

TABLE OF CONTENTS

Section	Title
---------	-------

SECTION 100 – GENERAL PROVISIONS

SECTION 101 – DEFINITIONS AND TERMS

101.01	Abbreviations
101.02	Above Normal Rainfall
101.03	Blank
101.04	Bid Bond
101.05	Bidder
101.06	Bridge
(a)	Length
(b)	Roadway Width
101.07	Calendar Day
101.08	Blank
101.09	Change Order
101.10	Construction Limits
101.11	Contract
101.12	Contract Information Book
101.13	Contract Item (Pay Item)
101.14	Contract Time
101.15	Contractor
101.16	Culvert
101.17	Department
(a)	Materials and Tests Division
(b)	Contract Services Section
(c)	Procurement and Distribution Division
101.18	Commissioner
101.18.1	Embankment Foundation
101.19	Engineer
101.20	Equipment
101.21	Extra Work
101.22	Force Account Work
101.22.1	Frequency Manual
101.23	Holidays
101.24	Invitation for Bids
101.25	Itemized Proposal
101.26	Laboratory
101.27	Major and Minor Contract Items
101.28	Materials
101.29	Notice to Proceed
101.30	Open to Unrestricted Traffic
101.31	Pavement Structure
101.32	Performance Bond
101.33	Plans
101.33.1	Professional Engineer
101.34	Profile Grade
101.35	Project
101.36	Proposal
101.37	Proposal Book
101.38	Reasonably Close Conformance
101.39	Right-of-Way
101.40	Road
101.41	Roadbed
101.42	Roadside
101.43	Roadside Development
101.44	Roadway
101.45	Schedule of Pay Items

TABLE OF CONTENTS

Section	Title
---------	-------

101.46	Shoulder
101.47	Sidewalk
101.48	Special Provisions
101.49	Specifications
101.50	Specified Completion Date
101.51	State
101.52	Street
101.53	Structures
101.53.1	Substantial Completion
101.54	Blank
101.55	Subcontractor
101.56	Subgrade
101.57	Substructure
101.58	Superintendent
101.59	Superstructure
101.60	Supplemental Specifications
101.61	Surety
101.62	Technician or Inspector
101.63	Titles (Headings)
101.64	Township, Town, City
101.65	Traveled Way
101.66	Work
101.67	Work Day
101.68	Working Drawings

SECTION 102 – BIDDING REQUIREMENTS AND CONDITIONS

102.01	Prequalification and Bidding
102.02	Certification Regarding Lobbying for Contracts, Grants, Loans, and Cooperative Agreements

SECTION 103 – AWARD AND EXECUTION OF CONTRACT

103.01	Disadvantaged Business Enterprise Program
(a)	General Requirements
(b)	Definitions
1.	DBE
2.	Small Business Concern
3.	Socially and Economically Disadvantaged Individuals
4.	Certified DBE
(c)	Goal
1.	DBE Joint Venture Type A
2.	DBE Joint Venture Type B
(d)	Affirmative Actions
(e)	Guidelines for Determining Good Faith Efforts
(f)	Affirmative Action Certification
(g)	Subcontracts
(h)	Leases and Rentals
(i)	Records and Reports
103.02	Specific Equal Employment Opportunity Responsibilities
103.03	Blank
103.04	Insurance
(a)	Worker's Compensation and Employer's Liability
(b)	Commercial General Liability
(c)	Business Automobile Liability
(d)	Railroad's Protective Liability
(e)	Owner's and Contractor's Protective Liability Insurance Coverage for Operations of Designated Contractor
(f)	Basis of Payment
103.05	Waiver of Damages

TABLE OF CONTENTS

Section Title

103.06 Wage and Labor Requirements

- (a) Nondiscrimination of Employees
- (b) Affidavits and Payrolls
- (c) Wage Stipulations
 - 1. General Decision Included in Contract Information Book
 - 2. General Decision Not Included in Contract Information Book

103.07 Accident Prevention and Safety

SECTION 104 – SCOPE OF WORK

104.01 Intent of Contract

104.02 Differing Site Conditions, Suspension of Work and Significant Changes in the Character of Work

- (a) Differing Site Conditions
- (b) Suspensions of Work Ordered by the Engineer
- (c) Significant Changes in the Character of Work
- (d) Pre-established Remedies to Changed Conditions

104.03 Extra Work

104.04 Maintenance of Traffic

- (a) Special Detours
- (b) Maintenance Directed by the Engineer
- (c) Blank
- (d) Traffic Control for Patching on a Two-Lane Roadway

104.05 Removal and Disposal of Structures and Obstructions

104.06 Removal and Disposal of Regulated Materials

- (a) For Such Materials which are Identified in the Proposal Book as Being Present on the Project Site
- (b) For Such Materials which are not Identified in the Proposal Book as Being Present on the Project Site

104.07 Rights in and Use of Materials Found in the Project Site

104.08 Final Clean-Up

SECTION 105 – CONTROL OF WORK

105.01 Authority of the Engineer

105.02 Plans and Working Drawings

105.03 Conformance with Plans and Specifications

105.04 Coordination of Plans, Standard Specifications, Supplemental Specifications, and Special Provisions

105.05 Cooperation by Contractor

105.06 Cooperation with Utilities

105.07 Cooperation Between Contractors

105.08 Construction Stakes, Lines, and Grades

- (a) Construction Engineering by the State
- (b) Construction Engineering by the Contractor
- (c) Production Staking by the Contractor

105.09 Duties of Technician and Inspector

105.10 Inspection of Work

105.11 Removal of Unacceptable and Unauthorized Work

105.12 Load Restrictions

105.13 Maintenance During Construction

105.14 Failure to Maintain Roadway, Structures, Barricades, and Construction Signs

105.15 Acceptance and Final Inspection

- (a) Partial Acceptance
- (b) Final Acceptance

105.16 Claims for Adjustment and Disputes

105.17 Field Office

TABLE OF CONTENTS

Section	Title
---------	-------

SECTION 106 – CONTROL OF MATERIAL

106.01 Source of Supply and Quality Requirements

- (a) Approved or Prequalified Materials
- (b) Material Records
 - 1. Documentation of Material Delivery
 - 2. Delivery Ticket Information
 - 3. Payment Procedures
- (c) Buy American Requirement

106.02 Samples, Tests, Cited Specifications

106.03 Plant Inspection

106.04 Field Laboratory

106.05 Storage of Materials

106.06 Handling Materials

106.07 Unacceptable Materials

106.08 Hazard Communication Program

106.09 Department Furnished Materials

106.10 Proportioning Materials

106.11 Sample Asbestos Exclusion Letter

SECTION 107 – LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

107.01 Laws to be Observed

107.02 Permits, Licenses, and Taxes

107.03 Patented Devices, Materials, and Processes

107.04 Restoration of Surfaces Opened by Permit

107.05 Federal Aid Provisions

107.06 Equal Employment Opportunity Trainees

107.07 Sanitary Conditions Requirements

107.08 Public Convenience and Safety

- (a) Employee Safety
- (b) Dust and Air Pollution
- (c) Protection to Traffic
- (d) Notice to Local Public Officials
- (e) Convenience to Traffic and Property Owners

107.09 Railroad-Highway Requirements

- (a) Protection of Track Ballast
- (b) Hold Harmless Clause

107.10 Blank

107.11 Bridges over Navigable Waters

107.12 Traffic Control Devices

107.13 Use of Explosives

107.14 Protection and Restoration of Property and Landscape

107.14.1 Erosion Control Plan and Proof of Publication

107.15 Forest Protection

107.16 Responsibility for Damage Claims

107.17 Opening Sections of Project to Traffic

107.18 Contractor's Responsibility for Work

107.19 Contractor's Responsibility for Utility Property and Services

107.20 Furnishing Right-of-Way

107.21 Personal Liability of Public Officials

107.22 Waiver of Legal Rights

107.23 Governing Law

107.24 Severability

SECTION 108 – PROSECUTION AND PROGRESS

108.01 Subletting of Contract

108.01.1 Release of Retainage to Subcontractors

108.02 Notice to Proceed

TABLE OF CONTENTS

Section Title

- 108.03 Prosecution of the Work
- 108.04 Prephase Site Construction Meetings
- 108.05 Limitation of Operations
- 108.06 Character of Workers, Methods, and Equipment
- 108.07 Determination and Extension of Contract Time
- 108.08 Failure to Complete on Time
- 108.09 Default and Termination of Contract
- 108.10 Termination of Contractor's Responsibility
- 108.11 Contract Documentation

SECTION 109 – MEASUREMENT AND PAYMENT

- 109.01 Measurement of Quantities
 - (a) General Requirements
 - (b) Scales and Measurement by Mass (Weight)
 - (c) Measurement by Volume
 - (d) Measurement of Asphalt Materials
 - (e) Measurement of PCC
 - (f) Measurement of Aggregates
 - (g) Measurement of Timber or Lumber
 - (h) Rental of Equipment
 - (i) Manufactured Materials
- 109.02 Scope of Payment
- 109.03 Compensation for Altered Quantities
- 109.04 Cost Reduction Incentive
 - (a) Cost Reduction Incentive Proposal Requirements
 - (b) Approval of Proposal
 - (c) Method of Measurement
 - (d) Basis of Payment
- 109.05 Extra Work and Force Account Work
 - (a) Labor Costs
 - (b) Bond and Insurance
 - (c) Materials
 - (d) Equipment
 - (e) Miscellaneous
 - (f) Subcontracting
 - (g) Compensation
 - (h) Statements
 - (i) Cost Breakdown
- 109.06 Eliminated Pay Items
- 109.07 Partial Payments
- 109.08 Final Payment

SECTION 110 – MOBILIZATION AND DEMOBILIZATION

- 110.01 Description
- 110.02 Limitations
- 110.03 Method of Measurement
- 110.04 Basis of Payment

SECTION 111 – STOCKPILED MATERIALS

- 111.01 Description
- 111.02 General Requirements
- 111.03 Structural Steel and Concrete Structural Members
 - (a) Delivered to the Job Site
 - (b) Acceptably Stored at the Fabricator's or Manufacturer's Storage Facilities
- 111.04 Dowel Bar Assemblies
- 111.05 Granular Base, Subbase Materials, and Aggregates for HMA and Concrete Pavements

TABLE OF CONTENTS

Section	Title
---------	-------

111.06	Bridge Expansion Joints
(a)	Type SS
(b)	Type M
111.07	Structural Supports for Signals, Signs and Luminaries
111.08	Precast Concrete Median Barrier
111.09	Additional Requirements
111.10	Method of Measurement
111.11	Basis of Payment

SECTION 200 – EARTHWORK

SECTION 201 – CLEARING AND GRUBBING

201.01	Description
201.02	General
201.03	Clearing and Grubbing
201.04	Scalping
201.05	Hedge Removal
201.06	Method of Measurement
(a)	Area Basis
(b)	Lump Sum Basis
(c)	Linear Basis
(d)	Individual Unit Basis
201.07	Basis of Payment
(a)	Area Basis
(b)	Lump Sum Basis
(c)	Linear Basis
(d)	Individual Unit Basis
(e)	Clearing Right-of-Way
(f)	Exclusions

