Share is committed by the Developer and cannot be changed during the Term, regardless of the Developer’s actual financial performance.

“Annual Speculative Net Cash Flow Percentage” means [●] percent.⁷

“Annual Speculative Net Cash Flow Share” means the annual guaranteed revenue sharing payments the Developer will pay to the Department (in nominal U.S. dollars) calculated as follows: for a given year of the Term, Annual Speculative Net Cash Flow Percentage multiplied by the actual positive Net Commercialization Cash Flows generated by the Developer in such year.

“Applicable Law” means any statute, law, code, regulation, ordinance, rule, common law, judgment, judicial or administrative order, decree, directive, or other requirement having the force of law or other governmental restriction (including those resulting from the initiative or referendum process) or any similar form of decision of or determination by, or any interpretation or administration of any of the foregoing by, any Governmental Entity which is applicable to the Project, Work or any relevant Person, whether taking effect before or after the date of the Comprehensive Agreement. Applicable Law excludes Governmental Approvals.

“Appraiser” is defined in Section 5.1(a) (*Determination of Fair Market Value*) of Exhibit 6 (Compensation on Termination).

“Archaeological Remains” means any antiquities, fossils, coins, articles of value, precious minerals, cultural artifacts, human burial sites, paleontological and human remains and other similar remains of archaeological or paleontological interest discovered in any part of the Project Site.

“As-Built Drawings” means the Final Design Documents submitted and updated by the Developer, revised to incorporate all changes made in the specifications and working drawings during construction, O&M Work and Renewal Work and show the dimensions, geometry, and location and features of the Project.

“Base Case Financial Model” means the base case financial model appended to the Comprehensive Agreement (as updated from time to time in accordance with the Comprehensive Agreement).

“Broadband Infrastructure” means, collectively, the Department Infrastructure and the Developer Infrastructure.

“Business Day” means any day that is not a Saturday, a Sunday or a federal public holiday.

“Calendar Year” means the consecutive 12-month period starting on January 1 and ending on December 31.

“Capital Expenditure” means any expenditure which is treated as a capital expenditure in accordance with GAAP or equivalent auditing standards utilized and generally accepted in the country of incorporation of such party.

“CERCLA” means the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9601-9675).

“Certificate of Network Final Acceptance” is defined in Section 21.5(e)(ii) (Network Final Acceptance).

⁷ **Note to Proposers:** The revenue sharing percentages set out by the selected proposer in its Commercialization Price Proposal to be inserted. Such percentages are committed by the Developer and cannot be changed during the Term, regardless of the Developer’s actual financial performance.

“**Certificate of Network Segment Substantial Completion**” is defined in Section 21.2(e)(ii) (*Substantial Completion of Network Segments*).

“**Certificate of Network Substantial Completion**” is defined in Section 21.3(f)(ii) (*Network Substantial Completion*).

“**Certificate of Project Final Acceptance**” is defined in Section 21.6(e)(ii) (*Project Final Acceptance*).

“**Certificate of Project Substantial Completion**” is defined in Section 21.4(f)(ii) (*Project Substantial Completion*).

“**Change in Costs**” means, with respect to any Relevant Event, the effect of that Relevant Event (whether of a one-off or recurring nature, and whether positive or negative) upon the actual or anticipated costs, losses or liabilities of the Developer, including, as relevant, the following:

- (a) the reasonable costs of complying with the requirements of Section 40 (*Compensation Events*), Section 43 (*Changes in Law*), Section 44 (*Department Changes*), or Section 45 (*Developer Changes*), including the reasonable costs of preparation of designs and estimates;
- (b) the costs of continued employment of, or making redundant, staff who are no longer required;
- (c) the costs of employing additional staff;
- (d) reasonable professional fees;
- (e) the effects of costs on implementation of any insurance reinstatement in accordance with the Comprehensive Agreement, including any adverse effect on the insurance proceeds payable to the Developer (whether arising from physical damage insurance or business interruption insurance (or their equivalent)) with respect to that insurance reinstatement and any extension of the period of implementation of the insurance reinstatement;
- (f) operating costs, or life cycle, maintenance or replacement costs;
- (g) Capital Expenditure;
- (h) any deductible or increase in the level of deductible, or any increase in premium under or with respect to any insurance policy; and
- (i) Losses;

provided, that in no circumstances will any Change in Costs include:

- (A) any impact to the Developer’s revenues from Commercial Activities, financing costs or costs arising from the Developer’s obligations to any Commercial End-User, including but not limited to: (I) any costs or other Losses that arise in consequence of the Developer’s receiving Payments or revenues from Commercial Activities later than the date that it would have received them in the absence of the Relevant Event; (II) the loss of Commercial Revenues; or (III) any other Loss or consequential damage that arises in consequence of the Developer’s loss or delayed receipt of revenues from Commercial Activities; and

- (B) any cost of the Developer described in clauses (a) through (i) (inclusive) of the definition of Change in Costs to the extent such cost is the result of the Developer's compliance with any authorization, requirement, or order issued pursuant to Section 214(d) of the Telecommunications Act or (y) any applicable State law.

“Change in Law” means the introduction or repeal (in whole or in part) of, the amendment, alteration or modification to, or the change in interpretation of (in each case including, to the extent applicable, by retroactive effect), any Applicable Law, standards, practices or guidelines issued or published by any Governmental Entity that occur at any time after the Closing Date and that are either:

- (a) binding on the Developer; or
- (b) if not binding on the Developer, both (i) typically complied with in the construction or relevant maintenance industries and (ii) necessary in order to comply with Good Industry Practice or the provisions of the Comprehensive Agreement,

excluding, however, any such introduction, repeal, amendment, alteration, modification or change in relation to:

- (i) the Telecommunications Act or any Applicable Law of the State, to the extent any such introduction, repeal, amendment, alteration, modification or change (I) results in (x) the Developer being designated a common carrier, (y) the application of common carrier regulations to the Project, or (z) the illegality of the location or operation of any Commercial Lateral, or (II) applies to the Developer or the Project by virtue of the Developer's election to become a common carrier under the Telecommunications Act or any Applicable Law of the State prior to the occurrence of such Change in Law;
- (ii) any Applicable Law of the State passed or adopted but not yet effective as of the Closing Date; and
- (iii) any federal, State, or local tax law of general application (it being understood that any change in federal, State, or local tax laws shall not be deemed of general application if such change is solely directed at, and the effect of which is solely borne by, the Developer or similar projects).

“Change in Ownership” means:

- (a) any sale, transfer or disposal of any legal, beneficial or equitable interest in any or all of the shares or membership interests in the Developer or any Related Entity;
- (b) with respect to any of the shares or membership interests referred to in clause (a), any change in the direct or indirect control over:
 - (i) the voting rights conferred on those shares or membership interests;
 - (ii) the right to appoint or remove directors; or
 - (iii) the right to receive dividends or distributions;

- (c) any other arrangements that have or may have or which result in the same effect as clause (a) or clause (b); and
- (d) any transaction (which, for the avoidance of doubt, includes any transaction contemplated but not closed) within the meaning of 31 CFR Section 800.224.

“**Closing Date**” means the date on which all of the conditions precedent set out in Section 3 (Conditions Precedent to Closing Date) have been satisfied or otherwise waived in accordance with the Comprehensive Agreement.

“**Collateral Agent**” means the financial institution listed or otherwise designated to act as trustee or agent on behalf of or at the direction of the Lenders in the Finance Documents with respect to the Project Debt.

“**Commercial Activities**” means any lawful sale of the following services to extent such services are conducted over the Developer Infrastructure: (i) broadband information services, telecommunications, or other similar services, (ii) access to dark fiber optic cable, and (iii) access to Conduit for purposes of supporting digital data communications.

“**Commercial Agreement**” means an agreement between the Developer and a Commercial End-User for the right of use of any portion of the Developer Infrastructure or any substantially similar agreement for the use of the Developer Infrastructure.

“**Commercial Agreements Register**” is defined in Section 8(e) (Certain Covenants and Confirmations).

“**Commercial End-User**” means any Person that contracts with the Developer pursuant to a Commercial Agreement for access to Developer Fibers.

“**Commercial Lateral**” means any physical extension of the Developer Infrastructure consisting of fiber optic cable, conduit, and/or junction boxes within the Department Right-of-Way for the purpose of conducting Commercial Activities.

“**Committed Equity Investment**” means, in the aggregate, (a) any Equity Investment and (b) any Deferred Equity Amounts.

“**Compensation Event**” means any of the following events:

- (a) any material breach of an obligation under the Comprehensive Agreement by the Department;
- (b) any violation of Applicable Law by the Department;
- (c) any Qualifying Change in Law;
- (d) any Required Action taken by the Department in the circumstances described in Section 62.4 (Step-In without Developer Breach);
- (e) any damage or material interruption to, or interference with, the Construction Work caused by any capital project (other than the Project) carried out by any Governmental Entity (other than the Department) or its contractor on or in the vicinity of the Project Site, excluding any Utility Adjustment;

- (f) any Hazardous Materials Release into the Project Site at any time after the Closing Date, including any Remedial Action related thereto, but only to the extent that such release:
 - (i) constitutes or creates a Hazardous Environmental Condition; and
 - (ii) does not constitute a Developer Hazardous Materials Release;
- (g) the discovery of any Undisclosed Hazardous Environmental Conditions, including any Remedial Action related thereto, during the carrying out of the Construction Work during the D&C Period;
- (h) the discovery of any Undisclosed Endangered Species during the carrying out of the Construction Work during the D&C Period;
- (i) the discovery of any Undisclosed Archaeological Remains during the carrying out of the Construction Work during the D&C Period;
- (j) the issuance of any preliminary or permanent injunction or temporary restraining order or other similar order, legal restraint or prohibition by a Governmental Entity of competent jurisdiction under Applicable Law that materially and adversely affects the Department's or the Developer's performance under the Comprehensive Agreement; or
- (k) any failure by the Department to comply with its obligations under Section 75.1 (Duties of the Department) or any failure or failures by an Other Contractor to comply with its contractual obligation to cooperate with the Developer described in Section 75.1(b) (Duties of the Department) in such a manner that would result in a delay to the Construction Work (as set out in the Project Schedule) of more than sixty (60) days; *provided* that the Developer shall have continued to satisfy its obligations under Section 75.2 (Duties of the Developer) for the duration of such failure to cooperate by the Other Contractor,

except, in each case, to the extent attributable to any breach of the Comprehensive Agreement, Applicable Law or any Governmental Approval by, or any negligent act or negligent omission of, a Developer-Related Entity.

“Completion Milestone” means each of the following: (i) Network Substantial Completion with respect to the I-95/U.S. 70 Network; (ii) Project Substantial Completion; (ii) Network Final Acceptance with respect to each Network; and (iii) Project Final Acceptance.

“Completion Milestone Deadline” means:

- (a) with respect to Network Substantial Completion of the I-95/U.S. 70 Network, the I-95/U.S. 70 Network Substantial Completion Deadline;
- (b) with respect to Project Substantial Completion, the Project Substantial Completion Deadline;
- (c) with respect to Network Final Acceptance, the Network Final Acceptance Deadline for the relevant Network; and
- (d) with respect to Project Final Acceptance, the Project Final Acceptance Deadline.

“**Conduit**” means the duct encasing the Department Fibers or the Developer Fibers (as applicable), as further described in the Technical Requirements.

“**Construction Documents**” means final plans for construction and all shop drawings, working drawings, fabrication plans, material and hardware descriptions, specifications, construction quality control reports, construction quality assurance reports and samples necessary for construction and conversion of the Project.

“**Construction Work**” means all Work to build or construct, make, form, furnish, install, supply, deliver or equip the Project, excluding Design Work.

“**Contract**” means any contract, subcontract or other form of agreement to perform any part of the Work or provide any materials, equipment or supplies for any part of the Work, or any such agreement, supplement or amendment at a lower tier, between a Contractor and its lower tier Contractor or a Supplier and its lower tier Supplier, at all tiers.

“**Contractor**” means any Person with whom the Developer has entered into any Contract to perform any part of the Work or provide any materials, equipment or supplies for the Project, on behalf of the Developer, and any other Person with whom any Contractor has further subcontracted any part of the Work, at all tiers. The term “Contractor” will include the Lead Contractor and each O&M Contractor (if any).

“**Control**” means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

“**Cost to Complete**” means (without double-counting):

- (a) those costs (internal and external) that the Department reasonably projects that it will incur in carrying out any process to request tenders from any parties interested in entering into a contract with the Department to achieve Project Final Completion, including all costs related to the preparation of tender documentation, evaluation of tenders and negotiation and execution of relevant contracts; plus
- (b) those costs that the Department reasonably projects that it will incur in relation to remediation or, if remediation is not possible or would cost more than renewal, renewal of any defective D&C Work with respect to any Network Segment that has achieved Substantial Completion; plus
- (c) the costs that the Department reasonably projects that it will incur in achieving Project Final Completion; plus
- (d) any other Losses that the Department would, but for the termination of the Comprehensive Agreement, not have incurred prior to Project Final Completion; minus
- (e) any Insurance Proceeds available to the Department for the purposes of achieving Project Final Completion.

“**D&C Contract**” means any Contract entered into by the Developer for third party management, direction, supervision or performance of all of the D&C Work or any significant portion thereof (including any guaranty or similar credit support provided by a creditworthy entity to backstop obligations under such a Contract). There may be more than one D&C Contract concurrently in effect.

“**D&C Period**” means the period commencing on the Closing Date and ending on the Project Final Acceptance Date.

“**D&C Work**” means the Design Work and the Construction Work.

“**D&C Work Value**” means an amount equal to the D&C Contract Price minus the aggregate of:

- (a) the Cost to Complete;
- (b) any Payments that were paid prior to the Early Termination Date; and
- (c) any Liquidated Damages assessed prior to the Early Termination Date and unpaid as of the Early Termination Date.

“**Data Room**” or “**DR**” means the electronic data room maintained by the Department for the Project during the procurement of the Project, as further described in Part B-1.5 of the RFP.

“**Day**” means a calendar day.

“**Deferred Equity Amounts**” means, on any date, any amount of unfunded equity that (a) has been committed to the Developer as of the Closing Date (including commitments to provide an Equity Investment or Equity Member Debt) and (b) is shown to be utilized in the Base Case Financial Model prior to the Final Project Acceptance Date.

“**Department**” means the North Carolina Department of Transportation.

“**Department Conduit**” means the duct encasing the Department Fibers, as further described in the Technical Requirements, and as otherwise installed, modified, or expanded pursuant to the Comprehensive Agreement.

“**Department Connected Vehicle Sites**” is defined in Section 11(a) (*Cellular Connected Vehicle Sites*).

“**Department Default**” is defined in Section 57.1 (*Department Default*).

“**Department Default Notice**” is defined in Section 57.2(a) (*Notice and Cure Periods*).

“**Department Fibers**” means any fiber optic strands installed in the Project Conduit and reserved for dedicated use by the Department, as required in the Technical Requirements.

“**Department Infrastructure**” means, collectively:

- (a) the Department Conduit;
- (b) the Department Fibers;
- (c) the Department Junction Boxes; and
- (d) the Department Connected Vehicle Sites.

“**Department Junction Boxes**” means:

- (a) any junction boxes installed on the Department Right-of-Way and designated as available for the Project in the Data Room as of the Closing Date;
- (b) any junction boxes to be installed by the Department on the Department Right-of-Way as part of a Department Project after the Closing Date;
- (c) any junction boxes designed and installed in connection with the Department Fibers in accordance with the Technical Requirements,

in each case, as otherwise installed, modified, or expanded pursuant to the Comprehensive Agreement.

“Department-Provided Approvals” means *[permits and other governmental approvals to be provided or obtained by the Department to be listed]*.

“Department Right-of-Way” means the real property owned by the Department, which extends from limited access right-of-way line to limited access right-of-way line, as shown in the plans, documents and the geographic information system maps included in the Data Room.

“Department Termination Notice” is defined in Section 58.5(a) (Termination for Developer Default).

“Department Termination Sum” is defined in Section 1 (*Compensation on Termination for Convenience, Department Default, or Court Ruling*) of Exhibit 6 (Compensation on Termination).

“Design Documents” means all drawings (including plans, profiles, cross-sections, notes, elevations, typical sections, details and diagrams), specifications, reports, studies, working drawings, shop drawings, calculations, electronic files, records and submittals necessary for, or related to, the design of the Project.

“Design Work” means all Work related to the design, redesign, engineering or architecture for the Project (including, without limitation, any Commercial Lateral).

“Developer” means [●].

“Developer Conduit” means the duct encasing the Developer Fibers, as further described in the Technical Requirements and as otherwise installed, modified, or expanded pursuant to the Comprehensive Agreement.

“Developer Connected Vehicle Sites” is defined in Section 11(b) (Cellular Connected Vehicle Sites).

“Developer Default” is defined in Section 58.1 (Developer Default).

“Developer Default Notice” is defined in Section 58.3(a) (Notice and Cure Periods).

“Developer Default (D&C Period) Termination Sum” is defined in Section 3 (*Compensation on Termination for Developer Default Prior to Substantial Project Completion*) of Exhibit 6 (Compensation on Termination).

“Developer Default (Operating Period) Termination Sum” is defined in Section 4 (*Compensation on Termination for Developer Default on or after Substantial Project Completion*) of Exhibit 6 (Compensation on Termination).

“Developer Fibers” means any fiber optic strands installed in the Project Conduit and reserved for dedicated use by the Developer, as required in the Technical Requirements and as otherwise installed, modified, or expanded pursuant to the Comprehensive Agreement.

