

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

**BOOK 3, SPECIFICATIONS, STANDARDS, MANUALS AND  
GUIDELINES**

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

**June 26, 2014**



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  
CA DOCUMENTS



# 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).....	4
1.3	American Institute of Aeronautics and Astronautics (AIAA).....	5
1.4	American Nursery and Landscape Association (ANLA).....	5
1.5	American Railway Engineering and Maintenance-of-Way Association (AREMA).....	6
1.6	CSX Transportation (CSXT).....	6
1.7	Electronic Industries Alliance (EIA).....	6
1.8	Environmental Protection Agency (EPA).....	6
1.9	Federal Highway Administration (FHWA).....	6
1.10	Institute of Electrical and Electronics Engineers (IEEE).....	7
1.11	Internet Engineering Task Force (IETF).....	8
1.12	National Cooperative Highway Research Program (NCHRP).....	8
1.13	National Electrical Manufacturers Association (NEMA).....	8
1.14	National Fire Protection Association (NFPA).....	8
1.15	Norfolk Southern Corporation (NSC).....	8
1.16	North Carolina Department of Environmental and Natural Resources (NCDENR).....	9
1.17	Organization for the Advancement of Structured Information Standards (OASIS).....	9
1.18	Telecommunications Industry Association (TIA).....	9
1.19	Underwriters Laboratory (UL).....	10



# 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
<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>DWR Approved PAMS/ Flocculants List</li> </ul>
<ul style="list-style-type: none"> <li>DWQ-DEMLR Monitoring Form DEMLRDWQ (for NCG 010000)</li> </ul>
<ul style="list-style-type: none"> <li>DWQ Stormwater BMP Manual</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>InspectLog-NCG01-20100120-DWQ-SPU[1] (aka Inspection Record (for NCG 010000))</li> </ul>
<ul style="list-style-type: none"> <li>Rules Governing Public Water Systems</li> </ul>
<ul style="list-style-type: none"> <li>Stormwater Permit NCS000250</li> </ul>

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

NAME
<ul style="list-style-type: none"> <li>Emergency Data Exchange Language (EDXL) Distribution Element v1.0</li> </ul>
<ul style="list-style-type: none"> <li>Common Alerting Protocol (CAP) v1.2</li> </ul>

### 1.18 Telecommunications Industry Association (TIA)

NAME
<ul style="list-style-type: none"> <li>Fiber Optic Test Procedures (FOTP) Specifications</li> </ul>

### 1.19 Underwriters Laboratory (UL)

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