SECTION 202 – REMOVAL OF STRUCTURES AND OBSTRUCTIONS

202.01	Description
202.02	General Requirements
(a)	Type Y Waste
(b)	Type Z Waste
202.03	Removal of Bridges, Culverts, and Other Drainage Structures
(a)	Complete
(b)	Portions
(c)	Disposal of Concrete
202.04	Removal of Pipe and Tile Drains
202.05	Removal of PCCP, Sidewalks, Curbs, etc.
202.06	Removal of Houses and Buildings
202.06.1	Inspection and Removal of Asbestos
202.07	Removal of Underground Storage Tanks Containing Petroleum Products or Other Hazardous Chemicals
(a)	Type A Waste
(b)	Type B Waste
(c)	Type C Waste
202.08	Remediation of Contaminated Soil and Groundwater
202.09	Remediation of Other Regulated Materials
202.10	Transportation and Disposal of Regulated Materials
202.11	Blank
202.12	Method of Measurement
202.13	Basis of Payment

TABLE OF CONTENTS

Section Title

SECTION 203 – EXCAVATION AND EMBANKMENT

- 203.01 Description
- 203.02 Common Excavation
- 203.03 Rock Excavation
- 203.04 Unclassified Excavation
- 203.05 Peat Excavation
- 203.06 Waterway Excavation
- 203.07 Class Y Excavation
- 203.08 Borrow or Disposal
- 203.09 General Requirements
- 203.10 Disposal of Excavated Material Except Waterway and Peat Excavation
- 203.11 Disposal of Waterway Excavation
- 203.12 Disposal of Peat
- 203.13 Slides
- 203.14 Drainage
- 203.15 Excavating Rock
- 203.16 Peat Deposit Treatment
 - (a) Treatment of Existing Fills
 - (b) Treatment by Removal
 - (c) Treatment by Displacement
- 203.17 Cased Test Holes
- 203.18 Embankment Construction
- 203.19 Embankment Over and Around Structures
- 203.20 Rock and Shale Embankment
 - (a) Rock Embankment
 - (b) Shale, Shale and Soft Rock Mixtures, or Soft Rock
 - (c) Shale and Thinly Layered Limestone
- 203.21 Embankment on Hillsides or Slopes
- 203.22 Embankment Over Existing Roadbeds
- 203.23 Embankment Other Than Rock and Shale, With Density Control
- 203.24 Method of Making Density Tests
 - (a) Laboratory
 - (b) Field
- 203.25 Embankment Without Density Control
- 203.26 Proofrolling
- 203.27 Method of Measurement
 - (a) Contract Quantity
 - (b) Measured Quantities
 - (c) Measurement on a Linear Basis
 - (d) Measurement of Excavation Items on a Weight Basis
 - (e) Measurement of Embankments
 - (f) Measurement of Borrow
 - (g) Measurement of Embankment Foundation Soils Treatment
 - (h) Measurement of Water for Shale, Shale and Soft Rock Mixtures, or Soft Rock
 - (i) Lump Sum
 - (j) Measurement of Exploratory Cores
- 203.28 Basis of Payment

SECTION 204 – GEOTECHNICAL INSTRUMENTATION

- 204.01 Description
- 204.02 Materials
- 204.03 Settlement Plates
 - (a) Installation of Settlement Plates
 - (b) Instrument Readings and Settlement Period
- 204.04 Method of Measurement
- 204.05 Basis of Payment

TABLE OF CONTENTS

Section	Title
---------	-------

SECTION 205 – TEMPORARY EROSION AND SEDIMENT CONTROL	
--	--

205.01	Description
--------	-------------

205.02	Materials
--------	-----------

205.03	Control Measures
--------	------------------

(a)	Silt Fence
-----	------------

(b)	Temporary Mulching
-----	--------------------

(c)	Check Dams
-----	------------

1.	Revetment Riprap
----	------------------

2.	Straw Bales
----	-------------

(d)	Interceptor Ditches
-----	---------------------

(e)	Sediment Traps
-----	----------------

(f)	Sediment Basins
-----	-----------------

(g)	Ditch Inlet Protection
-----	------------------------

(h)	Slope Drains
-----	--------------

(i)	Temporary Seeding
-----	-------------------

(j)	Vegetative Filter Strips
-----	--------------------------

(k)	Splashpads
-----	------------

(l)	Deck and Curb Inlet Protection
-----	--------------------------------

(m)	Detention Ponds
-----	-----------------

(n)	Retention Ponds
-----	-----------------

205.04	Maintenance
--------	-------------

205.05	Removal
--------	---------

205.06	Method of Measurement
--------	-----------------------

205.07	Basis of Payment
--------	------------------

SECTION 206 – STRUCTURE EXCAVATION	
------------------------------------	--

206.01	Description
--------	-------------

206.02	Class X Excavation
--------	--------------------

(a)	General Excavation
-----	--------------------

(b)	Excavation for Foundations of Traffic Support Structures
-----	--

206.03	Wet Excavation
--------	----------------

206.04	Dry Excavation
--------	----------------

206.05	Foundation Excavation, Unclassified
--------	-------------------------------------

206.06	General Requirements
--------	----------------------

206.07	Disposal of Excavated Material
--------	--------------------------------

206.08	Preparation of Foundation Surfaces
--------	------------------------------------

206.09	Cofferdams and Temporary Construction Dikes
--------	---

206.10	Method of Measurement
--------	-----------------------

206.11	Basis of Payment
--------	------------------

(a)	Culverts and Retaining Walls
-----	------------------------------

(b)	Bridges
-----	---------

(c)	Traffic Structure Supports
-----	----------------------------

SECTION 207 – SUBGRADE	
------------------------	--

207.01	Description
--------	-------------

207.02	Materials
--------	-----------

207.03	General Requirements
--------	----------------------

207.04	Subgrade Treatments
--------	---------------------

207.05	Fill and Cut Sections
--------	-----------------------

(a)	Fill Sections
-----	---------------

(b)	Cut Sections
-----	--------------

207.06	Method of Measurement
--------	-----------------------

207.07	Basis of Payment
--------	------------------

TABLE OF CONTENTS

Section	Title
---------	-------

SECTION 208 – FINISHING SHOULDERS, DITCHES, AND SLOPES

- | | |
|--------|---|
| 208.01 | Description |
| 208.02 | Finishing Shoulders |
| 208.03 | Finishing Ditches |
| 208.04 | Finishing Slopes |
| 208.05 | Blank |
| 208.06 | Finishing at Contract Drainage Structures |
| 208.07 | Method of Measurement |
| 208.08 | Basis of Payment |

SECTION 209 – FINISHING EARTH GRADED ROADS

- | | |
|--------|---------------------------|
| 209.01 | Description |
| 209.02 | Construction Requirements |
| 209.03 | Method of Measurement |
| 209.04 | Basis of Payment |

SECTION 210 – FINAL TRIMMING AND CLEANING

- | | |
|--------|---------------------------|
| 210.01 | Description |
| 210.02 | Construction Requirements |
| 210.03 | Method of Measurement |
| 210.04 | Basis of Payment |

SECTION 211 – B BORROW FILL AND BACKFILL

- | | |
|--------|---------------------------------|
| 211.01 | Description |
| 211.02 | Materials |
| 211.03 | General Requirements |
| 211.04 | Mechanical Compaction |
| 211.05 | Embankment for Bridges |
| 211.06 | B Borrow Around Bents |
| 211.07 | Aggregate For End Bent Backfill |
| 211.08 | Spandrel Filling |
| 211.09 | Method of Measurement |
| 211.10 | Basis of Payment |

SECTION 212 – STOCKPILED SELECTED MATERIALS

- | | |
|--------|---------------------------|
| 212.01 | Description |
| 212.02 | Materials |
| 212.03 | Construction Requirements |
| 212.04 | Method of Measurement |
| 212.05 | Basis of Payment |

SECTION 213 – FLOWABLE BACKFILL

- | | |
|--------|--------------------------------|
| 213.01 | Description |
| 213.02 | Materials |
| 213.03 | Flowable Backfill Mix Design |
| 213.04 | Flowable Backfill Mix Criteria |
| 213.05 | Flowable Backfill Trial Batch |
| 213.06 | Mixing Equipment |
| 213.07 | Placement |
| 213.08 | Method of Measurement |
| 213.09 | Basis of Payment |

TABLE OF CONTENTS

Section	Title
---------	-------

SECTION 214 – GEOGRID

- 214.01 Description
- 214.02 Materials
- 214.03 Foundation Preparation
- 214.04 Geogrid Placement
- 214.05 Fill Placement
- 214.06 Method of Measurement
- 214.07 Basis of Payment

SECTION 215 – CHEMICAL MODIFICATION OF SOILS

- 215.01 Description
- 215.02 Materials
- 215.03 Testing and Mix Design
- 215.04 Storage and Handling
- 215.05 Weather Limitations
- 215.06 Preparation of Soils
- 215.07 Spreading of Chemical Modifiers
- 215.08 Mixing
- 215.09 Compaction
- 215.10 Method of Measurement
- 215.11 Basis of Payment

SECTION 216 – CELLULAR CONCRETE FILL, CCF

- 216.01 Description
- 216.02 Materials
- 216.03 Mix Design
- 216.04 Properties and Tests
 - (a) CCF Cast Density
 - (b) Foam Density
- 216.05 Storage and Handling
- 216.06 Weather Limitations
- 216.07 Preparation of Subgrade
- 216.08 Installation
- 216.09 Lots
- 216.10 Testing
- 216.11 Method of Measurement
- 216.12 Basis of Payment

SECTION 300 – AGGREGATE PAVEMENT AND BASES

SECTION 301 – AGGREGATE BASE

- 301.01 Description
- 301.02 Materials
- 301.03 Preparation of Subgrade
- 301.04 Temperature Limitations
- 301.05 Spreading
- 301.06 Compacting
- 301.07 Checking and Correcting Base
- 301.08 Priming
- 301.09 Method of Measurement
- 301.10 Basis of Payment

TABLE OF CONTENTS

Section Title

SECTION 302 – SUBBASE

- 302.01 Description
- 302.02 Materials
- 302.03 Preparation of Subgrade
- 302.04 Temperature Limitations
- 302.05 Spreading
- 302.06 Compacting
 - (a) Aggregate Separation Layers and Dense Graded Subbase
 - (b) Aggregate Drainage Layers
- 302.07 Checking and Correcting Subbase
- 302.08 Method of Measurement
- 302.09 Basis of Payment

SECTION 303 – AGGREGATE PAVEMENTS OR SHOULDERS

- 303.01 Description
- 303.02 Materials
- 303.03 Preparation of Subgrade
- 303.04 Temperature Limitations
- 303.05 Spreading
- 303.06 Compacting
- 303.07 Checking and Correcting Base and Surface
- 303.08 Dust Palative
- 303.09 Method of Measurement
- 303.10 Basis of Payment

SECTION 304 – ASPHALT BASES

- 304.01 Description
- 304.02 Materials
- 304.03 Sealing Cracks and Joints
- 304.04 Patching
- 304.05 Widening
- 304.06 Method of Measurement
- 304.07 Basis of Payment

SECTION 305 – CONCRETE BASES

- 305.01 Description
- 305.02 Materials
- 305.03 New PCC Base
- 305.04 Existing PCCP
 - (a) Patching
 - (b) Surface Milling
 - (c) Retro Load Transfer
 - (d) Rubblizing Existing PCCP
- 305.05 Widening With PCC Base
- 305.06 Method of Measurement
- 305.07 Basis of Payment

SECTION 306 – MILLING

- 306.01 Description
- 306.02 General
- 306.03 Equipment
 - (a) Roadway Milling Machine
 - (b) Power Saw
 - (c) Rotary Power Broom
 - (d) Straightedge
 - 1. Straightedge – 4.9 m (16 ft)
 - 2. Straightedge – 3 m (10 ft)