“Developer Hazardous Materials Release” means any Hazardous Materials Release:

- (a) involving any Hazardous Materials arranged to be brought onto the Project Site or any other location by any Developer-Related Entity, regardless of cause (unless brought onto the Project Site pursuant to a removal of Hazardous Materials, or any Remedial Action with respect to Hazardous Materials, by a Developer-Related Entity in accordance with the requirements of the Comprehensive Agreement);
- (b) to the extent attributable to the breach of any Applicable Law, Governmental Approval or the Comprehensive Agreement (including any acts or omissions that are not in accordance with Good Industry Practice), negligence or willful misconduct by any Developer-Related Entity. The removal of Hazardous Materials, or any Remedial Action with respect to Hazardous Materials, by a Developer-Related Entity in accordance with the requirements of the Comprehensive Agreement will not of itself be a Developer Hazardous Materials Release; or
- (c) without prejudice to the generality of clause (a), to the extent attributable to the use, containment, storage, management, handling, transport and disposal of any Hazardous Materials by any Developer-Related Entity in breach of any of the requirements of the Comprehensive Agreement or any Applicable Law or Governmental Approval.

“Developer Infrastructure” means all of the following located within the Department Right-of-Way:

- (a) the Developer Conduit;
- (b) the Developer Fibers;
- (c) the Developer Junction Boxes;
- (d) any Commercial Lateral;
- (e) Developer Connected Vehicles Sites; and
- (f) any equipment or structure related thereto.

“Developer Junction Boxes” means any junction boxes designed and installed exclusively in connection with the Developer Fibers in accordance with the Technical Requirements and as the same may be otherwise installed, modified, or expanded pursuant to the Comprehensive Agreement.

“Developer-Related Entity” means:

- (a) the Developer;
- (b) the Equity Members;
- (c) the Contractors (including Suppliers);
- (d) any other Persons performing any of the Work for or on behalf of the Developer;

- (e) any other Persons for whom the Developer may be legally or contractually responsible; and
- (f) the employees, agents, officers, directors, representatives, consultants, successors and assigns of any of the foregoing.

“**Developer’s Interest**” means all right, title and interest of the Developer in, to or derived from the Comprehensive Agreement.

“**Disclosed Hazardous Environmental Condition**” means the presence of a Hazardous Environmental Condition to the extent (in terms of location, quantity, and concentration) identified in the Disclosed Information as of the Closing Date.

“**Disclosed Information**” means all written information provided to the Developer or any Developer-Related Entity by the Department or any of its employees, agents, officers, directors, representatives or consultants prior to the date of the Comprehensive Agreement, including: (i) the RFP and its contents and (ii) all contents of the Data Room.

“**Discriminatory Change in Law**” means a Change in Law, the terms of which apply to:

- (a) the Project, or projects substantially the same as the Project;
- (b) private operators of government-owned broadband fiber optic networks; or
- (c) the Developer or any Key Contractor,

provided that in each case, such Change in Law is not of general application to other Persons.

“**Dispute**” means any dispute, disagreement or controversy between the Department and the Developer concerning their respective rights and obligations under the Comprehensive Agreement, including with respect to any claim, alleged breach or failure to perform and any remedy.

“**Dispute Resolution Procedures**” means the procedures for resolving disputes in Section 68 (Dispute Resolution).

“**Distributions**” means, whether in cash or in kind, any:

- (a) dividend or other distribution with respect to share capital;
- (b) reduction of capital, redemption or purchase of shares or any other reorganization or variation to share capital;
- (c) payments made by the Developer under the Equity Member Funding Agreement (whether of principal, interest, breakage costs or otherwise);
- (d) payment, loan, contractual arrangement or transfer of assets or rights directly to the extent that, in each case, it was put in place after the Closing Date and was neither in the ordinary course of business nor on reasonable commercial terms; or
- (e) receipt of any other benefit which is not received in the ordinary course of business and not on reasonable commercial terms.

“**Dollars**” or “**\$**” means the lawful money of the United States of America.

“**Early Termination**” means the termination of the Comprehensive Agreement for any reason prior to the Expiry Date.

“**Early Termination Date**” means the effective date of termination of the Comprehensive Agreement for any reason prior to the Expiry Date, as specified in the relevant provisions of Section 56 (Termination for Convenience), Section 57 (Termination for Department Default), Section 58 (Termination for Developer Default), Section 59 (Termination for Extended Force Majeure), Section 60 (Termination for Uninsurability) or Section 61 (Termination by Court Ruling or for Materially Adverse FCC Order).

“**Emergency**” means any unplanned event affecting the Project that:

- (a) presents an immediate or imminent risk of:
 - (i) death or injury to any individual;
 - (ii) structural failure;
 - (iii) damage to a third party’s property or equipment;
 - (iv) damage to the Environment; or
 - (v) threat to the long-term integrity of any part of the Project;
- (b) is declared a state of emergency pursuant to state or federal law; or
- (c) is recognized or declared by any law enforcement agency or any other Governmental Entity (other than the Department) as an Emergency.

“**Endangered Species**” means any species listed by the U.S. Fish and Wildlife Service as threatened or endangered pursuant to the Endangered Species Act, as amended, 16 U.S.C. §§ 1531, *et seq.*, or any species listed as threatened or endangered pursuant to a State endangered species act.

“**Engineer of Record**” or “**EOR**” means an individual, or individuals, properly registered as an engineer, responsible for preparing the Final Design Documents, all specifications, certification of all shop drawings and the As-Built Drawings for the Project.

“**Environment**” means air, soils, surface waters (including wetlands), groundwater, land, stream sediments, surface or subsurface strata, biological resources, including endangered, threatened and sensitive species, natural systems, including ecosystems, and cultural, historic, archaeological and paleontological resources.

“**Equity Investment**” means:

- (a) any form of direct investment by Equity Members, including the purchase of newly issued equity shares or other equity interests in or the provision of Equity Member Debt to the Developer; and
- (b) any payment under, or draws on, any instrument guaranteeing the provision of Deferred Equity Amounts, including but not limited to any draws by or on behalf of the Developer of any letter(s) of credit issued by or for the account of an Equity Member with respect to Deferred Equity Amounts.

“Equity IRR” means the nominal post-tax internal rate of return on Equity Investment (on a cash-on-cash basis) over the full Term calculated using the Base Case Financial Model, as the discount rate that, when applied to the Distributions gives a net present value equal to the net present value of the Equity Investment. For the purposes of this definition:

- (a) the phrase post-tax refers only to U.S. federal, state and local income tax liability of the Developer (or, if the Developer is a pass-through entity for tax purposes, its Equity Members) and specifically excludes (i) any foreign income tax and other tax of any kind, and (ii) any federal, state or local withholding tax, including any tax that the Developer is obligated to withhold on Distributions (whether actual or constructive) or other payments or allocations to Equity Members or holders of debt of or equity interests in an Equity Member under 26 U.S.C. §§ 1441–1446, despite 26 U.S.C. § 1461;
- (b) in calculating the Equity IRR, a single level of corporate income taxes for a regularly taxed, U.S.-organized, domestic C corporation should be taken into account; and
- (c) the phrase cash-on-cash basis means, with respect to the calculation of a financial return, the calculation of such financial return on the basis of cash actually received in relation to cash actually invested (as opposed to cash committed).

“Equity Member” means each Person that directly holds an equity interest in the Developer.

“Equity Member Debt” means any obligations created, issued or incurred by the Developer for borrowed money that:

- (d) is owed to any Equity Member, any Related Entity, Qualified Investor or any Affiliate of an Equity Member or Affiliate of the Developer, as applicable; and
- (e) is subordinated in priority of payment and security to all Project Debt held by Persons who are not Equity Members, other than any mezzanine debt that is provided by a party referred to in clause (a) on an arm’s length basis.

“Equity Member Funding Agreements” means any loan agreement, credit agreement or other similar finance agreement or subordination agreement providing for or evidencing Equity Member Debt.

“Expiry Date” means the date that is the twenty-fifth (25th) anniversary of the Project Substantial Completion Date, as such date may be extended pursuant to Section 2(b) (Term).

“Fair Market Value” means, with respect to the Developer’s Interest, the following, determined pursuant to the procedures set forth in Section 5.1 (*Determination of Fair Market Value*) of Exhibit 6 (Compensation on Termination):

- (a) The amount a willing and able buyer would offer, and a willing and able seller would accept, for the purchase and sale of the Developer’s Interest in an arm’s length transaction, assuming:
 - (i) neither party is under economic compulsion or has special bargaining power;
 - (ii) subject to clause (e) below, the buyer possess all information in the possession of the Developer relating to the Project, its condition, the Work, the Project Documents, and the revenues and expenses of the Developer;

- (iii) the event or circumstance that requires determination of fair market value had not occurred and accordingly the Developer's Interest would remain in effect and the Developer would remain a going concern for the remainder of the Term and would not receive or be entitled to receive any compensation for fair market value from the Department under the Comprehensive Agreement;
 - (iv) subject to clause (e) below, there exists no prior, known or reasonably foreseeable unusual temporary event or circumstance specific to the Project (e.g., damage or destruction to a material portion of the Broadband Infrastructure) or to the project financing market for similar transactions (as distinguished from general market, economic and environmental conditions), positive or negative, except to the extent such an event or circumstance is not yet rectified and affects the existing or future condition or continued viability of the Project or the cost to rectify and recover, in which case Fair Market Value will reflect the cost of such event or circumstance, positive or negative (if such event or circumstance consists of damage or destruction to a material portion of the Broadband Infrastructure, Fair Market Value will reflect (x) the estimated cost to repair and replace the damage or destroyed portion(s) of the Broadband Infrastructure and (y) the loss of revenue during the estimated time to repair and replace the damaged or destroyed portion(s) of the Broadband Infrastructure, and the Developer will retain the right to insurance coverage for loss occasioned thereby);
 - (v) there would occur no further unusual temporary event or circumstance specific to the Project (e.g., damage or destruction to a material portion of the Broadband Infrastructure) or the project financing market for similar transactions (as distinguished from general market, economic and environmental conditions), positive or negative, not known or reasonably foreseeable at the time of appraisal;
 - (vi) there would occur no cancellation or renegotiation of Commercial Agreements in effect, provided that the parties agree that, without double-counting, the Fair Market Value of gross revenue which has been received but not earned (in accordance with US GAAP) under Commercial Agreements (if any) will be zero.
 - (vii) there would occur no future Change in Law not known or reasonably foreseeable at the time of appraisal;
 - (viii) there exists no adverse effect from a Department Default, and both Parties would generally continue to perform their respective obligations under the Project Documents for the remainder of the Term absent early termination; and
 - (ix) the buyer is required to fund the Deferred Equity Amounts, if required.
- (b) If the event triggering the Fair Market Value determination occurs prior to the Project Substantial Completion Date, then it also shall be assumed that Project Substantial Completion will occur or has occurred by the Project Substantial Completion Deadline and that the Term will continue thereafter until the Expiry Date. In addition, the valuation shall take into account the capital costs previously expended and expected capital costs to achieve Project Substantial Completion and Project Final Acceptance, the expected Project Substantial Completion Date under the Project Schedule, and existing and expected circumstances affecting cost and schedule performance, including existing and expected

delay both due to Relief Events and other circumstances that are not Relief Events. The foregoing amount shall be subject to reduction as provided in clause (c) below.

- (c) If Fair Market Value is being determined where the Early Termination Date precedes Project Substantial Completion Date, then there shall be subtracted from the amount under clause (b) above the amount of capital costs and investment (including capitalized interest) that the Developer would be reasonably expected to incur from and after the Early Termination Date to achieve Project Substantial Completion and Project Final Acceptance.
- (d) Fair Market Value excludes the value of cash in accounts held by or on behalf of the Developer, including in Lender accounts and reserve accounts.
- (e) The effect of any Compensation Event occurring prior to the determination of Fair Market Value shall be addressed as follows:
 - (i) to the extent the Developer previously received payment in respect of a Compensation Event for a Change in Costs accruing from and after the Early Termination Date from such Compensation Event, Fair Market Value shall not further compensate the Developer for such impacts and, accordingly, Fair Market Value shall be determined by taking into account the Change in Cost accruing from and after the Early Termination Date;
 - (ii) to the extent a compensation amount in respect of a Compensation Event has previously been determined (by mutual agreement, the Dispute Resolution Procedures, or otherwise) and would be payable to the Developer after the Early Termination Date for a Change in Costs accruing from and after the Early Termination Date from such Compensation Event, Fair Market Value shall include the present value of the right to such further payments (and the Developer shall have no other claim from such future Change in Costs); and
 - (iii) to the extent no compensation amount in respect of a Compensation Event has previously been determined, then Fair Market Value shall be determined as if the Compensation Event had not occurred and therefore is unaffected by any resulting Change in Costs accruing from and after the Early Termination Date (and the Developer shall have no other claim for such future Change in Costs).

“**FCC**” means the Federal Communications Commission.

“**Federal Requirements**” means the relating to the use of federal-aid funds on the Project set out in Appendix Part A to the RFP.

“**Final Design**” means, depending on the context:

- (a) the Final Design Documents;
- (b) the design concepts set out in the Final Design Documents; or
- (c) the process of developing the Final Design Documents.

“**Final Design Documents**” means the complete final construction drawings, including plans, profiles, cross-sections, notes, elevations, typical sections, details and diagrams, design criteria, specifications,

reports, studies, calculations, electronic files, records and submittals prepared by the Developer (and that have been Signed and Sealed by the Engineer of Record), necessary or related to construction and maintenance of the Project.

“**Final Warning Notice**” is defined in Section 58.2(b)(i) (Final Warning Notice).

“**Finance Documents**” means the Funding Agreements and the Security Documents.

“**Force Majeure Event**” means the occurrence of any of the following events after the date of the Comprehensive Agreement that directly causes either Party (the “Affected Party”) to be unable to comply with all or a material part of its obligations under the Comprehensive Agreement:

- (a) war, civil war, invasion, violent act of foreign enemy or armed conflict;
- (b) nuclear, chemical or biological contamination unless the source or cause of the contamination is brought to or near the Project Site by the Developer or a Developer-Related Entity, or is a result of any breach by the Developer of the terms of the Comprehensive Agreement;
- (c) ionizing radiation unless the source or cause of the ionizing radiation is brought to or near the Project Site by the Developer or a Developer-Related Entity, or is as a result of any breach by the Developer of the terms of the Comprehensive Agreement;
- (d) an act of Terrorism; or
- (e) epidemic, pandemic, or Quarantine Restriction.

“**Force Majeure Termination Notice**” is defined in Section 42.3(a) (Failure to Agree; Right to Terminate).

“**GAAP**” means Generally Accepted Accounting Principles in the U.S. currently in effect.

“**General Change in Law**” means a Change in Law that is not a Discriminatory Change in Law.

“**Good Faith**” means observance of reasonable commercial standards of fair dealing in a given trade or business.

“**Good Industry Practice**” means the exercise of the degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from time to time from a skilled and experienced designer, engineer, constructor, maintenance contractor or operator or developer seeking in Good Faith to comply with its contractual obligations, Applicable Law and Governmental Approvals, using accepted standards and criteria for design, construction, and repair normally used on similar projects in the same locality, and engaged in the same type of undertaking in the same locality under similar circumstances and conditions, including environmental conditions.

“**Governmental Approval**” means all approvals, permits, permissions, consents, licenses, certificates (including sales tax exemption certificates) and authorizations (whether statutory or otherwise) which are required from time to time in connection with the Project to be issued by the Department or any Governmental Entity.

“Governmental Entity” means the government of the United States of America, the State, the cities and counties within the State and any other agency, or subdivision of any of the foregoing, including any federal, state, or municipal government, and any court, agency, special district, Department or other authority exercising executive, legislative, judicial, regulatory, administrative or taxing functions of, or pertaining to, the government of the United States of America, the State or the cities and counties within the State. “Governmental Entity” does not include the Department and, with respect to any the Compensation Event described in clause (n) of the definition thereof, “Governmental Entity” does not include the FCC or the North Carolina Utilities Commission or any court that enforces an order of the FCC or the North Carolina Utilities Commission.

“Guaranteed Upfront Payment” means the guaranteed payment that the Developer must pay in full to the Department on or before the Project Substantial Completion Date. The Guaranteed Upfront Payment may be paid to the Department in increments pro-rated according to the schedule of values for the design-build scope of work.⁸

“Handback Requirements” means the asset condition and preventative maintenance requirements set forth in Part F-1.2 of the RFP.

“Hazardous Environmental Condition” means the presence of any Hazardous Materials on, in, under or about a Project Site at concentrations or in quantities that are required to be removed or remediated by any Applicable Law or in accordance with the requirements of the Comprehensive Agreement, any Governmental Entity or any Governmental Approval.

“Hazardous Materials” means any element, chemical, compound, mixture, material or substance, whether solid, liquid or gaseous, which at any time is defined, listed, classified or otherwise regulated in any way under any Applicable Law (including CERCLA), or any other such substances or conditions (including mold and other mycotoxins, fungi or fecal material) which may create any unsafe or hazardous condition or pose any threat or harm to the Environment or human health and safety.

“Hazardous Materials Release” means any spill, leak, emission, release, discharge, injection, escape, leaching, dumping or disposal of Hazardous Materials into the soil, air, surface water, groundwater or Environment, including any exacerbation of an existing release or condition of Hazardous Materials contamination.

“Hedging Agreements” means any Finance Documents entered into for the purposes of hedging the Developer’s exposure to floating rate interest risk.

“Hedging Liabilities” means all amounts due from the Developer to the Lenders by reason of the early termination of any Hedging Agreements.

“Hedging Receipts” means all amounts (if any) payable by the Lenders to the Developer by reason of the early termination of any Hedging Agreements.

“I-95/U.S. 70 Network” means the fiber optic network along the I-95 and U.S. 70 corridors, as further described in Part B-1.4 of the RFP.

⁸ **Note to Proposers:** For clarity, the Comprehensive Agreement will set forth the amount of the Guaranteed Upfront Payment, as shown in the selected proposer’s Commercialization Price Proposal. The amount of the Guaranteed Upfront Payment is committed and cannot be changed following submission of Commercialization Price Proposals.

