

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

**REQUEST FOR PROPOSALS, VOLUME II  
BOOK 3, SPECIFICATIONS, STANDARDS, MANUALS AND  
GUIDELINES**



**TIP I-3311C, I-5405, I-4750AA**

**August 8, 2013**



**Addendum No. 1: Issued August 29, 2013  
Addendum No. 2: Issued November 13, 2013**

**DATE AND TIME OF PROPOSAL SUBMISSION: JANUARY 20, 2014 BY 3:00 PM**

**CONTRACT ID: C 203406**

**WBS ELEMENT NO. 45454.3.P3S1**

**FEDERAL-AID NO. NHPF-077-1(216)**

**COUNTY: Mecklenburg and Iredell Counties**

**ROUTE NO. I-77 and I-277**

**LOCATION: I-77 from I-277 to Exit 36, and I-277 from I-77 to Exit 3A/B**

**TYPE OF WORK: PUBLIC PRIVATE PARTNERSHIP FOR I-77 HOT LANES AS SPECIFIED  
IN THE RFP**

**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 PROPOSAL 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 ANNOUNCEMENT OF APPARENT BEST VALUE PROPOSER, REGARDLESS OF FUNDING SOURCES.

# Table of Contents

1	INTRODUCTION .....	1
1.1	North Carolina Department of Transportation (NCDOT) .....	1
1.2	American Association of State Highway and Transportation Officials (AASHTO).....	5
1.3	American Institute of Aeronautics and Astronautics (AIAA) .....	6
1.4	American Nursery and Landscape Association (ANLA).....	6
1.5	American Railway Engineering and Maintenance-of-Way Association (AREMA).....	6
1.6	CSX Transportation (CSXT) .....	7
1.7	Department of Justice (DOJ) .....	7
1.8	Electronic Industries Alliance (EIA) .....	7
1.9	Environmental Protection Agency (EPA).....	7
1.10	E-ZPass Interagency Group .....	7
1.11	Federal Highway Administration (FHWA) / Federal Aid Policy Guide (FAPG).....	8
1.12	Federal Highway Administration (FHWA).....	8
1.13	Institute of Electrical and Electronics Engineers (IEEE).....	9
1.14	Internet Engineering Task Force (IETF).....	9
1.15	National Cooperative Highway Research Program (NCHRP).....	9
1.16	National Electrical Code (NEC).....	10
1.17	National Electrical Manufacturers Association (NEMA) .....	10
1.18	National Fire Protection Association (NFPA).....	10
1.19	Norfolk Southern Corporation .....	10
1.20	North Carolina Administrative Code (NCAC).....	11
1.21	North Carolina Department of Environmental and Natural Resources (NCDENR) .....	11
1.22	North Carolina General Statutes (NCGS).....	11
1.23	Organization for the Advancement of Structured Information Standards (OASIS).....	12
1.24	Telecommunications Industry Association (TIA).....	12
1.25	Underwriters Laboratory (UL) .....	12

# 1 INTRODUCTION

The following pages provide a non exclusive list of Specifications, Standards, Manuals and Guidelines to be used for the Project.

## 1.1 North Carolina Department of Transportation (NCDOT)

NAME
• Approved Product List
• Best Management Practices for Construction and Maintenance Activities
• Bridge Deck Rideability and Grooving at Station
• Bridge Inspection Manual
• Bridge Maintenance Manual
• Cement and Lime Stabilization of Sub-Grade Soils
• Complete Streets Manual
• Concrete Pavement Survey Manual
• Congestion Management Capacity Analysis Guidelines
• Construction Manual
• Design Noise Report (I-3311C)
• Design Noise Report (I-4750)
• Design Noise Report (I-5405)
• Design-Build Submittal Guidelines
• Digital Imagery Distress (Pavement) Evaluation Handbook
• Drilled Pier Inspection Manual
• Emergency Response and Procedures Manual
• Erosion and Sediment Control Design and Construction Manual
• Erosion and Sediment Control Details