TABLE OF CONTENTS

Section	Title
---------	-------

306.04	Asphalt Scarification and Profile Preparation
306.05	Asphalt Milling
306.06	Asphalt Removal
306.07	PCCP Milling
306.08	Transition Milling
306.09	Method of Measurement
306.10	Basis of Payment

SECTION 307 – Blank

SECTION 308 – Blank

SECTION 309 – Blank

SECTION 310 – Blank

SECTION 400 – ASPHALT PAVEMENTS

SECTION 401 – QUALITY CONTROL/QUALITY ASSURANCE, QC/QA, HOT MIX ASPHALT, HMA, PAVEMENT

401.01	Description
401.02	Quality Control
401.03	Materials
401.04	Design Mix Formula
401.05	Volumetric Mix Design
401.06	Recycled Materials
401.07	Lots and Sublots
401.08	Job Mix Formula
401.09	Acceptance of Mixtures
401.10	General
401.11	Preparation of Surfaces to be Overlaid
401.12	Process Control
401.13	Weather Limitations
401.14	Spreading and Finishing
401.15	Joints
401.16	Density
401.17	Shoulder Corrugations
401.18	Pavement Smoothness
401.19	Pay Factors
	(a) Mixture
	(b) Density
	(c) Smoothness
401.20	Appeals
	(a) MSG
	(b) BSG of the Gyratory Specimen
	(c) Binder Content
	(d) BSG of the Density Core
401.21	Method of Measurement
401.22	Basis of Payment

SECTION 402 – HOT MIX ASPHALT, HMA, PAVEMENT

402.01	Description
402.02	Quality Control
402.03	Materials
402.04	Design Mix Formula
402.05	Volumetric Mix Design
402.06	Job Mix Formula
402.07	Mix Criteria
	(a) Composition Limits for HMA Rumble Strip Mixtures
	(b) Composition Limits for HMA Wedge and Leveling Mixtures
	(c) Composition Limits for Temporary HMA Mixtures

TABLE OF CONTENTS

Section	Title
---------	-------

(d) Composition Limits for HMA Curbing Mixes

- | | |
|--------|--|
| 402.08 | Recycled Materials |
| 402.09 | Acceptance of Mixtures |
| 402.10 | General |
| 402.11 | Preparation of Surfaces to be Overlaid |
| 402.12 | Weather Limitations |
| 402.13 | Spreading and Finishing |
| 402.14 | Joints |
| 402.15 | Compaction |
| 402.16 | Low Temperature Density Requirements |
| 402.17 | Shoulder Corrugations |
| 402.18 | Pavement Smoothness |
| 402.19 | Method of Measurement |
| 402.20 | Basis of Payment |

SECTION 403 – COLD MIX ASPHALT, CMA, PAVEMENT

- | | |
|--------|---------------------------------|
| 403.01 | Description |
| 403.02 | Materials |
| 403.03 | Weather Limitations |
| 403.04 | Equipment |
| 403.05 | Preparation of Mixtures |
| 403.06 | Preparation of Subgrade or Base |
| 403.07 | Spreading Mixture |
| 403.08 | Curing |
| 403.09 | Compaction |
| 403.10 | Surface Tolerances |
| 403.11 | Method of Measurement |
| 403.12 | Basis of Payment |

SECTION 404 – SEAL COAT

- | | |
|--------|--------------------------------|
| 404.01 | Description |
| 404.02 | Asphalt Material |
| 404.03 | Cover Aggregate |
| 404.04 | Weather Limitations |
| 404.05 | Equipment |
| 404.06 | Preparation of Surface |
| 404.07 | Applying Asphalt Material |
| 404.08 | Application of Cover Aggregate |
| 404.09 | Method of Measurement |
| 404.10 | Basis of Payment |

SECTION 405 – PRIME COAT

- | | |
|--------|---------------------------------|
| 405.01 | Description |
| 405.02 | Asphalt Material |
| 405.03 | Cover Aggregate |
| 405.04 | Weather Limitations |
| 405.05 | Equipment |
| 405.06 | Preparation of Surface |
| 405.07 | Application of Asphalt Material |
| 405.08 | Cover Aggregate |
| 405.09 | Method of Measurement |
| 405.10 | Basis of Payment |

SECTION 406 – TACK COAT

- | | |
|--------|---------------------------------|
| 406.01 | Description |
| 406.02 | Asphalt Material |
| 406.03 | Equipment |
| 406.04 | Preparation of Surface |
| 406.05 | Application of Asphalt Material |

TABLE OF CONTENTS

Section	Title
406.06	Method of Measurement
406.07	Basis of Payment
SECTION 407 – DUST PALATIVE	
407.01	Description
407.02	Asphalt Material
407.03	Weather Limitations
407.04	Equipment
407.05	Preparation of Surface
407.06	Application of Asphalt Material
407.07	Method of Measurement
407.08	Basis of Payment
SECTION 408 – SEALING CRACKS AND JOINTS	
408.01	Description
408.02	Materials
408.03	Equipment
408.04	Weather Limitations
408.05	Routing
408.06	Sealing Cracks and Joints
408.07	Method of Measurement
408.08	Basis of Payment
SECTION 409 – EQUIPMENT	
409.01	Production, Transportation, and Laydown of Asphalt Mixtures
409.02	Mixing Plant
(a)	Certified HMA Plant
(b)	CMA Mixing Plant
409.03	HMA Laydown Operations
(a)	Distributor
(b)	Hauling Equipment
(c)	Laydown Equipment
1.	Paver
2.	Widener
3.	Other Mechanical Devices
(d)	Compaction Equipment
1.	Tandem Roller
2.	Three Wheel Roller
3.	Pneumatic Tire Roller
4.	Vibratory Roller
5.	Trench Roller
6.	Specialty Roller/Compactor
(e)	Miscellaneous Equipment
1.	Aggregate Spreader
2.	Rotary Power Broom
(f)	Smoothness Equipment
1.	Profilograph
2.	Straightedge - 4.9 m (16 ft)
3.	Straightedge - 3 m (10 ft)
SECTION 410 – Blank	

TABLE OF CONTENTS

Section	Title
---------	-------

SECTION 500 – CONCRETE PAVEMENT

SECTION 501 – QUALITY CONTROL/QUALITY ASSURANCE, QC/QA, PORTLAND CEMENT CONCRETE PAVEMENT, PCCP

501.01	Description
501.02	Quality Control
501.03	Materials
501.04	Concrete Mix Design
501.05	Concrete Mix Criteria
501.06	Trial Batch
501.07	Lots and Sublots
501.08	Acceptance
501.09	General
501.10	Preparation of Grade
501.11	Preparation of Subbase
501.12	Placement
501.13	Process Control
501.14	Concrete Mixing and Transportation
501.15	Weather Limitations
501.16	Placing Concrete
501.17	CMD Adjustments
501.18	Joints
501.19	Finishing
501.20	Curing
501.21	Form Removal
501.22	Pavement Inspection
501.23	Opening to Traffic
(a)	Construction
(b)	Non-Construction
501.24	Shoulder Corrugations
501.25	Pavement Smoothness
501.26	Pavement Thickness
501.27	Tolerance
(a)	Plastic Unit Weight
(b)	Water to Cementitious Ratio
(c)	Flexural Strength
(d)	Air Content
501.28	Pay Factors
(a)	Flexural Strength
1.	Lots
2.	Sublots
(b)	Air Content
1.	Lots
2.	Sublots
(c)	Thickness
(d)	Smoothness
501.29	Appeals
(a)	Flexural Strength
(b)	Air Content
501.30	Method of Measurement
501.31	Basis of Payment

TABLE OF CONTENTS

Section Title

SECTION 502 – PORTLAND CEMENT CONCRETE PAVEMENT, PCCP

- 502.01 Description
- 502.02 Materials
- 502.03 Concrete Mix Design
- 502.04 Concrete Mix Criteria
 - (a) Portland Cement Concrete
 - (b) High-Early Strength Concrete
- 502.05 Job Control
- 502.06 General
- 502.07 Preparation of Grade
- 502.08 Preparation of Subbase
- 502.09 Placement
- 502.10 Concrete Mixing and Transportation
 - (a) Central Mixed Concrete
 - (b) Shrink Mixed Concrete
 - (c) Transit Mixed Concrete
- 502.11 Weather Limitations
- 502.12 Placing Concrete
- 502.13 Joints
- 502.14 Finishing
- 502.15 Curing
- 502.16 Form Removal
- 502.17 Pavement Inspection
- 502.18 Opening to Traffic
 - (a) Construction
 - (b) Non-Construction
- 502.19 Shoulder Corrugations
- 502.20 Pavement Smoothness
- 502.21 Pavement Thickness
 - (a) Sections
 - (b) Average PCCP Thickness
 - (c) PCCP Adjusted Payment
 - (d) PCCP Non-Payment
 - (e) PCCP Removal
- 502.22 Method of Measurement
- 502.23 Basis of Payment

SECTION 503 – PCCP JOINTS

- 503.01 Description
- 503.02 Materials
- 503.03 Joints
 - (a) Type D-1 Contraction Joint
 - (b) Longitudinal Joint
 - (c) Transverse Construction Joints
 - (d) Longitudinal Construction Joint
 - (e) Terminal Joints
 - (f) Expansion Joints
 - (g) Retrofitted Tie Bars
- 503.04 Dowel Bar Assemblies
- 503.05 Sealing Cracks and Joints
- 503.06 Random Crack Remediation
 - (a) Transverse
 - (b) Longitudinal
- 503.07 Method of Measurement
- 503.08 Basis of Payment

TABLE OF CONTENTS

Section	Title
---------	-------

SECTION 504 – PCCP FINISHING AND CURING

- 504.01. Description
- 504.02 Materials
- 504.03 Finishing
- 504.04 Curing
 - (a) Liquid Membrane Forming Compounds
 - (b) Double Burlap
 - (c) Waterproof Covers
 - (d) Straw
- 504.05 Method of Measurement
- 504.06 Basis of Payment

SECTION 505 – TESTS AND PROCEDURES

- 505.01 Test Methods and Procedures
 - (a) Exceptions to AASHTO T 23
 - (b) Exceptions to AASHTO T 97
 - (c) Exceptions to AASHTO T 121
 - (d) Exceptions to AASHTO T 141
 - (e) Exceptions to AASHTO T 152

SECTION 506 – PCCP PATCHING

- 506.01 Description
- 506.02 Materials
- 506.03 Concrete Mix Design
- 506.04 Concrete Mix Criteria
- 506.05 Trial Batch
- 506.06 Job Control
- 506.07 PCCP Removal
 - (a) Partial Depth Removal
 - (b) Full Depth Removal
- 506.08 Concrete Mixing and Transportation
 - (a) Central Mixed Concrete
 - (b) Shrink Mixed Concrete
 - (c) Transit Mixed Concrete
- 506.09 Weather Limitations
- 506.10 Placing Concrete
 - (a) Partial Depth
 - (b) Full Depth
- 506.11 Opening to Traffic
- 506.12 Method of Measurement
- 506.13 Basis of Payment

SECTION 507 – PCCP RESTORATION

- 507.01 Description
- 507.02 Materials
- 507.03 Routing Cracks and Joints
- 507.04 Sealing Cracks and Joints
- 507.05 PCCP Patching
 - (a) Full Depth Patching
 - (b) Partial Depth Patching
- 507.06 Profiling
- 507.07 Undersealing
- 507.08 Retrofit Load Transfer for PCCP
- 507.09 Method of Measurement
- 507.10 Basis of Payment