“I-95/U.S. 70 Network Substantial Completion Deadline” means [October 31, 2023], as such date may be extended in accordance with the terms of the Comprehensive Agreement.

“Indemnified Parties” means the Department, its officials, officers, employees and agents.

“Indirect Losses” means loss of profits, loss of use, loss of production, inefficiencies, loss of business, disruption, loss of business opportunity, acceleration, or any claim for consequential loss or for indirect loss of any nature but excluding any of the same that relate to payments expressly provided for under the Comprehensive Agreement.

“Initial Commercial End-User” means the Commercial End-User that is a counterparty to a Closing Commercial Agreement.

“Initial Facilities Installation Proposal” means an initial proposal from any Person other than the Developer to lease, construct, or operate facilities on, over, or under the Department Right-of-Way for purposes of (i) selling bandwidth, telecommunication, or other similar services, (ii) selling access to dark fiber optic cable, or (iii) selling access to conduit for the purpose of supporting digital data communications.

“Initial Warning Notice” is defined in Section 58.2(a)(i) (Initial Warning Notice).

“Insolvency Event” means with respect to any Person:

- (a) any involuntary bankruptcy, insolvency, liquidation, company reorganization, restructuring, suspension of payments, scheme of arrangement, appointment of provisional liquidator, receiver or administrative receiver, resolution or petition for winding-up or similar proceeding, under any Applicable Law, in any jurisdiction, except if the same has been dismissed within sixty (60) days;
- (b) any voluntary bankruptcy, insolvency, liquidation, company reorganization, restructuring, suspension of payments, scheme of arrangement, appointment of provisional liquidator, receiver or administrative receiver, resolution or petition for winding-up or similar proceeding, under any Applicable Law, in any jurisdiction; or
- (c) any general inability on the part of that Person to pay its debts as they fall due.

“Insurance Proceeds” means all proceeds from insurance payable to the Developer (or that should have been payable to the Developer but for the Developer’s breach of any obligation under the Comprehensive Agreement to take out or maintain such insurance) on or after the Early Termination Date.

“Key Assets” means all assets and rights to enable the Department or a successor contractor to own, operate and maintain the Project in accordance with the Comprehensive Agreement, including:

- (a) any buildings or other structures;
- (b) any core equipment;
- (c) any books, records or other documents (including operation and maintenance manuals, health and safety manuals and other know-how);
- (d) any spare parts, tools and other assets (together with any warranties with respect to assets being transferred);

- (e) to the extent required in accordance with Section 64 (Intellectual Property), any Work Product; and
- (f) any contractual rights.

“Key Contract” means:

- (a) the D&C Contract;
- (b) each O&M Contract (if any); and
- (c) any guarantee, performance or payment security, or any other support provided with respect to the obligations of a Key Contractor under any of the foregoing.

“Key Contractor” means the contractual counterparty to the Developer under any Key Contract.

“Key Personnel” means those individuals listed in Exhibit 5 (Key Personnel) and any Persons who replace such individuals in accordance with Section 30 (Key Personnel).

“Lead Contractor” means [●] (or, if the Developer enters into a new D&C Contract in accordance with the terms of the Comprehensive Agreement, the Contractor under such new D&C Contract).

“Lead Contractor Member” means, if the Lead Contractor is an unincorporated consortium, a partnership or other form of joint venture, each member or partner (as applicable) of the Lead Contractor.

“Lead Engineer” means the entity (whether a single incorporated entity or an incorporated or unincorporated joint venture) with primary responsibility for preparation of the detailed plans and specifications for construction of the Project.

“Lender” means any Person that:

- (a) provides Project Debt, together with their successors and assigns; or
- (b) is appointed by any Person referred to in clause (a) as its agent or trustee in connection with the Project Debt.

“Lenders Direct Agreement” means the agreement substantially in the form attached as Exhibit 2 (Form of Lenders Direct Agreement) by and among the Department, the Developer and the Lender (or if there is more than one Lender, the Collateral Agent on behalf of the Lenders).

“Lenders’ Liabilities” means, at the relevant time, the aggregate of (without double-counting):

- (a) all principal, interest (including default interest under the Finance Documents, but with respect to default interest, only to the extent that it arises as a result of the Department making any payment later than the date that it is due under the Comprehensive Agreement or any other default by the Department under the Comprehensive Agreement), banking fees and premiums on financial insurance policies, costs and expenses and other amounts properly incurred owing or outstanding to the Lenders by the Developer under or pursuant to the Finance Documents on the Early Termination Date, including any prepayment costs, make-whole amounts and breakage costs; plus
- (b) Hedging Liabilities; minus

- (c) Hedging Receipts.

“**Liquidated Damages**” has the meaning set forth in Section 39 (Liquidated Damages).

“**Long Stop Deadline**” means, as applicable:

- (a) with respect to the I-95/U.S. 70 Network, the date that is three hundred sixty-five (365) days following the I-95/U.S. 70 Network Substantial Completion Deadline; and
- (b) with respect to the Project, the date that is three hundred sixty-five (365) days following the Project Substantial Completion Deadline.

“**Losses**” means any loss, damage, injury, liability, obligation, cost, response cost, expense, fee, charge, judgment, penalty or fine. Losses include injury to or death of Persons, damage or loss of property, and harm or damage to natural resources.

“**Materially Adverse FCC Order**” means a final, unappealable order of the FCC that (i) preempts any Special Covenant and (ii) has material adverse effect on the Fair Market Value of the Developer’s Interest.

“**Negative Commercial Revenue Impact**” means, solely with respect to any Compensation Event, the amount by which such Compensation Event (i) decreases the amount of revenues that the Developer demonstrates that it can reasonably expect to receive and earn pursuant to Commercial Agreements below (ii) the amount of revenues that the Base Case Financial Model forecasted that the Developer would receive and earn pursuant to Commercial Agreements.

“**NEPA Document**” means [*name of NEPA document for Project to be inserted*].

“**Net Commercialization Cash Flows**” means, for a given year, Revenues from Commercial Activities, plus any refinancing gains realized by the Developer, minus each of the following for such year: (i) O&M Costs for Commercial Activities; (ii) the Annual Guaranteed Revenues paid to the Department; (iii) debt service and coverage requirements; (iv) capital expenditures funded by the Developer using Revenues from Commercial Activities; (v) capital expenditures funded by the Developer using equity capital; and (vi) taxes. Net Commercialization Cash Flows does not include equity capital contributions nor debt drawdowns, and therefore Net Commercialization Cash Flows may be less than zero.

“**Net Lenders’ Liabilities**” means the amount calculated (without double-counting) as follows:

- (a) Lenders’ Liabilities; minus
- (b) Account Balances; minus
- (c) Insurance Proceeds (excluding proceeds of personal injury, property damage or other third party liability insurance payable to or for the account of a third party).

“**Network**” means each of (i) the I-95/U.S. 70 Network and (ii) the U.S. 74 Network.

“**Network Final Acceptance**” means the satisfaction of all Network Final Acceptance Conditions.

“**Network Final Acceptance Conditions**” are those conditions in Part 4 (*Network Final Acceptance Conditions*) of Exhibit 4 (Construction Completion Conditions).

“**Network Final Acceptance Deadline**” means, with respect to a Network, the date that is sixty (60) days after the achievement of Network Substantial Completion for such relevant Network.

“**Network Segment**” means [●].⁹

“**Network Segment Substantial Completion**” means, with respect to a Network Segment, the satisfaction of all the Network Segment Substantial Completion Conditions for the such Network Segment.

“**Network Segment Substantial Completion Conditions**” are those conditions in Part 1 (*Network Segment Substantial Completion Conditions*) of Exhibit 4 (Construction Completion Conditions).

“**Network Segment Substantial Completion Date**” means, which respect to each Network Segment, the date on which the Developer achieves Network Segment Substantial Completion.

“**Network Substantial Completion**” means the satisfaction of all Network Substantial Completion Conditions.

“**Network Substantial Completion Conditions**” are those conditions in Part 2 (*Network Substantial Completion Conditions*) of Exhibit 4 (Construction Completion Conditions).

“**No Fault Termination Sum**” is defined in Section 2 (*Compensation on Termination for Extended Force Majeure, Uninsurability or Materially Adverse FCC Order*) of Exhibit 6 (Compensation on Termination).

“**NTP1**” is defined in Section 20.1(a) (Design Work and Conditions Precedent to NTP1).

“**NTP2**” is defined in Section 20.2(a) (Construction Work and Conditions Precedent to NTP2).

“**O&M Contract**” means any Contract entered into by the Developer for third party management, direction, supervision or performance of all of the O&M Work or any significant portion of the O&M Work with a Contract value in excess of five hundred thousand dollars (\$500,000). There may be more than one O&M Contract concurrently in effect.

“**O&M Contractor**” means the Contractor under any O&M Contract.

“**O&M Contractor Member**” means individuals or organizations that comprise the O&M Contractor.

“**O&M Costs for Commercial Activities**” means any actual documented costs arising from incremental operating and maintenance costs of the Developer Infrastructure.

“**O&M Work**” means all Preventive Maintenance and Renewal Work.

“**Operating Activities**” is defined in Section 8(g) (Grant of Rights).

“**Operating Period**” means, in respect of each Network Segment, the period starting on the Network Segment Substantial Completion Date for such Network Segment and ending on the Termination Date.

“**Other Contractor**” means any contractor of the Department (other than the Developer and any Developer-Related Entity) carrying out work on the Project Site.

⁹ **Note to Proposers:** Specific Network Segments to be defined in the Comprehensive Agreement.

“**P3 Policy**” means the North Carolina Department of Transportation Public Private Partnerships Policy & Procedures.

“**Parties**” means the Department and the Developer.

“**Performance Points**” means the points that may be assessed for unsatisfactory performance pursuant to Section F-1.2 of the RFP.

“**Performance Point Default Trigger**” means [●].¹⁰

“**Performance Security**” has the meaning set forth in Section 52 (Performance Security).

“**Persistent Breach**” means a breach for which a Final Warning Notice has been issued, that:

- (d) continues for more than thirty (30) consecutive days after the date of service of the Final Warning Notice; or
- (e) recurs three (3) or more times within the six (6)-month period after the date of service of the Final Warning Notice.

“**Person**” means an individual, a general or limited partnership, a joint venture, a corporation, a limited liability company, a trust, an unincorporated organization or a governmental authority.

“**Positive Commercial Revenue Impact**” means, solely with respect to any Relevant Event that occurs after the Substantial Project Completion Date, the amount by which such Relevant Event increases the amount of revenues that the Parties reasonably agree that the Developer can expect to receive and earn pursuant to Commercial Agreements above the amount of revenues that the Base Case Financial Model forecasted that the Developer would receive and earn pursuant to Commercial Agreements.

“**Preventive Maintenance**” means Work to preserve the current condition of assets, including any inspection, that is routine in nature and includes matters that are typically included as an annual or biannual recurring cost for maintenance of comparable assets to those forming part of the Project.

“**Principal Developer Documents**” means the Project Documents to which the Developer is a party.

“**Prohibited Person**” means any Person who is:

- (a) debarred, suspended, proposed for debarment with a final determination still pending, declared ineligible or voluntarily excluded from participating in procurement or nonprocurement transactions with the Department, the State, or federal government or any department, agency or instrumentality of the federal government;
- (b) indicted, convicted or had a civil or administrative judgment rendered against such Person for any violation of law involving fraud, conspiracy, collusion, bribery, perjury, material misrepresentation, or any other violation that shows a similar lack of moral or ethical integrity, and no event has occurred and no condition exists that is likely to result in the debarment or suspension of such Person from contracting with the federal government or any department, agency or instrumentality of the federal government;

¹⁰ **Note to Proposers:** Specific threshold/trigger to be developed based on non-performance disincentive regime described in Part F-1.2. of the RFP.

- (c) listed on the “Lists of Parties Excluded from Federal Procurement and Nonprocurement Programs” issued by the U.S. General Services Administration;
- (d) located within, or doing business or operating from, a country or other territory subject to a general embargo administered by the United States Office of Foreign Assets Control (OFAC);
- (e) designated on the OFAC list of “Specially Designated Nationals”;
- (f) otherwise targeted under economic or financial sanctions administered by the United Nations, OFAC or any other U.S. federal economic sanctions authority or any divestment or sanctions program of either State;
- (g) a banking institution chartered or licensed in a jurisdiction against which the United States Secretary of the Treasury has imposed special measures under Section 311 of the USA PATRIOT Act (“Section 311”);
- (h) located within or is operating from a jurisdiction that has been designated as non-cooperative with international anti-money laundering principles by the Financial Action Task Force on Money Laundering;
- (i) a financial institution against which the United States Secretary of the Treasury has imposed special measures under Section 311;
- (j) a senior foreign political figure or a prohibited foreign shell bank within the meaning of 31 CFR Section 103.175;
- (k) any Person with whom the Department is engaged in litigation relating to performance of contract or business practices, unless the Department has first waived (in the Department’s absolute discretion) the prohibition on a transfer to such Person during the continuance of the relevant litigation, by written notice to the transferring equity holder, with a copy to the Developer; or
- (l) a “foreign person” within the meaning of 31 CFR Section 800.216; *provided* that the Change in Ownership between the foreign person and the Developer is a “covered transaction” within the meaning of Section 721 of Title VII of the Defense Production Act of 1950, as amended (“Section 721”), and 31 CFR Part 800, unless the foreign person and the Developer file a voluntary notice of the Change in Ownership with the Committee on Foreign Investment in the United States in accordance with Section 721 and 31 CFR Part 800 and prior to the closing of such Change in Ownership:
 - (i) the Committee on Foreign Investment in the United States has advised the foreign person and/or the Developer in writing that the Change in Ownership is not a covered transaction within the meaning of Section 721 and 31 CFR Part 800;
 - (ii) the Committee on Foreign Investment in the United States has advised the foreign person and the Developer in writing that the Change in Ownership does not present any national security risks or other provisions of law adequately address those risks and concludes action;

- (iii) the Committee on Foreign Investment in the United States determines that the Change in Ownership presents national security concerns that other provisions of law do not adequately address and enters into an agreement with the foreign person and the Developer to mitigate such risks; or
- (iv) the President of the United States has announced a decision not to exercise his authority pursuant to Section 721 with respect to such Change in Ownership.

“**Project**” means the design, construction, financing, testing, commissioning, provisioning, operation, and maintenance, of the Broadband Infrastructure included as part of each of the I-95/U.S. 70 Network and the U.S. 74 Network, and all other works and ancillary services in accordance with the Comprehensive Agreement, including the Commercial Activities.

“**Project Conduit**” means the Conduit constructed by the Developer pursuant to the Comprehensive Agreement.

“**Project Data**” means:

- (a) the Design Documents; and
- (b) any other information, documents or data acquired or brought into existence or used in relation to the Work or the Comprehensive Agreement,

in each case, that is used by or on behalf of any Developer-Related Entity in connection with the provision of the Work or the performance of the Developer’s obligations under the Comprehensive Agreement.

“**Project Debt**” means all outstanding obligations from time to time pursuant to the Finance Documents.

“**Project Documents**” means the Comprehensive Agreement, the Key Contracts, and the Finance Documents.

“**Project Fibers**” means, collectively, the Department Fibers and the Developer Fibers.

“**Project Final Acceptance**” means the satisfaction of all Project Final Acceptance Conditions.

“**Project Final Acceptance Conditions**” are those conditions in Part 5 (*Project Final Acceptance Conditions*) of Exhibit 4 (Construction Completion Conditions).

“**Project Final Acceptance Date**” means the date on which the Developer achieves Final Project Acceptance.

“**Project Final Acceptance Deadline**” means the date that is sixty (60) days after the Project Substantial Completion Date, as such date may be extended in accordance with the Comprehensive Agreement.

“**Project Site**” means [●].¹¹

“**Project Substantial Completion**” means the satisfaction of all Project Substantial Completion Conditions.

¹¹ **Note to Proposers:** Definition to identify those portions of the Department’s Right-of-Way on which the Project is to be constructed.

“Project Substantial Completion Conditions” are those conditions in Part 3 (*Project Substantial Completion Conditions*) of Exhibit 4 (Construction Completion Conditions).

“Project Substantial Completion Date” means the date on which the Developer achieves Project Substantial Completion.

“Project Substantial Completion Deadline” means December 1, 2026, as such date may be extended in accordance with the terms of the Comprehensive Agreement.

“Proposal” means the proposal submitted by the Developer to the Department in response to the RFP.

“Proposal Due Date” means [●].

“Proposer” means each firm or team of firms that was shortlisted in accordance with the RFQ and invited to submit a proposal to the Department in response to the RFP.

“Protection in Place” means any action taken to avoid damaging a Utility which does not involve removing or relocating that Utility, including staking the location of the Utility, exposing the Utility, avoidance of a Utility’s location by construction equipment, installing steel plating or concrete slabs, encasement in concrete, temporarily de-energizing power lines and installing physical barriers. The term includes both temporary measures and permanent installations meeting this definition.

“Public Records Law” is defined in Section 65(a) (Public Records Law).

“Punch List” means an itemized list of Construction Work which remains to be completed, corrected, adjusted, or modified, the existence, correction and completion of which will have no material or adverse effect on the normal, uninterrupted and safe use and operation of a Network Segment, Network or the Project (as applicable).

“Qualified Investor” means [●].¹²

“Qualifying Change in Law” means:

- (c) a Discriminatory Change in Law; or
- (d) a General Change in Law which involves Capital Expenditure,

which, in either case, was not foreseeable at the Closing Date.

“Quarantine Restriction” means any Applicable Law enacted by a Governmental Entity in response to an epidemic or pandemic that restricts the movement or gathering of people in an effort to curb the outbreak or spread of disease, including so-called stay-at-home or shelter-in-place orders.

