

-- 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  
Addendum No. 3: Issued December 20, 2013  
Addendum No. 4: Issued January 27, 2014  
Addendum No. 5: Issued February 14, 2014  
Addendum No. 6: Issued March 5, 2014  
Addendum No. 7: Issued March 18, 2014**

**DATE AND TIME OF PROPOSAL SUBMISSION:**

Technical Proposal Due Date: **MARCH 31, 2014 BY 3:00 PM**

Financial Proposal Due Date: **MARCH 31, 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.

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# 1 INTRODUCTION

The following pages provide a non exclusive list of Specifications, Standards, Manuals and Guidelines to be used for the Project. Parties shall disregard requirements for measurement or payment in NCDOT documents listed herein.

## 1.1 North Carolina Department of Transportation (NCDOT)

NAME
• Approved Product List
• Best Management Practices for Construction and Maintenance Activities
• Bridge Inspection Manual
• Bridge Maintenance Manual
• Cement and Lime Stabilization of Sub-Grade Soils
• Complete Streets Planning and Design Guidelines
• Concrete Pavement Survey Manual
• Congestion Management Capacity Analysis Guidelines
• Construction Manual
• Digital Imagery Distress (Pavement) Evaluation Handbook
• Emergency Response and Procedures Manual
• Erosion Control Design and Construction Manual
• Erosion and Sediment Control Details
• Erosion and Sediment Control Field Guide
• Geotechnical Guidelines for Design-Build Projects
• Geotechnical Standard Drawings & Cells List
• GPS Survey Guidelines
• Guidelines and Procedures Manual for Subsurface Investigations

NAME
• Guidelines for Managing Hydrodemolition Water
• Guidelines for Planting within Highway Right of Way
• Guidelines for the 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
• Interim Pavement Design Procedure, Nov. 2007
• ITS and Signals Unit Design Manual
• (Landscape) Plant List
• 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
• 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)

NAME
• 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
• Qualified Products List
• Quality Assurance Testing of Lime-Treated Soils Utilizing the Dynamic Cone Penetrometer
• Real Estate Appraisal Standards and Legal Principles
• Right of Way Manual
• Rigid Pavement Rehabilitation
• Roadway Design Manual
• Roadway Design Guidelines for Design-Build Projects
• Roadway Standard Drawings
• Signing and Delineation Unit, Resources and Typical Layouts
• Sediment and Erosion Control Program
• Snow Clearing Policy
• Special Provisions - General
• Special Provisions - Geotechnical Engineering
• Special Provisions - Roadside Environmental
• Special Provisions - Roadway
• Special Provisions – Signs, Signals, and ITS

NAME
• Special Provisions - Structures
• Standard Drawings for Metal Poles
• Standard Specifications for Roads and Structures
• Stormwater BMP Toolbox
• Structures Management Unit Manual
• Structure Preservation, Rehabilitation, and Repair Provisions
• Structure Standard Drawings
• Traffic Engineering Policies, Practices and Legal Authority Resources (TEPPL)
• Traffic Management & Signal Systems Unit Design Manual
• Traffic Noise Abatement Policy
• Traffic Noise Analysis and Abatement Manual
• Vegetation Management Manual
• Work Zone Safety and Mobility Policy

## 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

NAME
• 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
• 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
• Guide for the Preparation of Operational Concept Documents

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

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

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

NAME
<ul style="list-style-type: none"> <li>• Manual for Railway Engineering</li> </ul>

### 1.6 CSX Transportation (CSXT)

NAME
<ul style="list-style-type: none"> <li>• Construction Submission Criteria</li> </ul>
<ul style="list-style-type: none"> <li>• Design and Construction Standard Specifications</li> </ul>
<ul style="list-style-type: none"> <li>• Public Project Information</li> </ul>
<ul style="list-style-type: none"> <li>• Special Notes for Protection of Railroad Interest</li> </ul>
<ul style="list-style-type: none"> <li>• Construction Contract Documents and Specifications</li> </ul>

### 1.7 Electronic Industries Alliance (EIA)

NAME
<ul style="list-style-type: none"> <li>• Electronic Industries Alliance (EIA) Standards</li> </ul>

### 1.8 Environmental Protection Agency (EPA)

NAME
<ul style="list-style-type: none"> <li>• Storm Water Management For Construction Activities: Developing Pollution Prevention Plans and Best Management Practices (EPA Document 832 R 92-005)</li> </ul>

### 1.9 Federal Highway Administration (FHWA)

NAME
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NAME
• Bridge Inspector's Reference Manual
• Culvert Inspection Manual
• Flexibility in Highway Design
• HEC 18 Evaluating Scour at Bridges
• HEC 20 Stream Stability at Highway Structures
• 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
• Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges
• Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended
• Standard Highway Signs
• Utility Relocation & Accommodations on Federal Aid Highway Projects
• Guidelines for the Installation, Inspection, Maintenance and Repair of Structural Supports for Highway Signs, Luminaries, and Traffic Signals

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

NAME
• Standard P1362 V3.2
• Std 1512-2006, IEEE Standard for Common Incident Management Message Sets
• Std 1512.1-2006, IEEE Standard for Common Traffic Incident Management Message Sets

### 1.11 Internet Engineering Task Force (IETF)

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

### 1.12 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>
<ul style="list-style-type: none"><li>• Report 12-52 – AASHTO LRFD Design Example Horizontally Curved Steel I-Girder Bridge</li></ul>

### 1.13 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>

### 1.14 National Fire Protection Association (NFPA)

NAME
<ul style="list-style-type: none"><li>• NFPA 70 National Electric Code</li></ul>
<ul style="list-style-type: none"><li>• NFPA 502 Standard for Road Tunnels, Bridges and other Limited Access Highways</li></ul>
<ul style="list-style-type: none"><li>• NFPA 780 Standard for the Installation of Lightning Protection Systems</li></ul>

### 1.15 Norfolk Southern Corporation (NSC)

NAME
<ul style="list-style-type: none"><li>• Public Projects Manual</li></ul>

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

NAME
• Diamond Grind/Hydrodemolition Land Application of Diamond Grinding and Hydrodemolition Operation Slurry Permit WQ0035749
• DWR Approved PAMS/ Flocculants List
• DWQ-DEMLR Monitoring Form DEMLRDWQ (for NCG 010000)
• DWQ Stormwater BMP Manual
• Erosion and Sediment Control Planning and Design Manual
• General Permit NCG 010000
• Gravity Sewer Minimum Design Criteria
• InspectLog-NCG01-20100120-DWQ-SPU[1] (aka Inspection Record (for NCG 010000))
• Rules Governing Public Water Systems
• Stormwater Permit NCS000250

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

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

**1.18 Telecommunications Industry Association (TIA)**

NAME
• Fiber Optic Test Procedures (FOTP) Specifications

### 1.19 Underwriters Laboratory (UL)

NAME
<ul style="list-style-type: none"><li>UL 467 Standard for Safety Grounding and Bonding Equipment</li></ul>