TABLE OF CONTENTS

Section Title

SECTION 508 – EQUIPMENT

508.01 Production, Transportation, and Placement of PCC Mixtures

508.02 Mixing Plant.

(a) Plant Inspection

(b) Proportioning System

(c) Material Storage

1. Aggregates

2. Cementitious Materials

3. Admixtures

(d) Hoppers

(e) Mixing System

1. Central or Stationary Mixers

2. Truck Mixers

508.03 Transportation

(a) Truck Mixers and Truck Agitators

(b) Non-Agitator Trucks

508.04 Placement Equipment

(a) Slipform

(b) Form Riding Equipment

(c) Hand Placement

1. Steel Forms

2. Wood Forms

3. Finishing Equipment

4. Vibrators

508.05 Curing

508.06 Texturing Equipment

508.07 Sawing Equipment

508.08 Miscellaneous Equipment

(a) Hand Tools

(b) Joint Sealing

(c) Grinding

508.09 Testing Facility and Equipment

(a) Testing Facility

(b) Testing Equipment

(c) Profilograph

(d) Straightedge - 4.9 m (16 ft)

(e) Straightedge - 3 m (10 ft)

SECTION 600 – INCIDENTAL CONSTRUCTION

SECTION 601 – GUARDRAIL

601.01 Description

601.02 Materials

601.03 General Requirements

601.04 Guardrail Erection

601.05 Curved W-Beam Guardrail Systems

601.06 Guardrail Transitions

601.07 Guardrail End Treatments

601.07.1 Impact Attenuators

601.08 Extension of Existing Guardrail

601.09 Removal of Existing Guardrail

601.10 Adjusting Existing Guardrail Height

601.11 Resetting Guardrail

601.12 Method of Measurement

601.13 Basis of Payment

TABLE OF CONTENTS

Section	Title
---------	-------

SECTION 602 – CONCRETE BARRIER

- 602.01 Description
- 602.02 Materials
- 602.03 Concrete Barrier and Concrete Glare Screen
 - (a) Precast Concrete Barrier and Concrete Glare Screen
 - (b) Cast-in-Place Concrete Barrier and Concrete Glare Screen
 - (c) Finishing
 - (d) Sealing
 - (e) Joints
 - (f) Reflectorization
- 602.04 Blank
- 602.05 Method of Measurement
- 602.06 Basis of Payment

SECTION 603 – FENCES

- 603.01 Description
- 603.02 Materials
- 603.03 General Requirements
- 603.04 Setting Posts
- 603.05 Placing Barbed and Tension Wire and Fabric
- 603.06 Resetting Fence
- 603.07 Method of Measurement
- 603.08 Basis of Payment

SECTION 604 – SIDEWALKS, CURB RAMPS, STEPS, AND HANDRAILS

- 604.01 Description
- 604.02 Materials
- 604.03 Portland Cement Concrete Sidewalks and Curb Ramps
 - (a) General Requirements
 - (b) Excavation
 - (c) Forms
 - (d) Placing Concrete
 - (e) Finishing
 - (f) Joints
 - (g) Detectable Warning Elements
 - (h) Curing
 - (i) Painting
- 604.04 PCC Steps
- 604.05 Reconstructed PCC Sidewalk
- 604.06 Re-Laid Sidewalk
- 604.07 HMA Sidewalk
 - (a) Excavation and Forms
 - (b) Bed Course
 - (c) Placing HMA Sidewalk
- 604.08 Backfilling and Finishing Shoulders and Slopes
- 604.09 Hand Rails
- 604.10 Method of Measurement
- 604.11 Basis of Payment

SECTION 605 – CURBING

- 605.01 Description
- 605.02 Materials
- 605.03 Precast Cement Concrete Curbing
 - (a) Excavation
 - (b) Installation
 - (c) Joints
 - (d) Backfilling

TABLE OF CONTENTS

Section	Title
---------	-------

605.04	Cast in Place Cement Concrete Curbing
--------	---------------------------------------

- | | |
|-----|--|
| (a) | Excavation |
| (b) | Forms |
| (c) | Proportioning and Placing |
| (d) | Curb Turnouts and Combined Concrete Curb and Gutter Turnouts |
| (e) | Joints |
| (f) | Curing |
| (g) | Backfilling |
| (h) | Curb Machine |

605.05	Reflecting Cement Concrete Curbing
--------	------------------------------------

605.06	Cement Concrete Center Curbing
--------	--------------------------------

605.07	HMA Curbing
--------	-------------

- | | |
|-----|----------------------|
| (a) | Excavation |
| (b) | Preparation of Bed |
| (c) | Mixture |
| (d) | Placing |
| (e) | Painting and Sealing |

605.08	Resetting Curbing
--------	-------------------

- | | |
|-----|--------------------|
| (a) | Salvage of Curbing |
| (b) | Curb Removal |
| (c) | Excavation |
| (d) | Resetting |
| (e) | Backfilling |

605.09	Method of Measurement
--------	-----------------------

605.10	Basis of Payment
--------	------------------

SECTION 606 – SHOULDER CORRUGATIONS

606.01	Description
--------	-------------

606.02	Method of Measurement
--------	-----------------------

606.03	Basis of Payment
--------	------------------

SECTION 607 – PAVED SIDE DITCH OR CONCRETE GUTTER

607.01	Description
--------	-------------

607.02	Materials
--------	-----------

607.03	General Requirements
--------	----------------------

607.04	Cement Concrete Gutter and Turnout
--------	------------------------------------

607.05	Method of Measurement
--------	-----------------------

607.06	Basis of Payment
--------	------------------

SECTION 608 – SHOULDER DRAINS

608.01	Description
--------	-------------

608.02	Materials
--------	-----------

608.03	General Requirements
--------	----------------------

608.04	Method of Measurement
--------	-----------------------

608.05	Basis of Payment
--------	------------------

SECTION 609 – REINFORCED CONCRETE BRIDGE APPROACHES

609.01	Description
--------	-------------

609.02	Materials
--------	-----------

609.03	General Requirements
--------	----------------------

609.04	Forms
--------	-------

609.05	Joints
--------	--------

609.06	Reinforcing Bars
--------	------------------

609.07	Thickness
--------	-----------

609.08	Concrete Placement
--------	--------------------

609.09	Finishing
--------	-----------

609.10	Curing
--------	--------

609.11	Smoothness
--------	------------

609.12	Opening to Traffic
--------	--------------------

TABLE OF CONTENTS

Section	Title
609.13	Method of Measurement
609.14	Basis of Payment
SECTION 610 – APPROACHES AND CROSSEOVERS	
610.01	Description
610.02	Materials
610.03	General Requirements
610.04	Existing Approaches and Crossovers
610.05	Method of Measurement
610.06	Basis of Payment
SECTION 611 – MAILBOX INSTALLATIONS	
611.01	Description
611.02	Materials
611.03	Mailbox Assembly
611.04	Method of Measurement
611.05	Basis of Payment
SECTION 612 – UNDERSEALING	
612.01	Description
612.02	Materials
612.03	Shoulders
612.04	Drilled Holes
612.05	Pumping Asphalt
612.06	Method of Measurement
612.07	Basis of Payment
SECTION 613 – SALVAGED ROAD MATERIALS	
613.01	Description
613.02	Materials
613.03	Construction Requirements
613.04	Method of Measurement
613.05	Basis of Payment
SECTION 614 – CONCRETE HEADER	
614.01	Description
614.02	Materials
614.03	PCC Header
614.04	Reconstructed Cement Concrete Header
614.05	Method of Measurement
614.06	Basis of Payment
SECTION 615 – MONUMENTS, MARKERS AND PARKING BARRIERS	
615.01	Description
615.02	Materials
615.03	Reinforced Cement Concrete Right-of-Way Markers
615.04	Monuments
615.05	Bench Mark Posts
615.06	Parking Barriers
615.07	Setting Right-of-Way Markers
615.08	Resetting Right-of-Way Markers
615.09	Setting Monuments
615.10	Re-Established Monuments
615.11	Setting Bench Mark Posts and Tablets
615.12	Reset Bench Mark Posts
615.13	Method of Measurement
615.14	Basis of Payment

TABLE OF CONTENTS

Section Title

SECTION 616 – RIPRAP AND SLOPEWALL

- 616.01 Description
- 616.02 Materials
- 616.03 Placing Dumped Riprap
- 616.04 Placing Grouted Riprap
- 616.05 Placing Revetment, Class 1, and Class 2 Riprap
- 616.06 Placing Uniform Riprap
- 616.07 Blank
- 616.08 Placing Precast Cement Concrete Riprap
- 616.09 Slopewall
 - 616.09.1 Undermined Paved Side Ditch
- 616.10 Installation of Geotextile Under Riprap
- 616.11 Method of Measurement
- 616.12 Basis of Payment

SECTION 617 – GEOGRID FOR SUBGRADE STABILIZATION OR MODIFICATION

- 617.01 Description
- 617.02 Materials
- 617.03 Foundation Preparation
- 617.04 Geogrid Placement
- 617.05 Fill Placement
- 617.06 Method of Measurement
- 617.07 Basis of Payment

SECTION 618 – Blank

SECTION 619 – PAINTING BRIDGE STEEL

- 619.01 Description
- 619.02 Materials
- 619.03 Quality Control and Quality Assurance
 - (a) Acceptance Testing Definitions
 - 1. Lot
 - 2. Series
 - 3. Phase
 - (b) Testing Procedure
 - (c) Test Methods and Procedures
- 619.04 Prosecution of Work
- 619.05 Inspection Access to Bridges
- 619.06 Maintaining Traffic
- 619.07 Environmental and Safety Requirements
 - (a) Pollution Control
 - (b) Waste Disposal
 - 1. Laws to be Observed
 - 2. Time Limitations
 - 3. Marking of Spent Material Containers
 - 4. Instruction for Disposal of Paint Waste
 - 5. Instructions for Disposal of Other Project Generated Waste
- 619.08 Surface Preparation
 - (a) Pressure Washing
 - (b) Solvent Cleaning
 - (c) Near-White Blast Cleaning
 - (d) Commercial Blast Cleaning
 - (e) Hand Tool Cleaning.
 - (f) Brush-Off Blast Cleaning
 - (g) Power Tool Cleaning
 - (h) Power Tool Cleaning to Bare Metal

TABLE OF CONTENTS

Section	Title
---------	-------

619.09	Paint Systems
--------	---------------

- | | |
|-----|-------------------------------|
| (a) | Structural Steel Paint System |
| (b) | Partial Paint System |

619.10	Painting
--------	----------

- | | |
|-----|------------------------|
| (a) | Weather Limitations |
| (b) | Storage |
| (c) | Mixing |
| (d) | Thinning |
| (e) | Application of Paint |
| (f) | Curing Time |
| (g) | Stencil Identification |