“Reasonable Efforts” means all those steps (if any) in the power of the relevant Party that are capable of producing the desired result, being steps which a prudent, determined and commercially reasonable Person desiring to achieve that result would take; *provided that* “Reasonable Efforts” does not mean that, subject to its other express obligations under the Comprehensive Agreement, the relevant Party is required to expend funds, except for those necessary to meet the reasonable costs reasonably incidental or ancillary to

¹² **Note to Proposers:** To be determined based on Developer’s financing structure.

the steps to be taken by the relevant Party (including its reasonable travel expenses, correspondence costs and general overhead expenses).

“**Redundancy Payment**” means the payment of all wages earned, accrued unused vacation time, and any other payments required by Applicable Law or required by the employer’s employment agreement with the employees.

“**Related Entity**” means each of: [●].¹³

“**Relevant Event**” means any of the following:

- (a) a Department change for which the Department has issued a Department change order;
- (b) a Developer change that the Department has approved by issuing a Developer change order; or
- (c) a Compensation Event.

“**Relevant Insurance Amount**” is defined in Section 51(a)(iv)(A) (Consequences of a Risk Becoming an Uninsurable Risk).

“**Relief Event**” means:

- (a) any Change in Law that is not a Qualifying Change in Law;
- (b) any Force Majeure Event;
- (c) any flood;
- (d) any fire, explosion or earthquakes;
- (e) any tornado or named windstorm and ensuing storm surges;
- (f) any riot or civil commotion;
- (g) any blockade or embargo;
- (h) any:
 - (i) official or unofficial strike;
 - (ii) lockout;
 - (iii) go-slow; or
 - (iv) other labor dispute,generally affecting the construction industry or a significant sector of it;

¹³ **Note to Proposers:** To be determined following selection of preferred proposer based on members of proposer’s consortium.

- (i) any accidental loss or damage to the Project Site or any roads servicing the Project Site (including obstructed waterways); or
- (j) any delay in obtaining any Governmental Approval to the extent that such delay is beyond the reasonable control of any Developer-Related Entity; or
- (k) any material interruption to, or interference with, the Work caused by the entry onto the Project Site or the Broadband Infrastructure of a Governmental Entity empowered to enforce Applicable Law for purposes of carrying out such Governmental Entity's law enforcement duties; *provided* that such entry onto the Project Site or the Broadband Infrastructure is not attributable to any investigation of, or action by, any Developer-Related Entity,

except, in each case, to the extent attributable to any breach of the Comprehensive Agreement, Applicable Law or any Governmental Approval by, or any negligent act or negligent omission of, a Developer-Related Entity.

“Remedial Action” means any remediation or removal of a Hazardous Environmental Condition.

“Remedial Plan” is defined in Section 58.4(a) (Remedial Plan for Developer Default).

“Renewal Work” means maintenance, repair, reconstruction, rehabilitation, restoration, renewal or replacement of any worn-out, obsolete, deficient, damaged or under-performing element that is not Preventive Maintenance so that such element does not prematurely deteriorate and remains fully functional.

“Request for Proposals” or **“RFP”** means the Request for Proposals for the I-95, U.S. 70 & U.S. 74 Broadband Infrastructure Project (TIP R-5777D, I-5986C, HO-0002A, B & C) dated as of [●] [●], 2021.

“Required Action” is defined in Section 62.3(a)(i) (Required Action by the Department).

“Required Rights” means any approval, right, license, permit, franchise, authorization, certification, consent, easement, right-of-way, right of use, leases, fee interest, and other agreements from any Person (other than any Governmental Entity) that is necessary for the Developer to use the Developer Infrastructure, connect to the Developer Infrastructure, or use and operate the Developer Infrastructure, in each case as contemplated by Section 8 (Grant of Rights).

“Restricted Change in Ownership” is defined in Section 67.1(b) (Restricted Change in Ownership).

“Revenues from Commercial Activities” means the gross revenues resulting from the Developer's Commercial Activities and recognized when cash is received from Commercial End-Users, with the exception of any one-time, non-recurring payment associated with a multi-year Commercial Agreement, wherein the Developer may elect to recognize such one-time, non-recurring revenue over the initial term of the associated Commercial Agreement in even installments.

“Safety Standards” means those provisions of the Technical Requirements that are measures to protect public safety or worker safety. Provisions of the Technical Requirements primarily directed at durability of materials or equipment, where the durability is primarily a matter of life cycle cost rather than protecting public or worker safety, are not Safety Standards.

“Section 311” is defined in clause (g) of the definition of “Prohibited Person.”

“**Section 721**” is defined in clause (l) of the definition of “Prohibited Person.”

“**Service Line**” means (a) a Utility line, the function of which is to directly connect the improvements on an individual property to another Utility line located off such property, which other Utility line connects more than one such individual line to a larger system or (b) any cable or conduit that supplies an active feed from a Utility Owner’s facilities to activate or energize the Department’s or a local agency’s lighting and electrical systems, traffic control systems, communications systems or irrigation systems.

“**Signed and Sealed**” means the signature and seal of a licensed professional engineer on a document indicating that the licensee takes professional responsibility for the work and, to the best of the licensee’s knowledge and belief, the work represented in the document is accurate, in conformance with applicable codes at the time of submission and has been prepared in conformity with normal and customary standards of practice and with a view to the safeguarding of life, health, property and public welfare. The licensed professional engineer certifies that the documents have been signed and sealed in accordance with laws, rules and regulations of the State.

“**Special Covenant**” means any covenant set forth in Section 8(b)(i) (*Grant of Rights*) or Section 9(a) (*Certain Covenants and Confirmation*).

“**State**” means the State of North Carolina.

“**Subcontractor Breakage Costs**” means Losses that have been or will be reasonably and properly incurred by the Developer under a Key Contract as a direct result of the termination of the Comprehensive Agreement (and which will not include lost profit or lost opportunity), but only to the extent that:

- (a) the Losses are incurred in connection with the Project and with respect to the Work required to be provided or carried out, including:
 - (i) any materials or goods ordered or subcontracts placed that cannot be cancelled without such Losses being incurred;
 - (ii) any expenditures incurred in anticipation of the provision of services or the completion of Work in the future; and
 - (iii) the cost of demobilization, including the cost of any relocation of equipment used in connection with the Project;
- (b) the Losses are incurred under arrangements or agreements that are consistent with terms that have been entered into in the ordinary course of business and on an arm’s length basis; and
- (c) the Developer and the relevant Key Contractor have each used their Reasonable Efforts to mitigate such Losses.

“**Supplier**” means any Person not performing work at or on a Project Site which supplies machinery, equipment, materials, hardware, software, systems or any other appurtenance to the Project to the Developer or to any Contractor in connection with the performance of the Work. Persons who merely transport, pick up, deliver or carry materials, personnel, parts or equipment or any other items or Persons to or from a Project Site will not be deemed to be performing Work at such Project Site.

“**Technical Requirements**” means the Technical Requirements set out in Section 19 (General Obligations).

“**Telecommunications Act**” means the Telecommunications Act of 1996 (Pub. LA. No. 104-104, 110 Stat. 56 (1996)), as amended (and any regulation or order of the FCC with respect thereto).

“**Telecommunications Carrier**” has the meaning set forth in the Telecommunications Act.

“**Telecommunications Service**” has the meaning set forth in the Telecommunications Act.

“**Term**” is defined in Section 2(a) (Term).

“**Termination by Court Ruling for Illegality**” is defined in Section 61.1(a) (Termination by Court Ruling or for Materially Adverse FCC Order).

“**Termination by Court Ruling for Impossibility**” is defined in Section 61.1(b) (Termination by Court Ruling or for Materially Adverse FCC Order).

“**Termination Date**” means:

- (a) the Expiry Date; or
- (b) if applicable, the Early Termination Date.

“**Termination Notice**” means any termination notice delivered under the terms of the Comprehensive Agreement.

“**Termination Sum**” means any of (i) the Developer Default (D&C Period) Termination Sum, (ii) the Developer Default (Operating Period) Termination Sum, (iii) the No Fault Termination Sum, and (iv) the Department Termination Sum.

“**Terrorism**” means activities against Persons or property of any nature:

- (a) that involve the following or preparation for the following:
 - (i) use or threat of force or violence; or
 - (ii) Department or threat of an act that interferes with or disrupts an electronic, communication, information or mechanical system; and
- (b) when one or both of the following applies:
 - (i) it appears that the intent is to intimidate or coerce the Department, a Governmental Entity or the civilian population or any segment of the civilian population, or to disrupt any segment of the economy;
 - (ii) it appears that the intent is to intimidate or coerce the Department or a Governmental Entity, or to further political, ideological, religious, social or economic objectives or to express (or express opposition to) a philosophy or ideology; and
- (c) that are criminally defined as terrorism for purposes of State or federal Applicable Law.

“Third Party Claims” means any and all claims, disputes, disagreements, causes of action, demands, suits, actions, investigations or administrative proceedings brought by a Person that is not an Indemnified Party or the Developer with respect to damages, injuries, liabilities, obligations, losses, costs, penalties, fines or expenses (including attorneys’ fees and expenses) sustained or incurred by such Person.

“UAS” is defined in Section 23 (Unmanned Aircraft Systems).

“Undisclosed Archaeological Remains” means any Archaeological Remains that, as of the Closing Date, were neither:

- (a) known to the Developer; nor
- (b) reasonably capable of being identified by an appropriately qualified and experienced contractor or engineer exercising due care and skill and Good Industry Practice, including through review and analysis of the Disclosed Information, any publicly available and/or reasonably discoverable information and any access to the Project Site granted prior to the Closing Date.

“Undisclosed Endangered Species” means any Endangered Species discovered at the Project Site, the temporary, continual or habitual presence of which, as of the Closing Date, was neither:

- (a) known to the Developer; nor
- (b) reasonably expected to be found temporarily, continually or habitually at the Project Site based on review and analysis of the Disclosed Information, any publicly available and/or reasonably discoverable information and any access to the Project Site granted prior to the Closing Date.

“Undisclosed Hazardous Environmental Condition” means any Hazardous Environmental Condition that existed on any part of the Project Site prior to the date on which the Department provided Access to such part of the Project Site to the Developer, excluding any Hazardous Environmental Condition:

- (a) that is a Disclosed Hazardous Environmental Condition; or
- (b) that could reasonably have been identified or discovered prior to the Closing Date by an appropriately qualified and experienced contractor or engineer exercising due care and skill and Good Industry Practice based on the Disclosed Information, any publicly available and/or reasonably discoverable information and any access to the Project Site granted prior to the Closing Date,

provided, that the quantity or concentration of any Disclosed Hazardous Environmental Condition that is not disclosed by the Department shall not constitute an Undisclosed Hazardous Environmental Condition.

“Uninsurable Risk” means a risk for which:

- (a) insurance is not available to the Developer with respect to the Project in the worldwide insurance or reinsurance markets on the terms required in the Comprehensive Agreement with reputable insurers of good standing; or
- (b) the insurance premium payable for insuring that risk on the terms required in the Comprehensive Agreement is at such level that the risk is not generally being insured

against in the worldwide insurance or reinsurance markets with reputable insurers of good standing by contractors in relation to comparable infrastructure projects in North America.

“U.S. 74 Network” means the fiber optic network along the U.S. 74 corridor, as further described in Part B-1.4 of the RFP.

“Utility” means a privately, publicly, or cooperatively owned line, facility, or system for transmitting or distributing communications, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, a combined stormwater and sanitary system, or other similar commodities, including wireless telecommunications, television transmission signals and publicly owned fire and police signal systems, which directly or indirectly serve the public. The necessary appurtenances to each Utility facility will be considered part of such Utility. Without limitation, any Service Line connecting directly to a Utility will be considered an appurtenance to that Utility, regardless of the ownership of such Service Line.

“Utility Adjustment” means each relocation (temporary or permanent), abandonment, Protection in Place, removal (of previously abandoned Utilities as well as of newly abandoned Utilities), replacement, reinstallation, or modification of existing Utilities necessary to accommodate construction, conversion, operation, maintenance or use of the Project or the Work; *provided* that the term “Utility Adjustment” shall not refer to any of the work associated with facilities owned by a Railroad.

“Work” means the D&C Work and the O&M Work, and all other work, services and obligations (including the performance of the Commercial Activities), required to be furnished, performed and provided by the Developer under the Project Documents.

“Work Product” has the meaning set forth in Section 64 (*Intellectual Property*).

EXHIBIT 2¹⁴

FORM OF LENDERS DIRECT AGREEMENT

North Carolina Department of Transportation

and

[●]

as Developer

and

[●]

as Collateral Agent

¹⁴ **Note to Proposers:** Form of Lenders' Direct Agreement provided for Proposers considering a non-recourse project financing transaction structure.

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THIS LENDERS DIRECT AGREEMENT (this “Agreement”) is made on [●], 20[●]: BETWEEN:

- (1) The **NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**, a public agency of the State of North Carolina (the “Department”);
- (2) [●], a [●] (the “Developer”); and
- (3) [●], as collateral agent for the Lenders (the “Collateral Agent”).

RECITALS:

- (A) The Department and the Developer have entered into the Comprehensive Agreement for the I-95, U.S. 70 & U.S. 74 Broadband Infrastructure Project, dated [●], as may be amended from time to time (the “Comprehensive Agreement”), in connection with (i) the design, construction, financing, operation and maintenance of a fiber optic broadband network to be installed within the Department’s right-of-way and (b) the utilization of such network for the generation of revenue from non-Department entities for the benefit the Department and the Developer (collectively, the “Project”) as more fully described in the Comprehensive Agreement.
- (B) The Collateral Agent is the collateral agent for the various providers (the “Lenders”) of senior debt (the “Senior Debt”) to the Developer pursuant to the Finance Documents, the proceeds of which will be provided to the Developer and used by the Developer to perform, in part, its obligations under the Comprehensive Agreement.
- (C) Pursuant to the Finance Documents, the provision by the Lenders of the Senior Debt to the Developer is conditioned upon the Department providing the Lenders with certain assurances (as set out in this Agreement).
- (D) This Agreement is, for the purposes of the Comprehensive Agreement, the Lenders Direct Agreement referred to in the Comprehensive Agreement.

THE PARTIES AGREE as follows:

1. INTERPRETATION, COMPREHENSIVE AGREEMENT AND ORDER OF PRECEDENCE

1.1 Definitions

Capitalized terms used but not otherwise defined in this Agreement will have the respective meanings set out in Exhibit 1 (*Definitions*) to the Comprehensive Agreement. In addition, the following terms have the meanings specified below:

“Bankruptcy-Related Default” means a Developer Default that arises pursuant to Section 58.1(e) (*Insolvency of Developer*) or Sections 58.1(f) (*Insolvency of Lead Contractor, Lead Contractor Member or Lead Contractor Guarantor*) and (g) (*Insolvency of O&M Contractor or O&M Contractor Member*) of the Comprehensive Agreement;

“Collateral Agent Notice” is defined in Section 3.2(a) (Finance Document Defaults);

“Department Notice” is defined in Section 3.1(a) (Developer Default);

“Cure Period” means the period commencing on the date that the Collateral Agent receives a Department Notice pursuant to Section 3.1(a) (Developer Default) and ending on the earliest of:

- (a) the relevant Cure Period Completion Date;
- (b) any Step-out Date;
- (c) the Substitution Effective Date; or
- (d) the last day of the Term;

“Cure Period Completion Date” means, subject to Section 9.2 (Extension of Cure Period Completion Date):

- (a) with respect to any Payment Default, the date falling thirty (30) days after the later of (i) the date that the Collateral Agent receives the relevant Department Notice and (ii) expiration of any applicable cure period granted to the Developer pursuant to Section 58.3 (*Notice and Cure Periods*) of the Comprehensive Agreement;
- (b) with respect to any Bankruptcy-Related Default, the date falling ninety (90) days after the later of (i) the date that the Collateral Agent receives the relevant Department Notice and (ii) expiration of any applicable cure period granted to the Developer pursuant to Section 58.3 (*Notice and Cure Periods*) of the Comprehensive Agreement;
- (c) with respect to any Non-Completion Default, the date falling ninety (90) days after the date that the Collateral Agent receives the relevant Department Notice; provided, that such period will be extended by such reasonable period of time as may be required to achieve Project Substantial Completion (subject to a maximum extension of two hundred seventy-five (275) days), but only to the extent that:
 - (i) there is a reasonable prospect of achieving Project Substantial Completion within three hundred sixty-five (365) days of the relevant Department Notice; and
 - (ii) within the ninety (90) day period, the Collateral Agent and the Department (each acting reasonably) agree to a plan in relation to achieving Project Substantial Completion; and
- (d) with respect to any Developer Default not referred to in clauses (a) through (c), the date falling ninety (90) days after the later of (1) the date that the Collateral Agent receives the relevant Department Notice and (2) expiration of any applicable cure period granted to the Developer pursuant to Section 58.3 (*Notice and Cure Periods*) of the Comprehensive Agreement; provided, that such period will, at the request of the Collateral Agent, be extended up to a maximum of sixty (60) additional days, but only to the extent that:
 - (i) within the ninety (90) day period provided for in this clause (d), the Collateral Agent and the Department (each acting reasonably) agree to a plan specifying the remedial action to be taken with respect to the relevant Developer Default; and
 - (ii) the extension requested by the Collateral Agent represents (in the reasonable opinion of the Department) a reasonable period of time to remedy the relevant Developer Default;

“Designated Account” means [●];

“Discharge Date” means the date on which all of the obligations of the Developer under the Finance Documents have been irrevocably discharged in full to the satisfaction of the Collateral Agent;

“Event of Default” has the meaning given to such term in the Finance Documents;

“Initial Equity Members” means the Equity Members as of the date of this Agreement;

“Initial Period” means:

- (a) with respect to any Payment Default, the later of:
 - (i) the date falling thirty (30) days after the date that the Collateral Agent receives the relevant Department Notice; and
 - (ii) expiration of any applicable cure period granted to the Developer pursuant to Section 58.3 (*Notice and Cure Periods*) of the Comprehensive Agreement; and
- (b) with respect to any other Developer Default not referred to in clause (a), the later of:
 - (i) the date falling ninety (90) days after the date that the Collateral Agent receives the relevant Department Notice; and
 - (ii) expiration of any applicable cure period granted to the Developer pursuant to Section 58.3 (*Notice and Cure Periods*) of the Comprehensive Agreement,

in each case, as may be extended pursuant to Section 9.2 (*Extension of Cure Period Completion Date*);

“Lenders D&C Direct Agreements” means:

- (a) the agreement entered into on or about the date of this Agreement between the Lead Contractor, the Collateral Agent and the Developer in connection with the D&C Contract; and
- (b) each parent company guarantee direct agreement to be entered into on or about the date of this Agreement between the Lead Contractor Guarantors, the Collateral Agent and the Developer;]¹⁵

“Non-Completion Default” means a Developer Default that arises pursuant to Section 58.1(b) (*Long Stop Deadline*) of the Comprehensive Agreement;

“Payment Default” means a Developer Default that arises pursuant to Section 58.1(j) (*Non-Payment*) of the Comprehensive Agreement;

“Property” means any right or interest in or to property of any kind whatsoever, whether real, personal or mixed, and whether tangible or intangible;

¹⁵ **Note to Proposers:** To be conformed to structure of Lenders D&C Direct Agreements.