NAME
• Erosion and Sediment Control Field Guide
• Erosion and Sediment Control Special Provisions
• General and Roadway Standard Provisions
• Geotechnical Engineering Standard Provisions
• Geotechnical Engineering Special Provisions
• Geotechnical Guidelines for Design-Build Projects
• Geotechnical Investigations Guidelines and Procedures Manual
• Geotechnical Standard Drawings & Cells
• Guidelines and Procedures Manual for Subsurface Investigations
• Guidelines for Managing Hydrodemolition Water
• Guidelines for Planting within Highway Right of Way
• Guidelines for Preparation of Signing Plans for Design-Build Projects
• Guidelines for Preparation of Traffic Control and Pavement Marking Plans for Design-Build Projects
• Guidelines for Preparation of Traffic Signal & Intelligent Transportation System Plans on Design-Build Projects
• Guidelines for Transportation Management Plan Development
• Guidelines for Work Zone “Variable” Speed Limits for NC Highway Construction and Maintenance Activities on High Speed Facilities
• Handbook of Design for Highway Surface Drainage Structures-1973
• Insurance Special Provisions, CSX Transportation, Inc.
• Insurance Special Provisions, Norfolk Southern Railway Company
• Interim Pavement Design Procedure, Nov. 2007
• Intelligent Transportation System Standard Provisions

NAME
• Landscape Plant List
• Location and Surveys Manual, GPS Survey Guidelines
• LRFD Driven Pile Foundation Design Policy
• Maintenance Operations Manual
• Maintenance / Utility Traffic Control Guidelines
• Minimum Sampling Guide
• NC Floodplain Mapping Program MOA
• NC Supplement to the MUTCD
• NEPA Section 404 – Merger Process Information
• North Carolina Division of Highways Guidelines for Drainage Studies and Hydraulics Design-1999 (and addendum)
• North Carolina Incident Management Assistance Patrol (IMAP) Standard Operating Guidelines
• Off-Site Reclamation Procedures
• Pavement Condition Survey Manual (Asphalt)
• Pavement Condition Survey Rating Calculator
• Pedestrian Policy Guidelines
• Pipe Burial Depths
• Policies and Procedures for Accommodating Utilities on Highway Rights of Way
• Policy for Mechanically Stabilized Earth Retaining Walls
• Policy for the Use of Dynamic and Changeable Message Signs
• Procedure for Determining Lateral Effects of a Borrow Pit on Adjacent Wetlands
• Programmatic Agreement (Environmental Impact and Related Procedures)

NAME
• Project Special Provisions – Signal & ITS
• Project Special Provisions - Structures
• Project Special Provisions – Work Zone
• Real Estate Appraisal Standards and Legal Principles
• Requirements for The Preparation of Traffic Control & Pavement Marking Plans
• Right of Way Manual
• Rigid Pavement Rehabilitation
• Roadside Environmental Standard Provisions
• Roadway Design
• Roadway Design Manual
• Roadway Design Guidelines for Design-Build Projects
• Roadway Standard Drawings
• Signing and Delineation Unit, Resources and Typical Layouts
• Snow Clearing Policy
• Standard Specifications for Roads and Structures
• Stormwater BMP Toolbox
• Structures Management Unit Manual
• Structure Design Standard Notes
• Structure Preservation, Rehabilitation, and Repair Provisions
• Structure Project Special Provisions
• Structure Standard Drawings
• Structure Standard Provisions

NAME
• Traffic Engineering Policies, Practices and Legal Authority Resources (TEPPL)
• Traffic Noise Abatement Policy
• Traffic Noise Analysis and Abatement Manual
• Vegetation Management Manual
• Work Zone Safety and Mobility Policy
• Work Zone Standard Provisions

## 1.2 American Association of State Highway and Transportation Officials (AASHTO)

NAME
• A Guide for Transportation Landscape and Environmental Design
• A Policy on Design Standards Interstate System
• A Policy on Geometric Design of Highways and Streets
• AASHTOWare Pavement ME Design
• AWS D 1.5 – Bridge Welding Code
• Construction Handbook for Bridge Temporary Works
• Guide Design Specifications for Bridge Temporary Works
• Guide for Design of Pavement Structures
• Guide Specifications for Structural Design of Sound Barriers
• Guide for the Development of Bicycle Facilities
• Guide Manual for Bridge Element Inspection
• Guidelines for Vegetation Management
• Highway Drainage Guidelines