619.11	Shop Painting
--------	---------------

619.12	Field Painting New Steel Bridge
--------	---------------------------------

619.13	Painting Existing Steel Bridges
--------	---------------------------------

619.14	Drain Castings Treatment
--------	--------------------------

619.15	Claims
--------	--------

619.16	Responsibility for Damage
--------	---------------------------

619.17	Method of Measurement
--------	-----------------------

619.18	Basis of Payment
--------	------------------

SECTION 620 – Blank

SECTION 621 – SEEDING AND SODDING

621.01	Description
--------	-------------

621.02	Materials
--------	-----------

621.03	Preparation of Ground Before Seeding
--------	--------------------------------------

621.04	Preparation of Ground Before Applying Erosion Control Blankets
--------	--

621.05	Applying Fertilizer, Seed, and Mulch
--------	--------------------------------------

- | | |
|-----|----------------------------|
| (a) | Fertilizer |
| (b) | Seed |
| (c) | Mulch |
| 1. | Method A |
| 2. | Method B |
| 3. | Method C |
| 4. | Method D |
| 5. | Method E |
| (d) | Excelsior Blankets |
| (e) | Paper Mat |
| (f) | Straw Mat |
| (g) | Wood Cellulose Fiber Mulch |

621.06	Seed Mixtures
--------	---------------

- | | |
|-----|---------------------|
| (a) | Seed Mixture R |
| (b) | Seed Mixture U |
| (c) | Seed Mixture P |
| (d) | Blank |
| (e) | Seed Mixture D |
| (f) | Seed Mixture T |
| 1. | Spring Mix |
| 2. | Fall Mix |
| (g) | Seed Mixture Grass |
| 1. | Type 1 |
| 2. | Type 2 |
| (h) | Seed Mixture Legume |
| 1. | Type 1 |
| 2. | Type 2 |

TABLE OF CONTENTS

Section Title

- 621.07 Mulched Seeding
- 621.08 Preparation of Ground Before Sodding
- 621.09 Laying Sod
- 621.10 Watering Sod
- 621.10.1 Seeding or Sodding Disturbed Areas Outside Construction Limits
- 621.11 Seasonal Limitations
- 621.12 Method of Measurement
- 621.13 Basis of Payment
 - (a) Warranty Bond
 - (b) Changed Fertilizer
 - (c) Mulching

SECTION 622 – PLANTING TREES, SHRUBS, AND VINES

- 622.01 Description
- 622.02 Materials
- 622.03 Care and Handling of Plants
 - (a) Bare Rooted Plants
 - (b) Balled and Burlapped Plants and Container Grown Plants
- 622.04 Collected Plants
- 622.05 Excavation for Plant Holes
- 622.06 Planting Season
- 622.07 Pruning
- 622.08 Planting, Backfilling, and Watering
 - (a) Plants with Bare Roots
 - (b) Balled and Burlapped Plants
 - (c) Seedlings for Wildlife Habitat
- 622.09 Liquid Fertilizer Application
- 622.10 Mulching
- 622.11 Guying and Staking
- 622.12 Plant Protection
 - (a) Borer Control Coatings
 - (b) Wrapping for Rodent Protection
- 622.13 Retaining Walls and Tree Wells
- 622.14 Tree Root Protection
- 622.15 Pipe Underdrains
- 622.16 Damage to Plants
- 622.17 Grass and Weed Control
- 622.18 Care, Inspection, and Replacement
 - (a) Care
 - (b) Inspection and Replacement
- 622.19 Crown Vetch Plants and Seedlings
- 622.20 "Do Not Mow or Spray" Signs and "Do Not Disturb" Signs
- 622.21 Method of Measurement
- 622.22 Basis of Payment

SECTION 700 – STRUCTURES

SECTION 701 – DRIVEN PILING

- 701.01 Description
- 701.02 Materials
- 701.03 Handling of Epoxy Coated Piles

TABLE OF CONTENTS

Section	Title
701.04	Equipment for Driving Piles
(a)	Approval of Pile Driving Equipment
1.	Wave Equation Analysis Method
2.	Alternate Method
(b)	Pile Hammers
1.	Gravity Hammers
2.	Steam and Air Hammers
3.	Diesel Hammers
4.	Pile Driving Aids
(c)	Pile Driving Appurtenance
1.	Hammer Cushion
2.	Pile Drive Head
3.	Pile Cushion
4.	Leads
5.	Followers
6.	Jets
701.05	Test Piles
701.06	Driven Pile Capacity
(a)	Wave Equation Analysis Program, or WEAP
(b)	Dynamic Formula
(c)	Dynamic Pile Load Test
(d)	Static Load Test
1.	Load Test Procedure
2.	Hydraulic Jacks and Load Gages
3.	General Requirements
701.07	Piling Length
701.08	Required Bearing Capacity
701.09	Preparation and Driving
(a)	Pilot Holes
(b)	Location and Alignment Tolerance
(c)	Heaved Piles
(d)	Installation Sequence
(e)	Inspection
(f)	Pouring Concrete
701.10	Unsatisfactory Piles
701.11	Splicing Piles
701.12	Steel H Pile Tips
701.13	Cut-Off Lengths
701.14	Method of Measurement
701.15	Basis of Payment
(a)	Timber Piles Furnished
(b)	Timber Piles Driven
(c)	Epoxy Coated Piles
SECTION 702 – STRUCTURAL CONCRETE	
702.01	Description
702.02	Classes of Concrete
702.03	Materials
702.04	Shipping and Storage
702.05	Proportioning
702.06	Batching
(a)	Portland Cement
(b)	Water
(c)	Aggregates
(d)	Bins and Scales
(e)	Batching
702.07	Mixing

TABLE OF CONTENTS

Section	Title
702.08	Mixing at Site of Work
702.09	Ready-Mixed Concrete
(a)	General Requirements
(b)	Mixers and Agitators
(c)	Mixing and Delivery
(d)	Non-Agitating Equipment
702.10	Pumping Concrete
702.11	Cold Weather Concrete
702.12	Consistency
702.13	Forms
(a)	Construction
(b)	Ties
(c)	Walls
(d)	Surface Treatment
(e)	Metal Forms
1.	Removable
2.	Permanent
(f)	Precast Concrete Deck Panels
(g)	Removal and Re-Use of Forms
(h)	Test Beams
702.14	Falsework and Centering
(a)	Design and Construction
(b)	Removal
702.15	Joints
(a)	Construction Joints
(b)	Expansion Joints
(c)	Folded Metal Joints
(d)	Sliding Joints
702.16	Drainage Pipes Through Concrete Masonry
702.17	Incased Pipes and Conduits
702.18	Roadway Surface Drainage
702.19	Pouring Bent Caps
702.20	Placing Concrete
(a)	General Requirements
(b)	Chutes and Troughs
(c)	Vibrating
(d)	Depositing Concrete Under Water
(e)	Placing Footing Concrete
(f)	Concrete Foundation Seal
702.21	Finishing Concrete Surfaces
702.22	Curing Concrete
(a)	Protective Covering Curing Methods
(b)	Membrane Forming Curing Compound
(c)	Curing-Sealing Materials
702.23	Waterproofing
702.24	Application of Loads to and Acceptance of New Concrete
702.25	Field Drilled Holes in Concrete
702.26	Artificial Lighting
702.27	Method of Measurement
702.28	Basis of Payment
SECTION 703 – REINFORCING BARS	
703.01	Description
703.02	Materials
703.03	Bar List
703.04	Protection of Materials
703.05	Bending

TABLE OF CONTENTS

Section	Title
---------	-------

703.06	Placing and Fastening
703.07	Method of Measurement
703.08	Basis of Payment

SECTION 704 – CONCRETE FLOOR SLABS

704.01	Description
704.02	Materials
704.03	Forms
704.04	Placing Reinforcement and Concrete
704.05	Finishing Concrete
704.06	Curing
704.07	Method of Measurement
704.08	Basis of Payment

SECTION 705 – SIDEWALKS ON STRUCTURES

705.01	Description
705.02	Materials
705.03	Construction Requirements
705.04	Method of Measurement
705.05	Basis of Payment

SECTION 706 – BRIDGE RAILINGS

706.01	Description
706.02	Materials
706.03	Concrete Railing
706.04	Steel Railings
706.05	Method of Measurement
706.06	Basis of Payment

SECTION 707 – PRECAST AND PRESTRESSED CONCRETE STRUCTURAL MEMBERS

707.01	Description
707.02	Materials
707.03	General Requirements
707.04	Steel and Concrete Requirements
(a)	Reinforcing Steel
(b)	Welding Reinforcing Steel
(c)	Concrete
707.05	Forms
707.06	Placing and Finishing Cement Concrete
707.07	Removal of Forms and Curing
707.08	Handling and Shipping
707.09	Placing Structural Members
707.09.1	Precast Prestressed Concrete Deck Panels
707.10	Method of Measurement
707.11	Basis of Payment

SECTION 708 – PNEUMATICALLY PLACED MORTAR

708.01	Description
708.02	Materials
708.03	Preparing Surface
708.04	Reinforcement
708.05	Proportioning and Mixing
708.06	Placing Mortar
708.07	Finishing
708.08	Method of Measurement
708.09	Basis of Payment

TABLE OF CONTENTS

Section	Title
---------	-------

SECTION 709 – PORTLAND CEMENT CONCRETE SEALERS

- | | |
|--------|--|
| 709.01 | Description |
| 709.02 | Materials |
| 709.03 | Surface Preparation |
| 709.04 | Environmental Requirements |
| (a) | General Requirements |
| (b) | Epoxy Penetrating Sealers |
| (c) | Other Portland Cement Concrete Sealers |
| (d) | Low Temperature Epoxy Penetrating Sealer |
| 709.05 | Sealer Application |
| (a) | General Requirements |
| (b) | Epoxy Penetrating Sealer |
| (c) | Other Portland Cement Concrete Sealers |
| (d) | Clear Sealers |
| (e) | Alternate To Concrete Sealers |
| 709.06 | Safety Precautions |
| 709.07 | Method of Measurement |
| 709.08 | Basis of Payment |

SECTION 710 – REPOINTING MASONRY IN STRUCTURES

- | | |
|--------|--|
| 710.01 | Description |
| 710.02 | Materials |
| 710.03 | Repointing Concrete Masonry |
| 710.04 | Repointing Rubble Masonry |
| 710.05 | Repointing Dressed Stone and Brick Masonry |
| 710.06 | Method of Measurement |
| 710.07 | Basis of Payment |

SECTION 711 – STEEL STRUCTURES

- | | |
|--------|--|
| 711.01 | Description |
| 711.02 | Materials |
| 711.03 | General Requirements |
| 711.04 | Certification of Fabricators |
| 711.05 | Shop Drawings |
| 711.06 | Storage of Materials |
| 711.07 | Mill Orders and Shipping Statements |
| 711.08 | Mill Test Reports |
| 711.09 | Notice of Beginning Work |
| 711.10 | Facilities for Inspection |
| 711.11 | Straightening Material |
| 711.12 | Finish |
| 711.13 | Flame Cutting |
| 711.14 | Edge Planing |
| 711.15 | Abutting Joints |
| 711.16 | End Connection Angles |
| 711.17 | Blank |
| 711.18 | Blank |
| 711.19 | Bent Plates |
| 711.20 | Fit of Stiffeners |
| 711.21 | Bolt Holes |
| (a) | High Tensile Strength Bolts, and Unfinished Bolts |
| (b) | Ribbed Bolts, Turned Bolts, or other Approved Bearing-Type Bolts |
| 711.22 | Punched Holes |
| 711.23 | Reamed or Drilled Holes |
| 711.24 | Subpunching and Reaming of Field Connections |
| 711.25 | Accuracy of Punched or Subdrilled Holes |
| 711.26 | Accuracy of Reamed Holes and Holes Drilled Full Size |