“Qualified Substitute Developer” means a Person who:

- (a) has the legal capacity, power and authority to become a party to, and perform the obligations of the Developer under, the Comprehensive Agreement;
- (b) has the resources available to it (including committed financial resources) to perform the obligations of the Developer under the Comprehensive Agreement;
- (c) employs or subcontracts with Persons having the appropriate qualifications, experience and technical competence available to them that are sufficient to enable them to perform the obligations of the Developer under the Comprehensive Agreement; and
- (d) is not a Prohibited Person;

“Step-in Date” is defined in Section 5.1(c) (Step-in Notice);

“Step-in Entity” is defined in Section 5.1(b) (Step-in Notice);

“Step-in Entity Accession Agreement” means the Comprehensive Agreement to be entered into by a Step-in Entity pursuant to Section 5.1(c) (Step-in Notice);

“Step-in Notice” is defined in Section 5.1(a) (Step-in Notice);

“Step-in Period” in relation to a Step-in Entity, means the period from and including the Step-in Date until the earliest of:

- (a) the last day of the Cure Period;
- (b) the Substitution Effective Date;
- (c) the Step-out Date;
- (d) the date of termination of the Comprehensive Agreement by the Department in accordance with this Agreement and the Comprehensive Agreement; and
- (e) the last day of the term;

“Step-out Date” is defined in Section 5.3(a) (Step-out);

“Step-out Notice” is defined in Section 5.3(a) (Step-out);

“Substitute” is defined in Section 6.1 (Notice of Proposed Substitute);

“Substitute Accession Agreement” means the agreement to be entered into by a Substitute pursuant to Section 7.1 (Substitution Effective Date);

“Substitution Effective Date” is defined in Section 7.1 (Substitution Effective Date); and

“Substitution Notice” is defined in Section 6.1 (Notice of Proposed Substitute).

1.2 **Interpretation**

The rules of interpretation set out in Sections [●] through [●] (*Interpretation*) of the Comprehensive Agreement shall apply to this Agreement.

1.3 **Order of Precedence**

If there is any conflict, ambiguity or inconsistency between the provisions of the Comprehensive Agreement and the provisions of this Agreement, the provisions of this Agreement will prevail.

1.4 **No Effect on Comprehensive Agreement**

Nothing in this Agreement amends or modifies any of the Developer's obligations to the Department under the Comprehensive Agreement.

2. **CONSENT TO SECURITY AND DEPARTMENT PAYMENTS**

2.1 **Consent to Security**

Despite anything to the contrary in the Comprehensive Agreement:

- (a) the Department acknowledges and consents to:
 - (i) the security interest granted by the Developer to the Collateral Agent with respect to the Developer's Interest pursuant to the Finance Documents;
 - (ii) the security interest granted by each of the Initial Equity Members to the Collateral Agent in its respective equity interest(s) in the Developer, in each case pursuant to the Finance Documents; and
 - (iii) the grant of security interests set out in the Security Documents;
- (b) none of the security interests referred to in Section 2.1(a) (*Consent to Security*):
 - (i) constitutes (or with the giving of notice or lapse of time, or both, could constitute) either a breach of the Comprehensive Agreement or a Developer Default; or
 - (ii) requires any consent of the Department that is either additional or supplemental to those granted pursuant to this Section 2.1 (*Consent to Security*);
- (c) the Collateral Agent will not, by virtue of the security interests referred to in Section 2.1(a) (*Consent to Security*), acquire any greater rights to the Developer's Interest than the Developer itself has at any particular time pursuant to the Comprehensive Agreement; and
- (d) for so long as any amount under the Finance Documents is outstanding, the Department shall not, without the prior written consent of the Collateral Agent (to the extent such consent is required under the Finance Documents), consent to any assignment, transfer, pledge or hypothecation of the Comprehensive Agreement or any interest in the Comprehensive Agreement by the Developer, other than as specified in this Agreement.

2.2 Department Payments under the Comprehensive Agreement

The Department shall, unless directed otherwise by the Collateral Agent, deposit all amounts payable by it under the Comprehensive Agreement into the Designated Account and the Developer agrees that any such payment made in accordance with this Section 2.2 (Department Payments under the Comprehensive Agreement) will constitute a complete discharge of the Department's applicable payment obligations for such payment under the Comprehensive Agreement.

3. NOTICES

3.1 Developer Default

- (a) The Department shall give the Collateral Agent written notice promptly upon becoming aware of the occurrence of a Developer Default (a "Department Notice"), which must specify:
 - (i) the unperformed obligations of the Developer under the Comprehensive Agreement of which the Department is aware (having made reasonable inquiry) and the grounds for termination of the Comprehensive Agreement in sufficient detail to enable the Collateral Agent to assess the nature of the Developer Default, the requirement to remedy the Developer Default and the scope and amount of any liability of the Developer resulting from such Developer Default;
 - (ii) all amounts due and payable by the Developer to the Department under the Comprehensive Agreement, if any, on or before the date of the Department Notice and that remain unpaid at such date and, by cross-reference to the applicable provision(s) of the Comprehensive Agreement, the nature of the Developer's obligation to pay such amounts; and
 - (iii) the amount of any payments that the Department reasonably foresees will become due from the Developer during the applicable Cure Period.
- (b) The Department shall from time to time update any Department Notice issued pursuant to Section 3.1(a) (Developer Default) as and when it becomes aware of any unperformed obligations (including non-payment of amounts that are due) under the Comprehensive Agreement that were not specified in the relevant Department Notice.
- (c) Nothing in this Agreement will prevent the concurrent running of multiple Department Notices.
- (d) In addition to the Department's obligation to provide a Department Notice in accordance with Section 3.1(a), the Department shall provide the Collateral Agent with a copy of any notice delivered to the Developer pursuant to Sections 46.2 or 46.3 of the Comprehensive Agreement.

3.2 Finance Document Defaults

The Collateral Agent shall:

- (a) promptly (and in any event within five (5) Business Days) after becoming aware of any Event of Default (whether or not a Department Notice has been served in connection with the same event) give the Department written notice (a “Collateral Agent Notice”);
- (b) specify in any Collateral Agent Notice the circumstances and nature of the Event of Default to which the Collateral Agent Notice relates; and
- (c) notify the Department of any decision to accelerate amounts outstanding under the Finance Documents or to exercise any enforcement remedies under the Finance Documents promptly (and in any event within five (5) Business Days) after the taking of such decision.

3.3 Updates to Notices

The Collateral Agent shall update any Collateral Agent Notice issued pursuant to Section 3.2 (Finance Document Defaults) as and when it becomes aware of any matter described in clauses (a) through (c) of Section 3.2 (Finance Document Defaults) that was not specified in the relevant Collateral Agent Notice.

4. RIGHTS AND OBLIGATIONS DURING THE CURE PERIOD

4.1 No Termination during the Cure Period

At any time during a Cure Period, the Department shall not, subject to the terms of this Agreement:

- (a) terminate or give notice terminating the Comprehensive Agreement for Developer Default; or
- (b) take, join in or support, whether directly or indirectly, any action for the liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding-up of the Developer or for the composition or readjustment of the Developer’s debts, or any similar insolvency procedure in relation to the Developer, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator or similar official for the Developer or for any part of the Developer’s Property, provided, that if and after any of the foregoing have been commenced with respect to the Developer by a Person other than the Department, this clause (b) will not otherwise restrict or impair the ability of the Department to participate in any way in such liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding-up of the Developer or for the composition or readjustment of the Developer’s debts, or any similar insolvency procedure in relation to the Developer, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator or similar official for the Developer or for any part of the Developer’s Property.

4.2 Collateral Agent Rights

- (a) At any time during an Event of Default (but, in the case of a Developer Default, only for so long as the Initial Period has not expired), without giving a Step-in Notice, the Collateral Agent may (but shall have no obligation), in its sole discretion, perform or arrange for the

performance of any act, duty or obligation required of the Developer under the Comprehensive Agreement, or remedy any breach of the Developer under the Comprehensive Agreement at any time, which performance or remedy by or on behalf of the Collateral Agent shall be accepted by the Department in lieu of performance by the Developer and in satisfaction of the Developer's corresponding obligations under the Comprehensive Agreement. If any breach of the Developer under the Comprehensive Agreement is remedied or any payment liabilities or obligations of the Developer are performed by the Collateral Agent under this Section 4.2(a) (Collateral Agent Rights), such action will discharge the relevant liabilities or obligations of the Developer to the Department. No such performance by or on behalf of the Collateral Agent under this Section 4.2(a) (Collateral Agent Rights) will be construed as an assumption by the Collateral Agent, or any person acting on the Collateral Agent's behalf, of any of the covenants, agreements or other obligations of the Developer under the Comprehensive Agreement.

- (b) At any time during a Cure Period or an Event of Default, the Collateral Agent may:
 - (i) issue a Step-in Notice in accordance with the requirements of Section 5.1 (Step-in Notice); or
 - (ii) issue a Substitution Notice in accordance with the requirements of Section 6.1 (Notice of Proposed Substitute).

5. **STEP-IN ARRANGEMENTS**

5.1 **Step-in Notice**

- (a) Provided that all unperformed payment obligations of the Developer identified in a Department Notice have been remedied in full or waived by the Department on or before the Step-in Date, the Collateral Agent may provide the Department with a written notice ("Step-in Notice") under this Section 5.1 (Step-in Notice) at any time during any Cure Period or Event of Default.
- (b) The Collateral Agent shall nominate, in any Step-in Notice, any one of:
 - (i) the Collateral Agent, a Lender or any of their respective Affiliates that is not a Prohibited Person; or
 - (ii) any Person approved by the Department in its reasonable discretion, such approval not to be unreasonably withheld, conditioned or delayed if such Person meets all the criteria to be a Qualified Substitute Developer and the Department has been provided with the relevant information required under Section 6.3 (Provision of Information) with respect to such Person (if the Department has failed to respond to the Collateral Agent within sixty (60) days of the date on which the Department has received the information specified in Section 6.3 (Provision of Information) with respect to any such nominated Person, the approval of the Department will be deemed to have been given),

(each a "Step-in Entity"), stating that the Step-in Entity is to become a joint and several obligor with the Developer under the Comprehensive Agreement and this Agreement in accordance with the terms of this Agreement.

- (c) The Step-in Entity named in the Step-in Notice will be deemed to become a party to the Comprehensive Agreement and this Agreement on and from the date it executes a duly completed Step-in Entity Accession Agreement, substantially in the form attached to this Agreement as Schedule 1 (Form of Step-in Entity Accession Agreement), and submits it to the Department (the “Step-in Date”).

5.2 Rights and Obligations on Step-in

- (a) On and from the Step-in Date and during the Step-in Period, the Step-in Entity shall be:
 - (i) jointly and severally entitled to exercise and enjoy the rights and powers expressed to be assumed by or granted to the Developer under the Comprehensive Agreement and this Agreement;
 - (ii) entitled to exercise and enjoy the rights and powers expressed to be assumed by or granted to a Step-in Entity under this Agreement; and
 - (iii) jointly and severally liable with the Developer for the payment of all sums due from the Developer under or arising out of the Comprehensive Agreement at the Step-in Date and for the performance of all of the Developer’s obligations under or arising out of the Comprehensive Agreement on or after the Step-in Date.
- (b) Without prejudice to Section 8 (Reinstatement of Remedies), during the Step-in Period:
 - (i) the Department agrees:
 - (A) not to terminate or give notice terminating the Comprehensive Agreement for Developer Default, unless:
 - (aa) the grounds for termination or giving notice of termination arose during the Step-in Period; or
 - (bb) the Step-in Entity fails to comply with the requirements of any plan agreed between the Department and the Collateral Agent in connection with the extension of the relevant Cure Period Completion Date; and
 - (B) not to take, join in or support, whether directly or indirectly, any action for the liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding-up of the Developer or for the composition or readjustment of the Developer’s debts, or any similar insolvency procedure in relation to the Developer, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator or similar official for the Developer or for any part of the Developer’s Property; provided, that if and after any of the foregoing have been commenced with respect to the Developer by a Person other than the Department, this clause (B) will not otherwise restrict or impair the ability of the Department to participate in any way in such liquidation, bankruptcy, administration, receivership, reorganization, dissolution or winding-up of the Developer or for the composition or readjustment of the Developer’s debts, or any similar insolvency procedure in relation to the

Developer, or for the appointment of a receiver, trustee, custodian, sequestrator, conservator, liquidator, administrator or similar official for the Developer or for any part of the Developer's Property;

- (C) not to suspend its performance (including in connection with any insolvency or bankruptcy proceeding in relation to the Developer) under the Comprehensive Agreement, unless the grounds for suspension of performance arose during the Step-in Period; and
 - (D) to continue to make payments required to be made to the Developer under the Comprehensive Agreement to the Designated Account or to such other account as notified by the Collateral Agent to the Department;
- (ii) the Department will owe its obligations under the Comprehensive Agreement and this Agreement to the Developer and such Step-in Entity jointly; provided, that:
- (A) subject to clause (B), the performance of such obligations by the Department in favor of either such Step-in Entity or the Developer shall be a good and effective discharge of such obligations under this Agreement and the Comprehensive Agreement; and
 - (B) the Collateral Agent will be entitled at any time by notice in writing to the Department to direct (such direction being binding on the Collateral Agent, the Department and the Developer) that, at all times while such Step-in Entity is deemed to be a party to the Comprehensive Agreement and this Agreement and subject to any further notice from the Collateral Agent, such Step-in Entity will be solely entitled to make any decisions, to give any directions, approvals or consents, to receive any payments or otherwise to deal with the Department under the Comprehensive Agreement and this Agreement.
- (c) The Developer will not be relieved from any of its obligations under the Comprehensive Agreement, whether arising before or after the Step-in Date, by reason of the Step-in Entity becoming a party to the Comprehensive Agreement pursuant to a Step-in Entity Accession Agreement, except to the extent provided in Section 4.2(a) (Collateral Agent Rights) and Section 7.2(a) (Effectiveness of Substitution).

5.3 Step-out

- (a) A Step-in Entity may, at any time, by giving not less than thirty (30) days' prior written notice to the Department ("Step-out Notice"), notify the Department of the date that it wishes to terminate its obligations to the Department under the Comprehensive Agreement and this Agreement (the "Step-out Date").
- (b) On the Step-out Date the Step-in Entity will no longer be deemed to be a party to the Comprehensive Agreement and this Agreement and will be released from all obligations under the Comprehensive Agreement and this Agreement. The obligations of the Department to the Step-in Entity in such capacity under the Comprehensive Agreement and this Agreement will also terminate on the Step-out Date.

- (c) Nothing in this Section 5.3 (Step-out) will have the effect of releasing the Step-in Entity from any liability that relates to the performance or non-performance of the Comprehensive Agreement or this Agreement by the Developer or the Step-in Entity during the Step-in Period.

6. SUBSTITUTION PROPOSALS

6.1 Notice of Proposed Substitute

If the Collateral Agent or the Lenders at any time propose to require the Developer to assign its rights and obligations under the Comprehensive Agreement or this Agreement to a Person (a “Substitute”) designated by the Collateral Agent or the Lenders (whether by mutual agreement or enforcement of rights under the Finance Documents), the effectiveness of such assignment will be conditional upon:

- (a) the Collateral Agent issuing a notice (a “Substitution Notice”) to the Department requesting the prior approval of the proposed Substitute;
- (b) the Department approving the identity of the proposed Substitute pursuant to Section 6.2 (Grounds for Refusing Approval) or Section 6.4 (Deemed Approval); and
- (c) the proposed Substitute executing a Substitute Accession Agreement in accordance with Section 7.1 (Substitution Effective Date).

6.2 Grounds for Refusing Approval

The Department will only be entitled to withhold its approval to any proposed Substitute that is the subject of a Substitution Notice if:

- (a) the proposed Substitute is not a Qualified Substitute Developer; or
- (b) subject to Section 7.4 (Settlement of Outstanding Obligations), there are outstanding breaches of the Comprehensive Agreement that have been previously notified by the Department to the Collateral Agent and have not, to the reasonable satisfaction of the Department, been remedied or waived prior to the date of the Substitution Notice; unless the Department has approved (such approval not to be unreasonably withheld, conditioned or delayed) a plan specifying the remedial action that the Substitute will be required to take after the Substitution Effective Date in order to remedy each such breach.