NAME
• Load and Resistance Factor Design (LRFD) Bridge Design Specifications
• Manual for Assessing Safety Hardware (MASH)
• Manual for Bridge Evaluation
• Mechanistic-Empirical Pavement Design Guide
• Model Drainage Manual
• Roadside Design Guide
• Roadway Lighting Design Guide
• Specifications for Design and Construction of Segmental Bridges
• Standard Specifications for Structural Supports of Highway Signs, Luminaries, and Traffic Signals

**1.3 American Institute of Aeronautics and Astronautics (AIAA)**

NAME
• G-043-1992 Guide for the Preparation of Operational Concept Documents

**1.4 American Nursery and Landscape Association (ANLA)**

NAME
• American Standard for Nursery Stock, ANSI Z60.1

**1.5 American Railway Engineering and Maintenance-of-Way Association (AREMA)**

NAME
• Manual for Railway Engineering

### 1.6 CSX Transportation (CSXT)

NAME
• Construction Submission Criteria
• Design and Construction Standard Specifications
• Public Project Information
• Special Notes for Protection of Railroad Interest
• Construction Contract Documents and Specifications
• Undergrade Bridge Criteria including Ballast Decks

### 1.7 Department of Justice (DOJ)

NAME
• Americans with Disabilities Act of 1990 (ADA)

### 1.8 Electronic Industries Alliance (EIA)

NAME
• Electronic Industries Alliance (EIA) Standards

### 1.9 Environmental Protection Agency (EPA)

NAME
• Storm Water Management For Construction Activities: Developing Pollution Prevention Plans and Best Management Practices (EPA Document 832 R 92-005)

### 1.10 E-ZPass Interagency Group

NAME
• Interoperability Specifications and Standards

**1.11 Federal Highway Administration (FHWA) / Federal Aid Policy Guide (FAPG)**

NAME
• 23 CFR Chapter 1, Part 752, Landscape and Roadside Development
• 23 CFR 140I
• 23 CFR, Part 650, National Bridge Inspection Standards
• 23 CFR 645
• 23 CFR 646
• FHWA Final Rule on Temporary Traffic Control Devices (23 CFR 630 Subpart K)
• 23 CFR Part 772, Procedure for Abatement of Highway Traffic Noise and Construction Noise
• 49 CFR Part 14

**1.12 Federal Highway Administration (FHWA)**

NAME
• Bridge Inspector's Reference Manual
• Culvert Inspection Manual
• Flexibility in Highway Design
• HEC 18 Evaluating Scour at Bridges
• HEC 20 Stream Stability at Bridges
• HEC 23 Bridge Scour and Stream Instability Countermeasures Experience, Selection, and Design Guidance
• Interstate System Access Information Guide
• Manual on Uniform Traffic Control Devices (MUTCD)
• National ITS Architecture

NAME
<ul style="list-style-type: none"> <li>Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges</li> </ul>
<ul style="list-style-type: none"> <li>Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended</li> </ul>
<ul style="list-style-type: none"> <li>Standard Highway Signs</li> </ul>
<ul style="list-style-type: none"> <li>Utility Adjustments &amp; Accommodations on Federal Aid Highway Projects</li> </ul>
<ul style="list-style-type: none"> <li>Guidelines for the Installation, Inspection, Maintenance and Repair of Structural Supports for Highway Signs, Luminaries, and Traffic Signals</li> </ul>

### 1.13 Institute of Electrical and Electronics Engineers (IEEE)

NAME
<ul style="list-style-type: none"> <li>National Electric Code</li> </ul>
<ul style="list-style-type: none"> <li>Standard P1362 V3.2</li> </ul>
<ul style="list-style-type: none"> <li>Std 1512-2006, IEEE Standard for Common Incident Management</li> </ul>
<ul style="list-style-type: none"> <li>Std 1512.1-2006, IEEE Standard for Common Traffic Incident Management</li> </ul>

### 1.14 Internet Engineering Task Force (IETF)

NAME
<ul style="list-style-type: none"> <li>RFC 4648, Base-N Encodings Best Practice</li> </ul>