TABLE OF CONTENTS

Section	Title
711.27	Fitting for Bolting
711.28	Filler Plates
711.29	Toothed Expansion Plates
711.30	Blank
711.31	Blank
711.32	Welds
(a)	AWS Requirements
(b)	Edge Blocks
711.33	Stud Shear Connectors
711.34	Annealing and Stress Relieving
711.35	Eyebars
711.36	Facing of Bearing Surfaces
711.37	Pins and Rollers
711.38	Boring Pin Holes
711.39	Pin Clearances
711.40	Threads for Bolts and Pins
711.41	Pilot and Driving Nuts
711.42	Finishing Cast Steel
711.43	Finished Members
711.44	Shop Assembling
(a)	Full Truss or Girder Assembly
(b)	Progressive Beam or Girder Assembly
(c)	Full Chord Assembly
(d)	Progressive Chord Assembly
(e)	Special Complete Structure Assembly
711.45	Drifting of Holes
711.46	Match Marking
711.47	Shop Cleaning and Painting
711.47.1	Shop Cleaning and Storage of ASTM A 709M Grade 345W (ASTM A 709 Grade 50W) Steel
(a)	Hot Rolled Products
(b)	Welded Areas
711.48	Furnishing Bolts
711.49	Weighing of Members
711.50	Full Size Tests
711.51	Acceptance
711.52	Shipping
711.53	General Requirements
711.54	Delivery of Materials
711.55	Handling and Storing
711.56	Falsework
711.57	Bearings and Anchorages
711.58	Field Straightening Material
711.59	Field Assembly of Steel
711.60	Misfits
711.61	Pin Connections
711.62	Blank
711.62.1	Diaphragm Connections
711.63	Bolted Connections Using High Strength Bolts
(a)	General
(b)	Bolts, Nuts, and Washers
(c)	Bolted Parts
(d)	Installation
1.	Bolt Tension
2.	Washers
3.	Calibrated Wrench Tightening
4.	Turn-of-Nut Tightening
(e)	Inspection

TABLE OF CONTENTS

Section Title

- 711.64 Bolted Connections Using Other Than High Strength Bolts
- 711.65 Final Clean-Up
- 711.66 Structural Steel Cutting, Rivet and Bolt Removal, and Drilled Bolt Holes in Repair Projects
- 711.67 Jacking and Supporting Beams
- 711.67.1 Field Cleaning and Storage of ASTM A 709M Grade 345W (ASTM A 709 Grade 50W) Steel
- 711.68 Painting
- 711.69 Method of Measurement
- 711.70 Basis of Payment
 - (a) Lump Sum Basis
 - (b) Unit Weight Basis

SECTION 712 – TIMBER STRUCTURES

- 712.01 Description
- 712.02 Materials
- 712.03 General Requirements
- 712.04 Caps
- 712.05 Stringers
- 712.06 Bents
- 712.07 Wheel Guards and Railings
- 712.08 Painting
- 712.09 Single-Ply Plank Floors
- 712.10 Two-Ply Plank Floors
- 712.11 Method of Measurement
- 712.12 Basis of Payment

SECTION 713 – TEMPORARY BRIDGES AND APPROACHES

- 713.01 Description
- 713.02 Materials
- 713.03 General Requirements
- 713.04 Temporary Bridge
- 713.05 Temporary Approaches
- 713.06 Maintenance
- 713.07 Removal
- 713.08 Method of Measurement
- 713.09 Basis of Payment

SECTION 714 – CONCRETE CULVERTS AND RETAINING WALLS

- 714.01 Description
- 714.02 Materials
- 714.03 General Requirements
- 714.04 Extension of Existing Culverts
 - (a) Precast Concrete Box Sections Extension
 - (b) Cast-In-Place Concrete Culvert Extension
- 714.04.1 Precast Reinforced Concrete Box Section Joints
- 714.05 Sealing Existing Culverts
- 714.06 Method of Measurement
- 714.07 Basis of Payment

SECTION 715 – PIPE CULVERTS, AND STORM AND SANITARY SEWERS

- 715.01 Description
- 715.02 Materials
 - (a) Type 1 Pipe
 - (b) Type 2 Pipe
 - (c) Type 3 Pipe
 - (d) Type 4 Pipe
 - (e) Type 5 Pipe

TABLE OF CONTENTS

Section	Title
	(f) Slotted Drain Pipe
	(g) Slotted Vane Drain Pipe
	(h) End Bent Drain Pipe
	(i) Underdrain Outlet Pipe
	(j) Grated Box End Sections
715.02.1	General Requirements
715.03	Excavation
715.04	Laying Pipe
715.05	Joining Pipe
715.06	Tee and Stub-Tee Connections
715.07	Blank
715.08	Backfilling
715.09	Pipe End Sections, Anchors, Grated Box End Sections, and Safety Metal End Sections
715.10	Re-Laid Pipe
715.11	Method of Measurement
715.12	Basis of Payment
SECTION 716 – TRENCHLESS PIPE INSTALLATION	
716.01	Description
716.02	Materials
716.03	General Requirements
716.04	Method of Measurement
716.05	Basis of Payment
SECTION 717 – STRUCTURAL PLATE PIPE, PIPE-ARCHES, AND ARCHES	
717.01	Description
717.02	Materials
717.03	General Requirements
717.04	Backfill
717.05	Re-Laid Pipe and Pipe-Arch
717.06	Blank
717.07	Concrete Paved Inverts
717.08	Method of Measurement
717.09	Basis of Payment
SECTION 718 – UNDERDRAINS	
718.01	Description
718.02	Materials
718.03	Pipe Installation
718.04	Geotextile
718.05	Underdrain Outlets
718.06	Underdrain Outlet Protectors
718.07	Video Inspection
718.08	Method of Measurement
718.09	Basis of Payment
SECTION 719 – TILE DRAINS	
719.01	Description
719.02	Materials
719.03	Trench Excavation
719.04	Laying Tile
719.05	Backfilling
719.06	Blank
719.07	Method of Measurement
719.08	Basis of Payment
SECTION 720 – MANHOLES, INLETS, AND CATCH BASINS	
720.01	Description
720.02	Materials
720.03	General Requirements

TABLE OF CONTENTS

Section Title

720.04 Grade Adjustment of Existing Structures
720.05 Method of Measurement
720.06 Basis of Payment

SECTION 721 – AUTOMATIC DRAINAGE GATES

721.01 Description
721.02 Materials
721.03 Construction Requirements
721.04 Method of Measurement
721.05 Basis of Payment

SECTION 722 – LATEX MODIFIED CONCRETE BRIDGE DECK OVERLAYS

722.01 Description
722.02 Materials
722.03 Storage and Handling of Materials
722.04 Proportioning
722.05 Preparation of the Bridge Floor
 (a) Concrete Removal
 1. Deck Surface
 2. Bridge Floor
 (b) Cleaning
722.06 Patching of the Bridge Floor
 (a) Full Depth Patching
 1. Patching with Bridge Deck Patching Concrete
 2. Patching with Latex Modified Concrete
 (b) Partial Depth Patching
 1. Patching with Bridge Deck Patching Concrete
 2. Patching with Latex Modified Concrete
722.06.1 Overlay Dam
722.07 Mixing
722.08 Placing and Finishing
722.09 Texturing
722.10 Curing
722.11 Calibration of Continuous Mixers
 (a) Frequency
 (b) Equipment
 (c) Pre-calibration
 (d) Calibration
 1. Cement Meter
 2. Water Flow Meter
 3. Aggregate Bin Gates
 4. Latex Throttling Valve
 5. Admixture Dispensers
722.12 Patching an Existing Bridge Deck Overlay
 (a) Materials
 (b) Storage and Handling of Materials
 (c) Proportioning
 (d) Preparation of the Bridge Floor
 (e) Patching
 (f) Mixing
 (g) Placing and Finishing
 (h) Texturing
 (i) Curing
 (j) Calibration of Continuous Mixers
722.13 Method of Measurement
722.14 Basis of Payment

SECTION 723 – Blank

TABLE OF CONTENTS

Section Title

SECTION 724 – STRUCTURAL EXPANSION JOINTS

724.01 Description

- (a) Structural Expansion Joint
- (b) Replacement of Existing Structural Expansion Joint
- (c) Replacement of Existing Structural Expansion Joint Seal

724.02 Materials

- (a) Expansion Joint SS
- (b) Expansion Joint M

724.03 General Requirements

- (a) Expansion Joint SS
- (b) Expansion Joint BS
- (c) Expansion Joint M
- (d) Replacement of Existing Structural Expansion Joint
- (e) Replacement of Existing Structural Expansion Joint Seal

724.04 Method of Measurement

724.05 Basis of Payment

SECTION 725 – SLIP LINING OF EXISTING PIPE

725.01 Description

725.02 Materials

725.03 Construction Requirements

- (a) Right-of-Entry Areas
- (b) Filling of Cavities Outside the Existing Pipe
- (c) Liner Installation

725.04 Method of Measurement

725.05 Basis of Payment

SECTION 800 – TRAFFIC CONTROL DEVICES AND LIGHTING

SECTION 801 – TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE OPERATIONS

801.01 Description

801.02 Materials

801.03 General Requirements

801.04 Construction Signs

- (a) Type A
- (b) Type B
- (c) Type C
- (d) Type D
- (e) Temporary Panel Sign

801.05 Detour Route Marker Assembly

801.06 Road Closure Sign Assembly

801.07 Barricades

- (a) Type III-A Barricade
- (b) Type III-B Barricade
- (c) Permanent Type III Barricade

801.08 Cones and Tubular Markers

801.09 Drums

801.10 Temporary Concrete Barrier

- (a) Placement
- (b) Connection
- (c) Anchorage
- (d) Delineation

801.11 Temporary Crossovers

TABLE OF CONTENTS

Section	Title
---------	-------

801.12	Temporary Pavement Marking
--------	----------------------------

(a)	Temporary Pavement Marking Materials
-----	--------------------------------------

1.	Paint
----	-------

2.	Temporary Pavement Marking Tape
----	---------------------------------

a.	Type I
----	--------

b.	Type II
----	---------

3.	Temporary Raised Pavement Marker
----	----------------------------------

4.	Temporary Buzz Strips
----	-----------------------

(b)	Quality Assurance Unit
-----	------------------------

801.13	Temporary Illumination
--------	------------------------

801.14	Construction Warning Lights
--------	-----------------------------

(a)	Type A
-----	--------

(b)	Type B
-----	--------

(c)	Type C
-----	--------

(d)	Vehicle Warning Lights
-----	------------------------

801.15	Electronic Devices
--------	--------------------

(a)	Flashing Arrow Sign
-----	---------------------

(b)	Changeable Message Signs
-----	--------------------------

(c)	Temporary Worksite Speed Limit Sign Assembly
-----	--

(d)	Temporary Traffic Signals
-----	---------------------------

801.16	Temporary Traffic Control Zone
--------	--------------------------------

(a)	Temporary Traffic Control Signs
-----	---------------------------------

(b)	Maintenance of Traffic for Mobile Operations
-----	--

(c)	Traffic Control for Temporary Traffic Stoppage
-----	--

1.	On Multi-Lane Divided Highways
----	--------------------------------

2.	On Non-Divided Highways
----	-------------------------

801.17	Method of Measurement
--------	-----------------------

801.18	Basis of Payment
--------	------------------

SECTION 802	SIGNS
-------------	-------

802.01	Description
--------	-------------

802.02	Materials
--------	-----------

802.03	Location of Signs and Sign Structures
--------	---------------------------------------

802.04	Shop Drawings
--------	---------------

802.05	Excavation and Backfill
--------	-------------------------

802.06	Placing Concrete
--------	------------------

802.07	Installing Supports
--------	---------------------

(a)	Posts
-----	-------

(b)	Structural Frames
-----	-------------------

1.	Trusses
----	---------

2.	Monotube
----	----------

3.	Cantilever Arms
----	-----------------

4.	Bridge Brackets
----	-----------------

802.08	Installing Signs
--------	------------------

(a)	Sheet Signs
-----	-------------

(b)	Panel Signs
-----	-------------

802.09	Removal or Relocation of Signs or Support Assemblies
--------	--

802.10	Roadway and Bridge Reference Signs
--------	------------------------------------

802.11	Method of Measurement
--------	-----------------------

802.12	Basis of Payment
--------	------------------

SECTION 803	WELDING ALUMINUM ALLOYS
-------------	-------------------------

803.01	Description
--------	-------------

803.02	Materials
--------	-----------

TABLE OF CONTENTS

Section	Title
---------	-------

803.03	Welding Processes
--------	-------------------

- | | |
|-----|--|
| (a) | Preparation of Materials |
| (b) | Welding Procedure |
| (c) | Weld Quality |
| (d) | Inspection |
| (e) | Corrections |
| 1. | Cracks in Welds or Base Metal |
| 2. | Excessive Porosity and Lack of Fusion |
| 3. | Copper or Tungsten Inclusions |
| 4. | Excessive Concavity of Crater, Undercut and Undersize Weld |
| 5. | Overlap |