6.3 Provision of Information

The Collateral Agent shall promptly provide to the Department such information in relation to (1) the proposed Substitute and (2) any Person who, it is proposed, will enter into a material subcontract with the proposed Substitute in relation to the Project, as the Department shall reasonably require to enable it to reasonably determine whether the proposed Substitute is a Qualified Substitute Developer, including:

- (a) the name and address of the proposed Substitute;

- (b) unless such proposed Substitute is a publicly traded entity, the names of the proposed Substitute's shareholders or members, and the share capital or partnership or membership interests, as the case may be, held by each of them;
- (c) the manner in which it is proposed to finance the proposed Substitute and the extent to which such financing is committed (to the extent relevant);
- (d) copies of the proposed Substitute's most recent financial statements (if available, for the last three (3) financial years and audited) or, in the case of a special purpose company, its opening balance sheet;
- (e) a copy of the proposed Substitute's organizational documents;
- (f) details of the resources available to the proposed Substitute and the proposed Substitute's appropriate qualifications, experience and technical competence available to the proposed Substitute which enable it to perform the obligations of the Developer under the Comprehensive Agreement; and
- (g) the names of the proposed Substitute's directors and any key personnel who will have responsibility for the day-to-day management of its participation in the Project.

6.4 **Deemed Approval**

If the Department has failed to respond to the Collateral Agent within sixty (60) days of the date on which the Department has confirmed it has received the information specified in Section 6.3 (*Provision of Information*) with respect to any proposed Substitute, the approval of the Department will be deemed to have been given.

7. **SUBSTITUTION**

7.1 **Substitution Effective Date**

If the Department approves (or is deemed to have approved) the identity of a proposed Substitute pursuant to Section 6 (*Substitution Proposals*), the Substitute shall execute a duly completed Substitute Accession Agreement substantially in the form set out in Schedule 2 (*Form of Substitute Accession Agreement*) and submit it to the Department (with a copy of it to the other parties to this Agreement). Such assignment will become effective on and from (a) the date on which the Department countersigns the Substitute Accession Agreement or (b) the date that is seven (7) Business Days after the date the Department receives the completed Substitute Accession Agreement if the Department fails to countersign the Substitute Accession Agreement (the "Substitution Effective Date").

7.2 **Effectiveness of Substitution**

On and from the Substitution Effective Date:

- (a) the Substitute will become a party to the Comprehensive Agreement and this Agreement in place of the Developer who will be immediately released from its obligations arising under, and cease to be a party to, the Comprehensive Agreement and this Agreement from that Substitution Effective Date; and

- (b) the Substitute will exercise and enjoy the rights and perform the obligations of the Developer under the Comprehensive Agreement and this Agreement, including any and all undischarged obligations of the Developer that were otherwise required to be performed by the Developer prior to the Substitution Effective Date; and
- (c) the Department will owe its obligations (including any undischarged liability with respect to any loss or damage suffered or incurred by the Developer prior to the Substitution Effective Date) under the Comprehensive Agreement and this Agreement to the Substitute in place of the Developer and any Step-in Entity.

7.3 **Facilitation of Transfer**

The Department shall use its reasonable efforts to facilitate the transfer to the Substitute of the Developer's obligations under the Comprehensive Agreement and this Agreement.

7.4 **Settlement of Outstanding Obligations**

- (a) The Substitute shall pay to the Department within thirty (30) days after the Substitution Effective Date any amount due from the Developer to the Department under the Comprehensive Agreement and this Agreement as of the Substitution Effective Date (as notified by the Department to the Substitute reasonably in advance of such Substitution Effective Date).
- (b) If the Substitute fails to satisfy its obligations pursuant to Section 7.4(a) (Settlement of Outstanding Obligation), the Department will be entitled to exercise its rights under the Comprehensive Agreement with respect to the amount so due and unpaid.

7.5 **Consequences of Substitution**

On and from the Substitution Effective Date:

- (a) subject to Section 7.4 (Settlement of Outstanding Obligations), any right of termination or any other right suspended by virtue of Section 4.1 (No Termination During the Cure Period) will be of no further effect and the Department shall not be entitled to terminate the Comprehensive Agreement and this Agreement by virtue of any act, omission or circumstance that occurred prior to such Substitution Effective Date;
- (b) if any Step-in Entity is a party to or has any obligations under the Comprehensive Agreement and this Agreement on the Substitution Effective Date, such Step-in Entity will cease to be a party to the Comprehensive Agreement and to this Agreement and will be discharged from all obligations under the Comprehensive Agreement and under this Agreement; and
- (c) the Department shall enter into an equivalent direct agreement on substantially the same terms as this Agreement, except that the Developer will be replaced as a party by the Substitute.

8. REINSTATEMENT OF REMEDIES

If a Department Notice has been given, the grounds for that notice are continuing and have not been remedied or waived by the Department and:

- (a) no Step-in Entity or Substitute becomes a party to the Comprehensive Agreement and this Agreement before the Cure Period Completion Date relating to the applicable Developer Default; or
- (b) a Step-in Entity becomes a party to the Comprehensive Agreement and this Agreement, but the Step-in Period relating to such Step-in Entity ends without a Substitute becoming a party to the Comprehensive Agreement and this Agreement,

then, on and from the Cure Period Completion Date or the date such Step-in Period expires, the Department shall be entitled to:

- (i) act upon any and all grounds for termination available to it in relation to the Comprehensive Agreement with respect to Developer Defaults under the Comprehensive Agreement that have not been remedied or waived by the Department;
- (ii) pursue any and all claims and exercise any and all remedies against the Developer; and
- (iii) if and to the extent that it is then entitled to do so under the Comprehensive Agreement, take or support any action of the type referred to in Section 4.1(b) (No Termination during the Cure Period).

9. IMPACT OF BANKRUPTCY OR INSOLVENCY PROCEEDINGS

9.1 Rejection of the Comprehensive Agreement

- (a) If:
 - (i) the Comprehensive Agreement is rejected by a trustee or debtor-in-possession in, or terminated as a result of, any bankruptcy or insolvency proceeding involving the Developer; and
 - (ii) within one hundred fifty (150) days after such rejection or termination, the Collateral Agent requests or certifies in writing to the Department that the Collateral Agent or the Collateral Agent's permitted designee or assignee (including a Qualified Substitute Developer) intends to perform the obligations of the Developer as and to the extent required under the Comprehensive Agreement,

the Department will execute and deliver to the Collateral Agent (or any Substitute satisfying the requirements of this Agreement if directed to do so by the Collateral Agent) a new Comprehensive Agreement. The new Comprehensive Agreement must contain term, conditions and limitations which are the same as those of the Comprehensive Agreement, except for any obligations that have been fulfilled by the Developer, any party acting on behalf of or stepping-in for the Developer or the Collateral Agent prior to such

rejection or termination. References in this Agreement to the Comprehensive Agreement will be deemed also to refer to any such new Comprehensive Agreement.

- (b) The effectiveness of any new Comprehensive Agreement referred to in Section 9.1(a) (Rejection of the Comprehensive Agreement) will be conditional upon the Collateral Agent first reimbursing the Department with respect to its costs incurred in connection with the execution and delivery of such new Comprehensive Agreement.

9.2 **Extension of Cure Period Completion Date**

If:

- (a) the Collateral Agent is prohibited by any court order, bankruptcy or insolvency proceedings from remedying the Developer Default that is the subject of a Department Notice; or
- (b) the Collateral Agent pursues with good faith, diligence and continuity lawful processes and steps to obtain the appointment of a court receiver for the Project and possession, custody and control of the Project, but despite such efforts the Collateral Agent is unable to obtain such possession, custody and control of the Project,

each of the relevant Cure Period Completion Date and Initial Period will be extended by a period of time equal to the shorter of (i) the period of such prohibition and (ii) one hundred fifty (150) days.

10. **TERMINATION OF THIS AGREEMENT**

This Agreement will remain in effect until the earliest to occur of:

- (a) the Discharge Date;
- (b) the time at which all of the parties' respective obligations and liabilities under the Comprehensive Agreement and this Agreement have expired or have been satisfied in accordance with the terms of the Comprehensive Agreement and this Agreement; and
- (c) any assignment to a Substitute has occurred under Section 7 (Substitution) and the Department has entered into an equivalent direct agreement on substantially the same terms as this Agreement, except that the Developer has been replaced as a party by the Substitute.

11. **RESERVED**

12. **COMPETING STEP-IN RIGHTS**

12.1 **Subordination of Department Rights**

Notwithstanding any provision in the Lead Contractor Step-In Agreement and Consent to Conditional Assignment to the contrary, the Department agrees that it will not exercise (a) any rights of step-in, novation or other similar rights it may have under the Lead Contractor Step-In Agreement and Consent to Conditional Assignment or (b) any of its rights as a beneficiary under the Performance Security until:

- (a) the Comprehensive Agreement has been terminated (other than pursuant to a transfer to a Substitute pursuant to Section 7 (Substitution)); or

- (b) the expiration of any relevant period under any of the Lenders D&C Direct Agreements in which the Collateral Agent is required or entitled to either exercise or procure the exercise of rights of step-in, novation, transfer or any similar right under such Lenders D&C Direct Agreements; or
- (c) if the Collateral Agent has exercised or procured the exercise of rights of step-in, novation, transfer or any similar right, the date of any step-out or similar event under any of the Lenders D&C Direct Agreements has occurred.

12.2 Expiration of Lender Rights

- (a) The Collateral Agent shall notify the Department:
 - (i) promptly (and in any event within five (5) Business Days) after the date on which the Step-in Entity, the Collateral Agent (or any trustee or administrator acting on behalf of the Lenders) or the Developer has exhausted all of its direct or indirect legal rights and remedies against the Lead Contractor under the Finance Documents or has determined not to exercise (or to cease exercising) or is not entitled to exercise the same; and
 - (ii) of any decision by the Lenders whether or not to exercise any or all of their direct or indirect rights against the Lead Contractor under the Finance Documents or the D&C Contract (if they have not by then given notice under Section 12.2(a)(i) (Expiration of Lender Rights)) by the date six (6) months after the date that the Department pays to the Developer the whole of the termination compensation (if any) that is payable to the Developer following termination of the Comprehensive Agreement.
- (b) Following receipt by the Department of any notice from the Collateral Agent pursuant to Section 12.2(a) (Expiration of Lender Rights), all of the right, title and interest of the Collateral Agent or any other Lender against the Lead Contractor pursuant to the Finance Documents will be subject to and subordinated in all respects to all right, title and interest of the Department pursuant to the Lead Contractor Step-In Agreement and Consent to Conditional Assignment.

13. REPRESENTATIONS AND WARRANTIES

- (a) The undersigned signatory for the Collateral Agent represents and warrants that he or she is an officer of the Collateral Agent and that he or she has full and complete authority to enter into this Agreement on behalf of the Collateral Agent.
- (b) The Collateral Agent represents and warrants that the Collateral Agent has full power and authority to execute and perform its obligations under this Agreement.
- (c) The undersigned signatory for the Developer represents and warrants that he or she is an officer of the Developer and that he or she has full and complete authority to enter into this Agreement on behalf of the Developer.
- (d) The Developer represents and warrants that the Developer has full power and authority to execute and perform its obligations under this Agreement.

- (e) The Department represents and warrants that:
 - (i) the Department has the full power and authority to execute, deliver and perform this Agreement and to carry out the transactions contemplated by this Agreement;
 - (ii) the execution, delivery and performance of this Agreement, and the performance of the transactions contemplated in this Agreement, have been duly and validly authorized by all necessary action of the Department; and
 - (iii) this Agreement has been duly and validly executed and delivered by the Department, and constitutes a valid and binding obligation of the Department, enforceable against the Department in accordance with its terms, subject only to applicable bankruptcy, insolvency and similar laws affecting the enforceability of the rights of creditors generally and the general principles of equity.

- (f) The Department represents and warrants to the Collateral Agent that:
 - (i) there is no Department Default or, to its knowledge, Developer Default, there exists no event or condition that would, with the giving of notice or passage of time or both, constitute such a Department Default or, to its knowledge, a Developer Default, and no Department Default or, to its knowledge, Developer Default has occurred prior to the date of this Agreement; and

 - (ii) each representation and warranty made by it under Section [●] (Department Representations and Warranties) of the Comprehensive Agreement is true and correct as of the date of this Agreement.

14. GOVERNING LAW AND JURISDICTION

14.1 Governing Law

This Agreement will be governed by and construed in accordance with the laws of the State of North Carolina.

14.2 Submission to Jurisdiction

Without prejudice to the Department's right under Applicable Law to initiate a claim in different forum and subject to Article 57 (*Dispute Resolution*) of the Comprehensive Agreement, the parties hereto agree that the exclusive original jurisdiction and venue for any legal action or proceeding, at law or in equity, arising out of this Agreement shall be the United States District Court for the Eastern District of North Carolina.

14.3 Waiver of Jury Trial

THE PARTIES HEREBY KNOWINGLY, IRREVOCABLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHTS THAT ANY MAY HAVE TO A TRIAL BY JURY WITH RESPECT TO ANY ACTION, PROCEEDING, COUNTERCLAIM OR DEFENSE BASED ON THIS AGREEMENT, OR ARISING OUT OF, UNDER OR IN ANY CONNECTION WITH THIS AGREEMENT, OR WITH RESPECT TO ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER ORAL OR WRITTEN) OR ACTIONS OF ANY PARTY HERETO RELATING TO THIS AGREEMENT. THIS PROVISION IS A

MATERIAL INDUCEMENT FOR ALL PARTIES ENTERING INTO THIS AGREEMENT. THIS PROVISION APPLIES ONLY TO SUITS BETWEEN THE PARTIES ARISING OUT OF OR RELATED TO THIS AGREEMENT AND DOES NOT APPLY TO THIRD PARTY CLAIMS OR SUITS BY OR ON BEHALF OF THE PARTIES FOR PROJECT PROPERTY ACQUISITION AND/OR CONSTRUCTION CONTRACT CLAIMS AND DEFENSES. Each of the Parties (a) certifies that no representative, agent, attorney or any other Person has represented, expressly or otherwise, that such other Person would not, in the event of any suit, action or proceedings relating to this Agreement, seek to enforce the foregoing waiver and (b) acknowledges that it has been induced to enter into this Agreement by, among other things, the mutual waivers and certifications in this Section 14.3 (Waiver of Jury Trial).

15. GENERAL PROVISIONS

15.1 Public Information and Confidentiality

- (a) The Department and the Collateral Agent will comply with the requirements of the Comprehensive Agreement with regard to the public disclosure of information as if any reference to the Developer in the Comprehensive Agreement was a reference to the Collateral Agent.
- (b) The Department approves disclosure by the Developer to the Collateral Agent, the Lenders and other agents of the Lenders, of the information, documents, reports, data or records provided to, or prepared by, the Developer under the Comprehensive Agreement, or prepared by any Developer's Contractor under the relevant Contract.

15.2 Amendments and Waivers

- (a) No amendment of this Agreement, and no waiver of any term, covenant or condition of this Agreement, will be effective unless in writing and signed by the parties to this Agreement.
- (b) The exercise by a party of any right or remedy provided under this Agreement or Applicable Law will not waive or preclude any other or further exercise thereof or the exercise of any other right or remedy. No waiver by any party of any right or remedy under this Agreement or Applicable Law will be deemed to be a waiver of any other or subsequent right or remedy under this Agreement or Applicable Law. The consent by one party to any act by the other party requiring such consent will not be deemed to render unnecessary the obtaining of consent to any subsequent act for which consent is required, regardless of whether similar to the act for which consent is given.

15.3 Non-collusion

- (a) The Collateral Agent warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Collateral Agent, to solicit or secure this Agreement, and that it has not paid or agreed to pay any company or person any fee, Department, percentage, brokerage fee, gifts or any other consideration contingent upon or resulting from the making of this Agreement.
- (b) For breach or violation of this warranty, the Department shall have the right to terminate this Agreement without liability.

15.4 **Disputes**

- (a) In the event of any dispute between the Department and the Collateral Agent under this Agreement, the parties shall resolve the dispute according to the dispute resolution procedures set out in the Comprehensive Agreement, with the Collateral Agent having the same rights and obligations as the Developer under the dispute resolution procedures set out in Article 57 (*Dispute Resolution*) of the Comprehensive Agreement.
- (b) Nothing in Section 15.4(a) (*Disputes*) affects the Collateral Agent's rights and remedies against the Developer and the Developer's Interest under the Finance Documents or the procedures available to the Collateral Agent under law to exercise its security interests under the Finance Documents.

15.5 **Successors and Assigns**

- (a) No party to this Agreement may assign or transfer any part of its rights or obligations under this Agreement without the prior written consent of the other parties; provided, that the Collateral Agent may assign or transfer its rights and obligations under this Agreement to a successor Collateral Agent in accordance with the Finance Documents. In connection with any such assignment or transfer, the Department agrees to enter into a new direct agreement with the successor Collateral Agent on terms that are substantially the same as those of this Agreement.
- (b) This Agreement will be binding upon and inure to the benefit of the parties to this Agreement and their respective successors and permitted assigns.

15.6 **Severability**

In the event any one or more of the provisions contained in this Agreement will, for any reason, be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability will not affect any other provision of this Agreement and this Agreement will be construed as if such invalid, illegal, or unenforceable provision had never been contained in this Agreement.

15.7 **Prior Contracts Superseded**

This Agreement constitutes the sole agreement of the parties with respect to the subject matter set out in this Agreement and supersedes any prior understandings or written or oral contracts between the parties respecting such subject matter.