### 1.15 National Cooperative Highway Research Program (NCHRP)

NAME
<ul style="list-style-type: none"> <li>Report 350 – Recommended Procedures for the Safety Performance Evaluation of Highway Features</li> </ul>
<ul style="list-style-type: none"> <li>Mechanistic-Empirical Pavement Design Guide</li> </ul>

NAME
<ul style="list-style-type: none"> <li>Report 12-52 – AASHTO LRFD Design Example Horizontally Curved Steel I-Girder Bridge</li> </ul>

**1.16 National Electrical Code (NEC)**

NAME
<ul style="list-style-type: none"> <li>National Electrical Code</li> </ul>

**1.17 National Electrical Manufacturers Association (NEMA)**

NAME
<ul style="list-style-type: none"> <li>National Electrical Manufacturers Association Standards</li> </ul>
<ul style="list-style-type: none"> <li>National Transportation Communications ITS Protocol (NTCIP)</li> </ul>

**1.18 National Fire Protection Association (NFPA)**

NAME
<ul style="list-style-type: none"> <li>National Electric Code</li> </ul>
<ul style="list-style-type: none"> <li>NFPA 502 Standard for Road Tunnels, Bridges and other Limited Access Highways, 2011 Edition</li> </ul>
<ul style="list-style-type: none"> <li>NFPA 780 Standard for Installation of Lightning Protection Systems</li> </ul>

**1.19 Norfolk Southern Corporation**

NAME
<ul style="list-style-type: none"> <li>Guidelines for Design of Grade Separation Structures</li> </ul>
<ul style="list-style-type: none"> <li>Special Provisions for Protection of Railway Interest</li> </ul>
<ul style="list-style-type: none"> <li>Standard Specifications for Materials and Construction, January 2011</li> </ul>

**1.20 North Carolina Administrative Code (NCAC)**

NAME
<ul style="list-style-type: none"> <li>• Section 15A – Environment and Natural Resources</li> </ul>
<ul style="list-style-type: none"> <li>• Section 19A - Transportation</li> </ul>

**1.21 North Carolina Department of Environmental and Natural Resources (NCDENR)**

NAME
<ul style="list-style-type: none"> <li>• DWQ Approved PAMS/ Flocculents List</li> </ul>
<ul style="list-style-type: none"> <li>• DWQ Stormwater BMP Manual</li> </ul>
<ul style="list-style-type: none"> <li>• Diamond Grind/Hydrodemolition Land Application of Diamond Grinding and Hydrodemolition Operation Slurry Permit WQ0035749</li> </ul>
<ul style="list-style-type: none"> <li>• Erosion and Sediment Control Planning and Design Manual</li> </ul>
<ul style="list-style-type: none"> <li>• General Permit NCG 010000</li> </ul>
<ul style="list-style-type: none"> <li>• Gravity Sewer Minimum Design Criteria</li> </ul>
<ul style="list-style-type: none"> <li>• Inspection Log (for NCG 010000)</li> </ul>
<ul style="list-style-type: none"> <li>• Rules Governing Public Water Supplies</li> </ul>
<ul style="list-style-type: none"> <li>• Sediment and Erosion Control Program, 1991 Delegation Agreement</li> </ul>
<ul style="list-style-type: none"> <li>• Stormwater Permit NCC000250</li> </ul>

**1.22 North Carolina General Statues (NCGS)**

NAME
<ul style="list-style-type: none"> <li>• Chapter 133-5 through 133-18</li> </ul>
<ul style="list-style-type: none"> <li>• General Stature 136-103</li> </ul>

**1.23 Organization for the Advancement of Structured Information Standards (OASIS)**

NAME
• OASIS Consortium
• Emergency Data Exchange Language (EDXL) Distribution Element v1.0
• Common Alerting Protocol (CAP) v1.2

**1.24 Telecommunications Industry Association (TIA)**

NAME
• Telecommunications Industry Association (TIA) Standards
• Fiber Optic Test Procedures (FOTP) Specifications

**1.25 Underwriters Laboratory (UL)**

NAME
• UL 467 Standard for Safety Grounding and Bonding Equipment