803.04	Qualification of Procedures, Welders, and Welding Operators
--------	---

SECTION 804 – DELINEATORS

804.01	Description
--------	-------------

804.02	Materials
--------	-----------

804.03	Delineator Visibility
--------	-----------------------

804.04	Posts
--------	-------

804.05	Flexible Delineator Posts
--------	---------------------------

804.06	Method of Measurement
--------	-----------------------

804.07	Basis of Payment
--------	------------------

SECTION 805 – TRAFFIC SIGNALS

805.01	Description
--------	-------------

805.02	Materials
--------	-----------

805.03	General Requirements
--------	----------------------

805.04	Pole Installation
--------	-------------------

805.05	Placing Signal Heads
--------	----------------------

805.06	Grounding
--------	-----------

805.07	Wire and Cable Installations
--------	------------------------------

805.08	Controller Cabinet, Signal Service, and Detector Housing Installation
--------	---

805.09	Loop Wire Detector Installation
--------	---------------------------------

- | | |
|-----|---|
| (a) | Megohm Test Before Splice is Made at Detector Housing for Loop Wire |
| (b) | Megohm Test Before Splice is Made at Detector Housing for Lead-in Cable |
| (c) | Megohm Test After Splice is Completed at Cabinet |
| (d) | Vehicle Simulator Test |
| (e) | Acceptance Criteria |

805.10	Magnetometer and Microloop Detectors
--------	--------------------------------------

805.11	Steel Conduit
--------	---------------

805.12	PVC Conduit
--------	-------------

805.13	Foundations
--------	-------------

805.14	Final Clean-Up
--------	----------------

805.15	Method of Measurement
--------	-----------------------

805.16	Basis of Payment
--------	------------------

SECTION 806 – BLANK

SECTION 807 – HIGHWAY ILLUMINATION

807.01	Description
--------	-------------

807.02	Maintenance of Highway Illumination
--------	-------------------------------------

807.03	Materials
--------	-----------

807.04	Excavation
--------	------------

- | | |
|-----|-----------------------|
| (a) | Trench Excavation |
| (b) | Foundation Excavation |
| (c) | Landscape Replacement |

TABLE OF CONTENTS

Section Title

807.05	Backfilling
807.06	Placing Conduit
807.07	Connections in Base of Lighting Standards
807.08	Placing Wire and Cable
(a)	Underground Through Cable-duct
1.	Cable-duct
2.	Cable Markers
(b)	Underground Through Conduit
1.	Cable-duct
2.	Cable Markers
(c)	In Conduit Risers
(d)	Through Conduit in Bridge Copping
(e)	Aerial Cable
807.09	Lighting Handholes
807.10	Concrete Foundations For Lighting Standards
(a)	Cast-in-Place Foundations
(b)	Precast Foundations
(c)	Grading of Foundations
807.11	Placing Lighting Standards
(a)	Lighting Standards Under 24 m (80 ft) in Height
(b)	High Mast Lighting Standards of 24 m (80 ft) Height and Over
807.12	Grounding
807.13	Luminaire Installation
(a)	Roadway Luminaires
(b)	Sign Luminaires
(c)	Underpass Luminaires
(d)	High Mast Luminaires
807.14	Sign, Underpass, Roadway, and High Mast Lighting Location Identification
807.15	Service Point Power Entry
(a)	Types of Service Points
1.	Type I Service Point
2.	Type II Service Point
(b)	Sign and Underpass Circuits
(c)	Multiple Relay Switches
807.16	Testing of Highway Lighting System
(a)	Testing Lighting Circuitry
(b)	Testing and Inspecting Luminaires
807.17	Pay Item and Installation Summary Sheets
807.18	Method of Measurement
(a)	From the Face of the Concrete Foundation to the Center of the Handhole or Face of the Next Concrete Foundation
(b)	From Lighting Standard Bases or Handholes to Switch Boxes at Underpasses
(c)	From End to End of the Conduit when the Cable is in Conduit under a Roadway Surface or Shoulder
807.19	Basis of Payment
SECTION 808 – PAVEMENT TRAFFIC MARKINGS	
808.01	Description
808.02	Materials
808.03	General Requirements
808.04	Longitudinal Markings
(a)	Center Lines
(b)	Lane Lines
(c)	Edge Lines
(d)	Barrier Lines
808.05	Transverse Markings
808.05.1	Curb Markings

TABLE OF CONTENTS

Section	Title
---------	-------

808.06	Pavement Marking Material Application and Equipment
--------	---

- | | |
|-----|-----------------------------------|
| (a) | Traffic Paint |
| 1. | Application |
| 2. | Equipment |
| (b) | Durable Pavement Marking Material |
| 1. | Thermoplastic |
| a. | Application |
| b. | Equipment |
| 2. | Preformed Plastic |
| a. | Application |
| b. | Equipment |
| 3. | Epoxy |
| a. | Application |
| b. | Equipment |

808.07	Marking Protection and Maintenance of Traffic
--------	---

- | | |
|-----|------------------------------|
| (a) | Vehicle Signs |
| (b) | Vehicle Warning Lights |
| (c) | Cones |
| (d) | Front Escort Vehicles |
| (e) | Marking Application Vehicles |
| (f) | Rear Escort Vehicles |

808.08	Warranty for Durable Pavement Marking Material
--------	--

808.09	Removal of Pavement Markings
--------	------------------------------

808.10	Snowplowable Raised Pavement Markers
--------	--------------------------------------

- | | |
|-----|-------------------------------------|
| (a) | Surface Preparation |
| (b) | Location |
| (c) | Reflector Color |
| (d) | Installation |
| (e) | Removal of Markers |
| (f) | Replacement of Prismatic Reflectors |

808.11	Method of Measurement
--------	-----------------------

808.12	Basis of Payment
--------	------------------

SECTION 900 – MATERIALS DETAILS

SECTION 901 – PCC MATERIALS

901.01	Hydraulic Cement
--------	------------------

- | | |
|-----|--|
| (a) | General |
| (b) | Portland Cement |
| 1. | Requirements |
| 2. | Acceptance Criteria |
| a. | General Requirements |
| b. | Requirements for Domestic Source Qualification |
| c. | Requirements for Foreign Source Qualification |
| d. | Certification |
| (c) | Masonry Cement |

901.02	Fly Ash Used as a Pozzolan
--------	----------------------------

- | | |
|-----|--------------------------------|
| (a) | General |
| (b) | Acceptance Criteria |
| 1. | Requirements |
| 2. | Test and Calibration Procedure |
| 3. | Documentation |

TABLE OF CONTENTS

Section Title

901.03 Ground Granulated Blast Furnace Slag Used as a Pozzolan

- (a) General
- (b) Acceptance Criteria
 - 1. Requirements
 - 2. Test and Calibration Procedure
 - 3. Documentation

901.04 Silica Fume Used As a Pozzolan Mineral Admixture

- (a) General
- (b) Acceptance Criteria
 - 1. Requirements
 - 2. Frequency of Testing
 - 3. Test and Calibration Procedure
 - 4. Documentation

901.05 Chemical Anchor Systems

- (a) Requirements
- (b) Laboratory Testing

901.06 PCC Sealer/Healers

- (a) Requirements
- (b) Laboratory Testing

901.07 Rapid Setting Patch Materials

- (a) Normal Weather Mixes
- (b) Hot Weather Mixes
- (c) Requirements
- (d) Test Report

SECTION 902 – ASPHALT MATERIALS

902.01 Asphalt

- (a) Performance Graded Asphalt Binders
 - 3. Appeals
- (b) Asphalt Emulsions
- (c) Cutback Asphalts
 - 1. Medium Curing Asphalts With and Without Additives
 - 2. Slow Curing Asphalts With and Without Additives
- (d) Utility Asphalt
- (e) Asphalt for Coating Corrugated Metal Pipe

902.02 Sampling and Testing Asphalt Materials

902.03 Application Temperatures

SECTION 903 – CLASSIFICATION OF SOILS

903.01 Definitions

903.02 Soils Having 0% to 19% Retained on 2.00 mm (No. 10) Sieve

903.03 Soils Having 20% or More Retained on 2.00 mm (No. 10) Sieve and More Than 20% Passing 75 μ m (No. 200) Sieve

903.04 Soils Having 20% or More Retained on 2.00 mm (No. 10) Sieve and Less Than 20% Passing 75 μ m (No. 200) Sieve

903.05 Organic Soils

903.06 Marly Soils

SECTION 904 – AGGREGATES

904.01 Aggregates

904.02 Fine Aggregates

- (a) For Portland Cement Concrete
- (b) For HMA Mixtures
- (c) For Pneumatically Placed Mortar
- (d) Mortar Sand
- (e) Blank
- (f) Snow and Ice Abrasives
- (g) Sizes of Fine Aggregates
- (h) Sampling and Testing

TABLE OF CONTENTS

Section Title

904.03 Coarse Aggregates

- (a) Classification of Aggregates
- (b) Coarse Aggregate Angularity
- (c) Flat and Elongated
- (d) Surface Aggregate Requirements
- (e) Sizes of Coarse Aggregates
- (f) Sampling and Testing

904.04 Riprap

- (a) Dumped Riprap
- (b) Grouted Riprap
- (c) Revetment, Class 1, and Class 2 Riprap
- (d) Uniform Riprap
- (e) Sizes of Riprap

904.05 Structure Backfill

904.06 Exceptions to AASHTO Standard Methods

- (a) Exceptions to AASHTO T 2
- (b) Exceptions to AASHTO T 11, T 27, and T 37
- (c) Exceptions to AASHTO T 27 for Coarse Aggregates
- (d) Exceptions to AASHTO T 85
- (e) Exceptions to AASHTO T 103 and T 104