15.8 **Notices and Communications**

- (a) Whenever under the provisions of this Agreement it will be necessary or desirable for one party to serve any approval, notice, request, demand, report or other communication on another party, the same will be in writing and will not be effective for any purpose unless and until actually received by the addressee or unless served (i) personally, (ii) by independent, reputable, overnight commercial courier or (iii) by deposit in the United States mail, postage and fees fully prepaid, registered or certified mail, with return receipt requested, addressed as follows:

If to the Department:

North Carolina Department of Transportation

Address: [●]

Attention: [Name], [Title]

Email: [●]

Telephone: [●]

If to the Developer:

[●]

Address: [●]

Attention: [●]

Email: [●]

Telephone: [●]

If to the Collateral Agent:

[●]

Address: [●]

Attention: [●]

Email: [●]

Telephone: [●]

- (b) Any party may, from time to time, by notice in writing served upon the other parties, designate an additional or a different mailing address or an additional or a different person to whom all such notices, requests, demands, reports and communications are thereafter to be addressed. Any notice, request, demand, report or other communication served personally will be deemed delivered upon receipt, if served by mail or independent courier will be deemed delivered on the date of receipt as shown by the addressee's registry or certification receipt or on the date receipt at the appropriate address is refused, as shown on the records or manifest of the United States Postal Service or independent courier.

15.9 **Effect of Breach**

Without prejudice to any rights a party may otherwise have, a breach of this Agreement will not of itself give rise to a right to terminate the Comprehensive Agreement.

15.10 **Counterparts**

This instrument may be executed in two or more counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument.

15.11 No Third-Party Beneficiaries

Nothing contained in this Agreement is intended or will be construed as creating or conferring any rights, benefits or remedies upon, or creating any obligations of the parties to this Agreement toward, any person or entity not a party to this Agreement.

15.12 No Partnership

Nothing contained in this Agreement will be deemed to constitute a partnership between the parties to this Agreement. None of the parties shall hold itself out contrary to the terms of this Section 15.12 (No Partnership).

15.13 No Interference

The Developer joins in this Agreement to acknowledge and consent to the arrangements set out and agrees not to knowingly do or omit to do anything that may prevent any party from enforcing its rights under this Agreement.

15.14 Collateral Agent Liability

- (a) Notwithstanding anything to the contrary in this Agreement, but subject to Section 5 (Step-in Arrangements) (solely to the extent the Collateral Agent or any of its Affiliates is the Step-in Entity), Section 13 (Representations and Warranties) and Section 15.14(b) (Collateral Agent Liability), the Collateral Agent shall not have any liability to the Department under this Agreement, unless the Collateral Agent expressly assumes such liability in writing.
- (b) The Department acknowledges and agrees that the Collateral Agent shall not be obligated or required to perform any of the Developer's obligations under the Comprehensive Agreement, except during any Step-in Period (solely to the extent the Collateral Agent or any of its Affiliates is the Step-in Entity).

15.15 Reliance by the Department

The Department may rely upon any notice purported to be signed and delivered by or for the Collateral Agent without any obligation to the Collateral Agent, any Lender, the Developer or any third party to ascertain or investigate its authenticity, truth or accuracy.

The parties are signing this Agreement on the date stated in the introductory clause.

[Signature Pages to Follow]

SIGNATORIES

North Carolina Department of Transportation)
)
Signed by [●])
)
)

Developer)
)
Signed by [●])
for and on behalf of [●])

Collateral Agent)
)
Signed by [●])
for and on behalf of [●])

SCHEDULE 1

FORM OF STEP-IN ENTITY ACCESSION AGREEMENT

To: North Carolina Department of Transportation:
[●]

Copied to: [●]
[Lenders and other parties to Finance Documents to be listed] [insert address]

For the attention of: [●]

From: [Step-in Entity]

THE NORTH CAROLINA FIBER OPTIC BROADBAND NETWORK PROJECT STEP-IN ENTITY ACCESSION AGREEMENT

Ladies and Gentlemen:

Reference is made to (i) the Comprehensive Agreement for the I-95, U.S. 70 & U.S. 74 Broadband Infrastructure Project, dated [●] (as amended, supplemented or otherwise modified from time to time, the “Comprehensive Agreement”), between the North Carolina Department of Transportation (the “Department”) and [●] (the “Developer”) and (ii) the Lenders Direct Agreement, dated [●] (as amended, supplemented or otherwise modified from time to time, the “Lenders Direct Agreement”), between the Department, the Developer and [●], as the Collateral Agent.

Terms used but not otherwise defined in this Step-in Entity Accession Agreement will have the meaning given to them in the Lenders Direct Agreement.

We confirm that we are a Step-in Entity pursuant to Section 5 (*Step-in Arrangements*) of the Lenders Direct Agreement.

1. We acknowledge and agree that, upon and by reason of our execution of this Step-in Entity Accession Agreement, we will become a party to the Comprehensive Agreement and the Lenders Direct Agreement jointly and severally with the Developer as a Step-in Entity and, accordingly, will have the rights and powers and assume the obligations of the Developer under the Comprehensive Agreement and the Lenders Direct Agreement in accordance with the terms of the Lenders Direct Agreement.
2. Our mailing address, telephone number and address for electronic mail for the purposes of receiving notices are as follows:

[contact details of Step-in Entity]
3. This Step-in Entity Accession Agreement will be governed by and construed in accordance with the laws of the State of North Carolina. Without prejudice to the Department’s right under Applicable Law to initiate a claim in different forum and subject to Article [●] (*Dispute Resolution*) of the Comprehensive Agreement, we agree that the exclusive original jurisdiction and venue for any legal action or proceeding, at law or in equity, arising out of this Agreement shall be the United States District Court for the Eastern District of North Carolina.

The terms set out in this Step-in Entity Accession Agreement are agreed to: [*Step-in Entity*]

By

Name:

Title:

SCHEDULE 2

FORM OF SUBSTITUTE ACCESSION AGREEMENT

[Date]

To: North Carolina Department of Transportation:

[●]

Copied to: [●]

From: *[Substitute]*

THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION FIBER OPTIC BROADBAND NETWORK PROJECT SUBSTITUTE ACCESSION AGREEMENT

Ladies and Gentlemen:

Reference is made to (i) the Comprehensive Agreement for the I-95, U.S. 70 & U.S. 74 Broadband Infrastructure Project, dated [●] (as amended, supplemented or otherwise modified from time to time, the "Comprehensive Agreement"), between the North Carolina Department of Transportation (the "Department") and [●] (the "Developer") and (ii) the Lenders Direct Agreement, dated [●] (as amended, supplemented or otherwise modified from time to time, the "Lenders Direct Agreement"), between the Department, the Developer and [●], as the Collateral Agent.

Terms used but not otherwise defined in this Substitute Accession Agreement will have the meaning given to them in the Lenders Direct Agreement.

1. We confirm that we are a Substitute pursuant to Section 7 (*Substitution*) of the Lenders Direct Agreement.
2. We acknowledge and agree that, upon and by reason of our execution of this Substitute Accession Agreement, we will become a party to the Comprehensive Agreement and the Lenders Direct Agreement as a Substitute and, accordingly, will have the rights and powers and assume the obligations of the Developer under the Comprehensive Agreement and the Lenders Direct Agreement in accordance with the terms of the Lenders Direct Agreement.
3. Our mailing address, telephone number and address for electronic mail for the purposes of receiving notices are as follows:

[contact details of Substitute]

4. This Substitute Accession Agreement will be governed by and construed in accordance with the laws of the State of North Carolina. Without prejudice to the Department's right under Applicable Law to initiate a claim in different forum and subject to Article [●] (*Dispute Resolution*) of the Comprehensive Agreement, we agree that the exclusive original jurisdiction and venue for any legal action or proceeding, at law or in equity, arising out of this Agreement shall be the United States District Court for the Eastern District of North Carolina.

The terms set out in this Substitute Accession Agreement are hereby agreed to: [*Substitute*]

By:

Name:

Title:

Agreed for and on behalf of:

North Carolina Department of Transportation

By:

Name:

Title:

EXHIBIT 3

CONDITIONS PRECEDENT TO NOTICE TO PROCEED

PART 1 – CONDITIONS PRECEDENT TO NTP1

1. **CLOSING**

The Closing Date has occurred.

2. **INSURANCE**

All insurance policies required to be obtained under the Comprehensive Agreement have been obtained and are in full force and effect, and Developer has delivered to the Department written verification of such insurance coverage.

3. **PROJECT SCHEDULE**

The Project schedule has been approved by the Department.

4. **WRITTEN NOTICE**

Developer has issued a written notice to the Department requesting the issuance of NTP1, along with documentation evidencing the satisfaction of each of the conditions precedent set forth herein (such documentation to be submitted via the Project document management system and to include a table containing links to the relevant approvals necessary for issuance of NTP1).

PART 2 – CONDITIONS PRECEDENT TO NTP2

1. NTP1

NTP1 for the relevant Network Segment has been issued.

2. INSURANCE

All insurance policies required to be obtained under the Comprehensive Agreement remain in full force and effect, and the Developer has delivered to the Department written verification of such insurance coverage.

3. GOVERNMENTAL APPROVALS

All Governmental Approvals necessary to begin the applicable portion of the Construction Work for the applicable portion of the relevant Network Segment have been obtained and the Developer has provided to the Department fully executed copies of such Governmental Approvals.

4. ACCESS TO PROJECT SITE

All property rights necessary to begin the applicable portion of the Construction Work for the relevant Network Segment have been obtained.

5. SUBMITTALS

The Developer has delivered to the Department, and the Department has accepted, approved or marked “Released for Construction,” as applicable, all submittals relating to the applicable portion of the Construction Work for the relevant Network Segment.

6. WRITTEN NOTICE

The Developer has issued a written notice to the Department requesting the issuance of NTP2, along with documentation evidencing the satisfaction of each of the conditions precedent set forth herein (such documentation to be submitted via the Project document management system and to include a table containing links to the relevant approvals necessary for issuance of NTP2).

EXHIBIT 4

CONSTRUCTION COMPLETION CONDITIONS

PART 1 – NETWORK SEGMENT SUBSTANTIAL COMPLETION CONDITIONS

1. **COMPLETION OF CONSTRUCTION WORK**

Except with respect to any Punch List items, all Construction Work necessary for the operation and maintenance of the relevant Network Segment is complete.

2. **ACCEPTANCE TESTING**

Acceptance testing of the relevant Network Segment has been successfully completed in accordance with Section [●] of the Technical Requirements.

3. **O&M SYSTEMS**

The Developer has the systems in place to provide the O&M Work for the relevant Network Segment in accordance with the Technical Requirements, and the Developer has developed and delivered to the Department for review and comment, in accordance with the Technical Requirements, the [O&M Manual] with respect to the relevant Network Segment.

4. **SUBMITTALS**

All submittals for the Design Work and Construction Work that the Developer is required by the Comprehensive Agreement to submit after Substantial Completion for the relevant Network Segment have been submitted to, and acted on by, the Department.

5. **GOVERNMENTAL ENTITY REQUIREMENTS**

If any Governmental Entity with jurisdiction requires any form of certification of design, engineering or construction with respect to the relevant Network Segment, including any certification from the Engineer of Record for the Project, the Developer has caused such certificates to be delivered and has concurrently issued identical certificates to the Department.

6. **GOVERNMENTAL APPROVAL CONDITIONS**

All of the conditions of the Governmental Approvals relating to the relevant Network Segment that relate to Design Work or Construction Work have been satisfied in full.

7. **GOVERNMENTAL APPROVALS FOR O&M WORK**

All Governmental Approvals (if any) required to perform O&M Work with respect to the relevant Network Segment, other than any Governmental Approvals that will not be required for performance of the O&M Work until a later date, are in place, have been provided to the Department and are not subject to appeal.

8. **NO OVERDUE AMOUNTS**

The Developer has certified to the Department in writing that no overdue amounts owing to any Key Contractor with respect to the Network Segment remain unpaid (except for amounts being disputed in Good Faith and for which the Developer has established adequate reserves).

PART 2 – NETWORK SUBSTANTIAL COMPLETION CONDITIONS

1. SUBSTANTIAL COMPLETION OF ALL NETWORK SEGMENTS

The Developer has achieved Network Segment Substantial Completion with respect to all Network Segments in the applicable Network.

2. ACCEPTANCE TESTING

Acceptance testing of the Network has been successfully completed in accordance with Section [●] of the Technical Requirements.

PART 3 – PROJECT SUBSTANTIAL COMPLETION CONDITIONS

1. SUBSTANTIAL COMPLETION OF BOTH NETWORKS

The Developer has achieved Network Substantial Completion with respect each of the I-95/U.S. 70 Network and the U.S. 74 Network.

2. ACCEPTANCE TESTING

Acceptance testing of the Project has been successfully completed in accordance with Section [●] of the Technical Requirements.

PART 4 – NETWORK FINAL ACCEPTANCE CONDITIONS

1. PUNCH LIST

All Punch List items have been completed in accordance with the requirements of the Comprehensive Agreement.

2. AS-BUILT DRAWINGS

The Department has received and accepted a complete set of the As-Built Drawings for the relevant Network, in the form specified in Section [●] of the Technical Requirements.

3. NO OVERDUE AMOUNTS

The Developer has certified to the Department in writing that no overdue amounts owing to any Key Contractor with respect to the Network remain unpaid (except for amounts being disputed in Good Faith and for which the Developer has established adequate reserves).

PART 5 – PROJECT FINAL ACCEPTANCE CONDITIONS

1. NETWORK FINAL ACCEPTANCE FOR BOTH NETWORKS

The Developer has achieved Network Final Acceptance with respect each of the I-95/U.S. 70 Network and the U.S. 74 Network.

EXHIBIT 5

KEY PERSONNEL

Position Title	Primary Functions/Duties	Period during which Position is to be Filled	Minimum Qualifications/ Experience	Name of Initial Individual
[•]	[•]	[•]	[•]	[•]

EXHIBIT 6

COMPENSATION ON TERMINATION¹⁶

1. COMPENSATION ON TERMINATION FOR CONVENIENCE, DEPARTMENT DEFAULT OR COURT RULING

On termination of the Comprehensive Agreement pursuant to Section 56 (Termination for Convenience), Section 57 (Termination for Department Default), or Section 61.1 (Termination by Court Ruling), the Department shall, subject to and in accordance with Section 5 (Miscellaneous Compensation Provisions) of this Exhibit 6, pay to Developer an amount (the “Department Termination Sum”) calculated at the Early Termination Date (without double-counting) as follows:

- (a) Fair Market Value of Developer’s Interest (as determined pursuant to Section 5.1 (Determination of Fair Market Value) of this Exhibit 6 (Compensation on Termination)); plus
- (b) Net Lenders’ Liabilities; plus
- (c) Subcontractor Breakage Costs; plus
- (d) without double-counting, the amount of Developer’s gross revenue (if any) that has been received but not earned (in accordance with US GAAP) under Commercial Agreements and that will be refunded from Developer to its customers as a direct result of the Early Termination; plus
- (e) Redundancy Payments for employees of Developer that have been or will be reasonably incurred by Developer as a direct result of termination of this Agreement; minus
- (f) any Liquidated Damages assessed but not paid.

2. COMPENSATION ON TERMINATION FOR EXTENDED FORCE MAJEURE, UNINSURABILITY OR MATERIALLY ADVERSE FCC ORDER

On termination of the Comprehensive Agreement pursuant to Section 59 (Termination for Extended Force Majeure), Section 60 (Termination for Uninsurability), or Section 61.3 (Termination for Materially Adverse FCC Order) the Department shall, subject to and in accordance with Section 5 (Miscellaneous Compensation Provisions) of this Exhibit 6, pay to Developer an amount (the “No Fault Termination Sum”) calculated at the Early Termination Date (without double-counting) as follows:

- (a) The greater of zero (0) or the sum of:
 - (i) all amounts paid to Developer by way of equity to the capital of Developer less dividends and other distributions paid by the Developer to the Equity Members, (except to the extent deducted under clause (a)(ii)); plus

¹⁶ **Note to Proposers:** The terms of Exhibit 6 have been set assuming the Preferred Proposer will put in place a non-recourse project finance structure that includes debt. The Department will revise the terms of Exhibit 6 as needed to accommodate a different financing structure.

- (ii) the principal amount of all Equity Member Debt less an amount equal to the aggregate of all payments of interest made by Developer under the Equity Member Funding Agreements; plus
- (b) the amount of gross revenue (if any) which has been received but not earned (in accordance with US GAAP) under Commercial Agreements and will be refunded from Developer to its customers as a direct result of the Early Termination), less, without double-counting (A) any reserves held by Developer of such unearned revenue and (B) any distributions or other types of payments whatsoever (including payments subject to a contingency) which were made to Equity Members prior to Early Termination using such unearned revenue; plus
- (c) Net Lenders' Liabilities; plus
- (d) Subcontractor Breakage Costs; plus
- (e) Redundancy Payments for employees of Developer that have been or will be reasonably incurred by Developer as a direct result of termination of this Agreement; minus
- (f) any Liquidated Damages assessed but not paid.

3. COMPENSATION ON TERMINATION FOR DEVELOPER DEFAULT PRIOR TO PROJECT SUBSTANTIAL COMPLETION

On termination of the Comprehensive Agreement pursuant to Section 58 (Termination for Developer Default) prior to the Project Substantial Completion Date, the Department shall, subject to and in accordance with Section 5 (Miscellaneous Compensation Provisions) of this Exhibit 6, pay to Developer an amount (the "Developer Default (D&C Period) Termination Sum") equal to the lower of:

- (a) the D&C Work Value; and
- (b) the Net Lenders' Liabilities.

4. COMPENSATION ON TERMINATION FOR DEVELOPER DEFAULT ON OR AFTER SUBSTANTIAL PROJECT COMPLETION

On termination of the Comprehensive Agreement pursuant to Section 58 (Termination for Developer Default) on or after the Substantial Project Completion Date, the Department shall, subject to and in accordance with Section 5 (Miscellaneous Compensation Provisions) of this Exhibit 6, pay to Developer an amount (the "Developer Default (Operating Period) Termination Sum") calculated at the Early Termination Date (without double-counting) as follows:

- (a) eighty percent (80%) of the amount of Lenders' Liabilities as of the Early Termination Date; minus
- (b) all Losses incurred by the Department as a result of such termination, including but not limited to:
 - (i) the costs to rectify any nonconforming work and any funds reasonably necessary to ensure that the future costs of O&M Work and the fulfillment of the Handback Requirements will not exceed the costs shown in the Base Case Financial Model;

- (ii) the costs of procuring a new developer to undertake the Work; and
- (iii) transition costs;

minus

- (c) an amount equal to the sum of the following amounts:
 - (i) Deferred Equity Amounts (if any);
 - (ii) Insurance Proceeds; and
 - (iii) Account Balances.

5. MISCELLANEOUS COMPENSATION PROVISIONS

5.1 Determination of Fair Market Value

Whenever Fair Market Value of the Developer's Interest is required to be determined, it shall be determined as of the Early Termination Date as follows:

- (a) Within thirty (30) days after a request by either Party, the Department and the Developer shall jointly appoint an independent third party appraiser (the "Appraiser") to determine the Fair Market Value of the Developer's Interest. The Appraiser must be nationally recognized and experienced in appraising similar assets. If the Parties fail to appoint the Appraiser by such deadline, each party shall appoint, within ten (10) days after such deadline, an independent third-party appraiser, and such appraisers shall jointly appoint, within fifteen (15) days after their appointments, the Appraiser. If such appraisers fails to appoint the Appraiser by such deadline, either Party may petition the [court of competent jurisdiction] to appoint the Appraiser. The Department and the Developer shall pay in equal shares the reasonable costs and expenses of the Appraiser; provided, each Party shall pay the costs of their own appraiser (contemplated in the third sentence of this paragraph).
- (b) The Appraiser shall appraise Fair Market Value on the basis of the assumptions contained in the definition of Fair Market Value and by taking into account (i) the terms of this Agreement, (ii) the condition of the Project, (iii) the Developer's record regarding compliance with the O&M Performance Requirements, but only for the purpose of evaluating and taking into account the effect of such record on the condition and viability of the Project, (iv) the projected revenues and costs of the Project for the remainder of the Term had the Comprehensive Agreement not be terminated, as determined by the Appraiser and (v) such other factors as the Appraiser considers relevant. The Appraiser will determine the data inputs and data values.
- (c) In conducting the appraisal, and before issuing a draft appraisal report, the Appraiser shall afford each Party with a reasonable and comparable opportunity to provide the Appraiser with information, data, analysis and reasons supporting each Party's view on the Fair Market Value. The Appraiser shall then deliver to both Parties a draft appraisal report. The Parties shall have fifteen (15) days after receipt of the draft appraisal report to comment thereon. Not later than fifteen (15) days after the opportunity to comment has expired, the Appraiser shall consider and evaluate all comments, prepare a final appraisal report stating the Fair Market Value, and deliver the final appraisal report to both Parties.

- (d) Either Party may Dispute the Appraiser's determination of Fair Market Value within thirty (30) days after receiving the final appraisal report, which Dispute shall be resolved according to the Dispute Resolution Procedures. Failure to timely Dispute the final appraisal report shall constitute acceptance thereof. In resolution of any such Dispute, the Appraiser's determination shall be given substantial weight in evidence absent failure to properly apply the terms of this Agreement or Applicable Law.

5.2 Set-Off on Termination

Notwithstanding any other provision of this Agreement, the Department may not set off any amount against the Department Termination Sum or the No Fault Termination Sum if the effect of such set off would be to reduce the amount payable to the Developer to less than an amount equal to the Net Lenders' Liabilities. Subject to the foregoing sentence of this Section 5.2 (Set-Off on Termination), the Department may set off any Revenue Sharing Payments against any Termination Sum payable by the Department to the Developer.

5.3 Payment of Termination Sum by Department

Subject to Section 72 (Financial Obligations of the Department) of the Comprehensive Agreement, the Department shall pay any Termination Sum within sixty (60) days after such amount is finally agreed or determined. Such payment shall be made together with any interest that may accrue under the Finance Documents between the Early Termination Date and the date of payment of the Termination Sum by the Department.

5.4 Payment of Termination Sum by Developer

If the Developer Default (D&C Period) Termination Sum is less than zero, the Developer shall pay an amount equal to the absolute value of the Developer Default (D&C Period) Termination Sum to the Department within sixty (60) days after such amount is finally agreed or determined.

5.5 Transfer of Key Assets

As a condition precedent to the payment of any Termination Sum by the Department, the Department may require the Developer to (i) transfer its rights, title and interest in and to the Key Assets to the Department and (ii) make available to the Department as of the Early Termination Date the benefit of all warranties provided to the Developer by the Lead Contractor and the O&M Contractor.

5.6 Exclusivity of Remedy

Any Termination Sum irrevocably paid by the Department to the Developer or the Developer to the Department will be in full and final settlement of each Party's rights and claims against the other for breaches and termination of this Agreement whether under contract, tort, restitution or otherwise, but without prejudice to:

- (a) any accrued liability of either Party to the other that arose prior to the Early Termination Date, but not from the termination itself (including any Milestone Payment accrued but not yet paid to the Developer), to the extent such liability has not already been taken into account in the calculation of the Termination Sum; and
- (b) any liabilities arising with respect to any breach by either Party after the Early Termination Date of any obligation under this Agreement that survives the Early Termination Date, to the extent not taken into account in the calculation of the Termination Sum.

5.7 Lenders' Liabilities

The Department shall be entitled to rely on a certificate of the Collateral Agent as conclusive evidence as to the amount of the Lenders' Liabilities outstanding at the relevant time.

EXHIBIT 7

PRINCIPLES FOR CALCULATION OF CHANGE IN COSTS

Any Change in Costs will be calculated in accordance with the following principles:

1. OMISSION AND SUBSTITUTION OF WORK

Where a Relevant Event involves the omission of work and its substitution with new work, the incremental costs incurred by the Developer must exclude the value of the new work to the extent that the value of the new work is the same as the value of the work omitted.

2. INCREMENTAL COSTS AND REVENUES ONLY

Changes in Costs must be determined on an incremental basis where:

- (a) in the case of an increase in costs, only costs that would not be incurred but for the Relevant Event are taken into account; and
- (b) in the case of a reduction in costs, only savings that would not have accrued but for the Relevant Event are taken into account.

3. FAIR AND REASONABLE, ARM'S LENGTH ARRANGEMENTS

All increases and decreases in costs included in the calculation must:

- (a) be fair and reasonable; and
- (b) reflect commercial arm's length arrangements.

4. NONCOMPLIANCE WITH MITIGATION AND OTHER OBLIGATIONS

All Changes in Costs will:

- (a) exclude any incremental costs which would not have been incurred or suffered; and
- (b) include any cost savings which would have been derived,

had the Developer complied with its obligations (including its obligations to mitigate) under the Comprehensive Agreement.

5. MARGINS

- (a) The Developer is entitled to claim margin on costs that it incurs in amount not to exceed three percent (3%) of such costs.
- (b) No Key Contractor is entitled to claim margin on the costs that it incurs in excess of the margin under the relevant Key Contract as at the Closing Date.

6. NO UNNECESSARY CONTRACTING LAYERS

No entity which is a Lead Contractor Member, or an Affiliate of a Lead Contractor Member, may perform work arising out of a Relevant Event as a subcontractor to a Key Contractor or to any other contractor further down the contracting chain without the Department's consent (such consent not to be unreasonably withheld if that entity is already engaged in relation to such work).

Appendix Part F – P3: Acknowledgement of Comprehensive Agreement Terms Review

Appendix Part F – P3: Acknowledgment of Comprehensive Agreement Terms Review

North Carolina Department of Transportation
I-95 & U.S. 70 Broadband Infrastructure Project
TIP R-5777D, I-5986C, HO-0002A, B & C



Instructions: Proposers must acknowledge that they have reviewed the Comprehensive Agreement Terms for the Project and identify any changes or specific modifications in writing that the Proposer considers essential for entering into a Contract Agreement with the Department for this Project. The Department reserves the right to consider and accept, in its sole and absolute discretion, to requested changes in the Comprehensive Agreement Terms.

The Comprehensive Agreement Terms were reviewed in connection with this RFP.

Authorized Signature: _____ Date: _____

Print Name: _____ Title: _____

Firm Name: _____

List all proposed changes / modifications to the Comprehensive Agreement Terms (if any) below:

- 1.
- 2.
- 3.

Appendix Part G – P3: Price Proposal for O&M and Commercialization

Please refer to attachment “NC Fiber Final RFP_Appendix Part G - P3 Price Proposal for OM and Commercialization.xlsx”

Appendix Part H – DB: Form of Bid Bond

Contract No. _____
County _____

Rev. 4-19-11

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, NC**

BID BOND

Principal: _____
Name of Principal Contractor

Surety: _____
Name of Surety

Contract Number: _____ County: _____

Date of Bid: _____

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL CONTRACTOR (hereafter, PRINCIPAL) and SURETY above named, are held and firmly bound unto the Department of Transportation in the full and just sum of five (5) percent of the total amount bid by the Principal for the project stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

NOW, THEREFORE, the condition of this obligation is: the Principal shall not withdraw its bid within sixty (60) days after the opening of the bids, or within such other time period as may be provided in the proposal, and if the Board of Transportation shall award a contract to the Principal, the Principal shall, within fourteen (14) calendar days after written notice of award is received by him, provide bonds with good and sufficient surety, as required for the faithful performance of the contract and for the protection of all persons supplying labor, material, and equipment for the prosecution of the work. In the event the Principal requests permission to withdraw his bid due to mistake in accordance with the provisions of Article 103-3 of the *Standard Specifications for Roads and Structures*, the conditions and obligations of this Bid Bond shall remain in full force and effect until the Department of Transportation makes a final determination to either allow the bid to be withdrawn or to proceed with award of the contract. In the event a determination is made to award the contract, the Principal shall have fourteen (14) calendar days to comply with the requirements set forth above. In the event the Principal withdraws its bid after bids are opened except as provided in Article 103-3, or after award of the contract has been made fails to execute such additional documents as may be required and to provide the required bonds within the time period specified above, then the amount of the bid bond shall be immediately paid to the Department of Transportation as liquidated damages.

IN TESTIMONY WHEREOF, the Principal and Surety have caused these presents to be duly signed and sealed.

This the _____ day of _____, 20 _____

Surety

By _____
General Agent or Attorney-in-Fact Signature

Seal of Surety

Print or type Signer's Name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

CORPORATION

SIGNATURE OF CONTRACTOR (Principal)

Full name of Corporation

Address as prequalified

By _____
Signature of **President, Vice President, Assistant Vice President**
Select appropriate title

Print or type Signer's name

Affix Corporate Seal

Attest _____
Signature of **Secretary, Assistant Secretary**
Select appropriate title

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

LIMITED LIABILITY COMPANY

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Full name of Firm

Address as prequalified

**Signature of Member/
Manager/Authorized Agent**

Individually

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Individual Name

Trading and doing business as

Full name of Firm

Address as prequalified

Signature of Contractor

Individually

Print or type Signer's name

Signature of Witness

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

INDIVIDUAL DOING BUSINESS IN HIS OWN NAME

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor _____
Print or type Individual Name

Address as prequalified

Signature of Contractor _____
Individually

Print or type Signer's name

Signature of Witness

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND
PARTNERSHIP

SIGNATURE OF CONTRACTOR (Principal)

Full name of Partnership

Address as prequalified

By _____
Signature of Partner

Print or type Signer's name

Signature of Witness

Print or type Signer's name

Appendix Part I – OMC: Form of Bid Bond

Contract No. _____
County _____

Rev. 4-19-11

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, NC**

BID BOND

Principal: _____
Name of Principal Contractor

Surety: _____
Name of Surety

Contract Number: _____ County: _____

Date of Bid: _____

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL CONTRACTOR (hereafter, PRINCIPAL) and SURETY above named, are held and firmly bound unto the Department of Transportation in the full and just sum of \$2 Million by the Principal for the project stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

NOW, THEREFORE, the condition of this obligation is: the Principal shall not withdraw its bid within sixty (60) days after the opening of the bids, or within such other time period as may be provided in the proposal, and if the Board of Transportation shall award a contract to the Principal, the Principal shall, within fourteen (14) calendar days after written notice of award is received by him, provide bonds with good and sufficient surety, as required for the faithful performance of the contract and for the protection of all persons supplying labor, material, and equipment for the prosecution of the work. In the event the Principal requests permission to withdraw his bid due to mistake in accordance with the provisions of Article 103-3 of the *Standard Specifications for Roads and Structures*, the conditions and obligations of this Bid Bond shall remain in full force and effect until the Department of Transportation makes a final determination to either allow the bid to be withdrawn or to proceed with award of the contract. In the event a determination is made to award the contract, the Principal shall have fourteen (14) calendar days to comply with the requirements set forth above. In the event the Principal withdraws its bid after bids are opened except as provided in Article 103-3, or after award of the contract has been made fails to execute such additional documents as may be required and to provide the required bonds within the time period specified above, then the amount of the bid bond shall be immediately paid to the Department of Transportation as liquidated damages.

IN TESTIMONY WHEREOF, the Principal and Surety have caused these presents to be duly signed and sealed.

This the _____ day of _____, 20 _____

Surety

By _____
General Agent or Attorney-in-Fact Signature

Seal of Surety

Print or type Signer's Name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

CORPORATION

SIGNATURE OF CONTRACTOR (Principal)

Full name of Corporation

Address as prequalified

By _____
Signature of **President, Vice President, Assistant Vice President**
Select appropriate title

Print or type Signer's name

Affix Corporate Seal

Attest _____
Signature of **Secretary, Assistant Secretary**
Select appropriate title

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

LIMITED LIABILITY COMPANY

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Full name of Firm

Address as prequalified

**Signature of Member/
Manager/Authorized Agent**

Individually

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Individual Name

Trading and doing business as

Full name of Firm

Address as prequalified

Signature of Contractor

Individually

Print or type Signer's name

Signature of Witness

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

INDIVIDUAL DOING BUSINESS IN HIS OWN NAME

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor _____
Print or type Individual Name

Address as prequalified

Signature of Contractor _____
Individually

Print or type Signer's name

Signature of Witness

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

PARTNERSHIP

SIGNATURE OF CONTRACTOR (Principal)

Full name of Partnership

Address as prequalified

By _____
Signature of Partner

Print or type Signer's name

Signature of Witness

Print or type Signer's name

Appendix Part J – P3: Form of Bid Bond

Contract No. _____
County _____

Rev. 4-19-11

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, NC**

BID BOND

Principal: _____
Name of Principal Contractor

Surety: _____
Name of Surety

Contract Number: _____ County: _____

Date of Bid: _____

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL CONTRACTOR (hereafter, PRINCIPAL) and SURETY above named, are held and firmly bound unto the Department of Transportation in the full and just sum of seven (7) percent of the total amount bid by the Principal for the project stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

NOW, THEREFORE, the condition of this obligation is: the Principal shall not withdraw its bid within sixty (60) days after the opening of the bids, or within such other time period as may be provided in the proposal, and if the Board of Transportation shall award a contract to the Principal, the Principal shall, within fourteen (14) calendar days after written notice of award is received by him, provide bonds with good and sufficient surety, as required for the faithful performance of the contract and for the protection of all persons supplying labor, material, and equipment for the prosecution of the work. In the event the Principal requests permission to withdraw his bid due to mistake in accordance with the provisions of Article 103-3 of the *Standard Specifications for Roads and Structures*, the conditions and obligations of this Bid Bond shall remain in full force and effect until the Department of Transportation makes a final determination to either allow the bid to be withdrawn or to proceed with award of the contract. In the event a determination is made to award the contract, the Principal shall have fourteen (14) calendar days to comply with the requirements set forth above. In the event the Principal withdraws its bid after bids are opened except as provided in Article 103-3, or after award of the contract has been made fails to execute such additional documents as may be required and to provide the required bonds within the time period specified above, then the amount of the bid bond shall be immediately paid to the Department of Transportation as liquidated damages.

IN TESTIMONY WHEREOF, the Principal and Surety have caused these presents to be duly signed and sealed.

This the _____ day of _____, 20 _____

Surety

By _____
General Agent or Attorney-in-Fact Signature

Seal of Surety

Print or type Signer's Name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND
CORPORATION

SIGNATURE OF CONTRACTOR (Principal)

Full name of Corporation

Address as prequalified

By _____
Signature of **President, Vice President, Assistant Vice President**
Select appropriate title

Print or type Signer's name

Affix Corporate Seal

Attest _____
Signature of **Secretary, Assistant Secretary**
Select appropriate title

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

LIMITED LIABILITY COMPANY

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Full name of Firm

Address as prequalified

**Signature of Member/
Manager/Authorized Agent**

Individually

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor

Individual Name

Trading and doing business as

Full name of Firm

Address as prequalified

Signature of Contractor

Individually

Print or type Signer's name

Signature of Witness

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

INDIVIDUAL DOING BUSINESS IN HIS OWN NAME

SIGNATURE OF CONTRACTOR (Principal)

Name of Contractor _____
Print or type Individual Name

Address as prequalified

Signature of Contractor _____
Individually

Print or type Signer's name

Signature of Witness

Print or type Signer's name

Contract No. _____
County _____

Rev. 4-19-11

BID BOND

PARTNERSHIP

SIGNATURE OF CONTRACTOR (Principal)

Full name of Partnership

Address as prequalified

By _____
Signature of Partner

Print or type Signer's name

Signature of Witness

Print or type Signer's name