SECTION 905 – MASONRY UNITS

905.01 Clay or Shale Brick

- (a) Sewer Brick
- (b) Manhole Brick
- (c) Building Brick

905.02 Concrete Brick

905.03 Concrete Masonry Blocks

905.04 Precast Concrete Riprap

905.05 Detectable Warning Elements

SECTION 906 – JOINT MATERIALS

906.01 Joint Fillers

906.02 Joint Sealing Materials

- (a) Joint Sealers
 - 1. Silicone Joint Sealants
 - a. Physical Requirements
 - b. Field Evaluation
 - c. Specific Requirements for Installation of Silicone Joint Sealant
 - 2. Hot Poured Joint Sealant
 - a. General Requirements
 - b. Packaging and Marking
 - c. Requirements for Installation
 - d. Sampling and Testing
 - 3. Preformed Elastomeric Joint Seals

- (b) Backer Rod

- 1. Requirements
 - 2. Certification

906.03 Joint Mortar

906.04 Rubber Type Gaskets

906.05 Bituminous Mastic Pipe Joint Sealer

- (a) General Requirements
- (b) Certification

906.05.1 Joint Membrane System for Precast Reinforced Concrete Box Sections

TABLE OF CONTENTS

Section Title

906.06 Bridge Expansion Joints

- (a) Type SS
- (b) Type BS2, BS6, BS8, BS9, and BS11
- (c) Type M

SECTION 907 – CONCRETE, CLAY, AND PLASTIC DRAINAGE COMPONENTS

907.01 Non-Reinforced Concrete Pipe

907.02 Reinforced Concrete Pipe

907.03 Reinforced Concrete Horizontal Elliptical Pipe

907.04 Precast Concrete Manholes, Inlets, and Catch Basins

907.05 Precast Reinforced Concrete Box Sections

907.06 Blank

907.07 Blank

907.08 Clay Pipe

907.09 Perforated Clay Pipe

907.10 Blank

907.11 Drain Tile

907.12 Blank

907.13 Blank

907.14 Blank

907.15 Blank

907.16 Plastic Pipe Manufacturer Requirements

907.17 Corrugated Polyethylene Drainage Tubing

907.18 Perforated Polyvinyl Chloride Semicircular Pipe

907.19 Corrugated Polyethylene Pipe

907.20 Ribbed Polyethylene Pipe

907.21 Smooth Wall Polyethylene Pipe

907.22 Profile Wall Polyvinyl Chloride Pipe

907.23 Smooth Wall Polyvinyl Chloride Pipe

907.24 Smooth Wall Pipe for Outlets

- (a) Type PSM Polyvinyl Chloride Pipe and Fittings
- (b) Schedule 40 Polyvinyl Chloride Pipe

907.24.1 Thermoplastic Pipe Liners

- (a) Solid Wall HDPE Pipe Liner
- (b) Profile Wall HDPE Pipe Liner
- (c) Profile Wall PVC Pipe Liner

907.25 Solvent Cements for Polyvinyl Chloride Pipe and Pipe Fittings

907.26 Elastomeric Seals

SECTION 908 – METAL PIPE

908.01 Blank

908.02 Corrugated Steel Pipe and Pipe-Arches

908.03 Blank

908.04 Corrugated Aluminum Alloy Pipe and Pipe-Arches

908.05 Blank

908.06 Metal End Sections

908.07 Fiber Bonded Fully Bituminous Coated Corrugated Steel Culvert Pipe and Pipe-Arches

908.08 Polymer Precoated Galvanized Corrugated Steel Culvert Pipe and Pipe-Arches

908.09 Structural Plate Pipe, Pipe-Arches, and Arches

- (a) Steel
- (b) Aluminum Alloy

908.10 Cast Iron Soil Pipe

908.11 Steel Pipe

908.12 Straps, Hook Bolts and Nuts Used in Anchors

908.13 Fully Bituminous Coated and Lined Corrugated Steel Pipe and Pipe-Arches

908.14 Slotted Drain or Slotted Vane Drain Pipe

TABLE OF CONTENTS

Section	Title
---------	-------

SECTION 909 – PAINT AND LIQUID EPOXY

909.01 General Requirements

909.02 For Metal

(a) Zinc Primers

1. Multi-Component Inorganic Zinc Silicate Primer
2. Organic Zinc Primer
3. Approval of Formulation

(b) Epoxy Intermediate Paint

(c) Polyurethane Finish Coat

(d) Waterborne Finish Paint

1. Vehicle Component
2. Pigment Component
3. Mixed Paint Properties
4. Color
5. Approval of Formulation

(e) Finish Coat for Weathering Steel

909.03 Structural Steel Coating System

(a) Toxicity

(b) Resistance

(c) Approval of Structural Steel Coating System

909.04 Field Paint for Wood or Metal

909.05 White and Yellow Traffic Paint

(a) Blank

(b) Fast Dry Traffic Paint

1. General Requirements
2. Specific Requirements

(c) White and Yellow Waterborne Traffic Paint

1. Composition Requirements
2. Specific Requirements
3. Formulation Approval

909.06 Blank

909.07 Blank

909.08 Blank

909.09 Epoxy Penetrating Sealers

(a) Polysulfide Type

(b) Unmodified Type

(c) Specific Requirements

(d) Low Temperature Epoxy Penetrating Sealer

(e) Packaging and Marking

(f) Approval of Formulation

909.10 Proprietary PCC Sealers

(a) Properties

(b) Test Report

909.11 Epoxy-Resin-Base System for Bonding Plastic Concrete to Hardened Concrete

SECTION 910 – METAL MATERIALS

910.01 Reinforcing Bars and Dowel Bars

(a) General

(b) Specific Requirements

1. Billet Steel Bars
2. Threaded Tie Bar Assembly
3. Splicing Systems
4. Blank
5. Welded Steel Wire Fabric for Concrete Reinforcement

TABLE OF CONTENTS

Section	Title
	6. Welded Deformed Steel Wire Fabric for Concrete Reinforcement
	7. Uncoated 7 Wire Strand for Prestressed Concrete
	8. Steel Spiral Reinforcement
	9. Epoxy Coated Reinforcing Bars
	10. Dowel Bars
	(c) Inspection, Sampling, and Testing
910.02	Structural Steel
	(a) Structural Steel
	(b) High Strength Structural Steel
	(c) Charpy V-Notch Toughness Tests
	(d) Mill Test Reports
	(e) High Strength Bolts, Nuts, and Washers
	1. General Use
	2. Assembly of Structural Steel in Bridges
	a. Bolts
	b. Nuts
	c. Tests
	(1) Rotational Capacity
	(2) Proof Loads
	(3) Wedge Tension Test
	d. Certification
	(f) Bolts other than High Strength Bolts
	1. General
	2. Unfinished Bolts
	3. Turned Bolts
	4. Ribbed Bolts
910.03	Permanent Metal Forms
910.04	Steel Forgings and Steel Shafting
	(a) Carbon Steel Forgings
	(b) Cold Finished Carbon Steel Shafting
	(c) Alloy Steel Forgings
	(d) Certification
910.05	Castings
	(a) Steel Castings
	1. Steel Castings for Highway Bridges
	2. Chromium Alloy Steel Castings
	(b) Iron Castings
	(c) Ductile Iron Castings
	(d) Malleable Castings
	(e) Carbon Steel Castings
910.06	Bronze and Copper Alloy
	(a) Bronze Castings
	(b) Copper Alloy Plates
910.07	Steel Drain Pipe
910.08	Blank
910.09	Guardrail
910.10	Guardrail Posts
	(a) Steel Guardrail Posts
	(b) Wood Guardrail Posts
910.11	Guardrail Accessories, Fittings, and Hardware
	(a) For Steel Beam Guardrail
	(b) For Steel Tube Guardrail
910.12	Certification of Guardrail Suppliers

TABLE OF CONTENTS

Section	Title
---------	-------

910.13	Steel Fence Posts
--------	-------------------

(a)	Tubular Steel Fence Posts
-----	---------------------------

1.	Group 1
----	---------

2.	Group 2
----	---------

(b)	Fence Fastenings
-----	------------------

910.14	Sign Posts
--------	------------

(a)	Steel, Flanged, Channel Posts
-----	-------------------------------

1.	General Requirements
----	----------------------

2.	Deflection Test Requirements
----	------------------------------

3.	Type of Posts
----	---------------

(b)	Wide Flange Posts
-----	-------------------

(c)	Structural Steel Posts
-----	------------------------

(d)	Structural Aluminum Posts
-----	---------------------------

(e)	Square Steel Posts
-----	--------------------

1.	Steel
----	-------

2.	Fabrication
----	-------------

3.	Protective Coating
----	--------------------

(f)	Portable Construction Sign Trailer
-----	------------------------------------

910.15	Delineator Posts
--------	------------------

910.16	Copper Flashing
--------	-----------------

910.17	Bronze or Copper Alloy Plates
--------	-------------------------------

910.18	Fence, Fittings, and Gates
--------	----------------------------

(a)	Farm Field or Woven Wire Fence
-----	--------------------------------

(b)	Steel Fabric Chain Link Fence
-----	-------------------------------

1.	Tension Wire
----	--------------

2.	Stretcher Bars, Truss Rods, and Turnbuckles
----	---

3.	Braces
----	--------

4.	Barbed Wire
----	-------------

(c)	Aluminum Fabric Chain Link Fence
-----	----------------------------------

(d)	Gates
-----	-------

1.	Steel Gates
----	-------------

2.	Aluminum Gates
----	----------------

(e)	Control Procedures for Furnishing Fence and Accessories
-----	---

1.	General Requirements
----	----------------------

2.	Suppliers of Pretested Approved Stockpiled Material
----	---

3.	Suppliers Not Furnishing Pretested Approved Stockpiling Material
----	--

910.19	Overhead Sign Structures
--------	--------------------------

(a)	Aluminum Overhead Sign Structures, Box Truss and Bridge Attached
-----	--

(b)	Steel Overhead Sign Structures, Box Truss, Cantilever, Monotube, and Bridge Attached
-----	--

910.20	Steel Bridge Railing Components
--------	---------------------------------

910.21	Steel Sheet Piling
--------	--------------------

910.22	Welding Supplies
--------	------------------

(a)	Aluminum Alloy Base Metals
-----	----------------------------

1.	Bare Wire Electrodes and Welding Rods
----	---------------------------------------

2.	Filler Metal
----	--------------

3.	Shielding Gases
----	-----------------

SECTION 911	WOOD MATERIALS
-------------	----------------

911.01	Untreated Lumber
--------	------------------

(a)	General
-----	---------

1.	Boards
----	--------

2.	Dimension Lumber
----	------------------

3.	Structural Lumber
----	-------------------

4.	Timbers
----	---------

TABLE OF CONTENTS

Section	Title
	5. Timbers, Round
	6. Yard Lumber
	7. Surfaced or Dressed Lumber
	8. Rough Lumber
	(b) Species and Grade
	(c) Inspection
	(d) Tolerances
	(e) Untreated Piling
911.02	Treated Lumber
	(a) General
	(b) Bridge Lumber
	(c) Piling
	(d) Guardrail Posts, Braces, and Battens
	(e) Sign Posts
	(f) Sawed Timber Posts and Blocks for Thrie-Beam and W-Beam Guardrail
	1. Species and Grades
	2. Department Grade GRP
	a. Splits
	b. Checks
	c. Shakes
	d. Stains
	e. Slope of Grain
	f. Wane
	g. Knots
	3. Department Grade GRB
	a. Splits
	b. Checks
	c. Shakes
	d. Stains
	e. Wane
	f. Knots
	4. General Requirements
	a. Decay
	b. Unsound Wood
	c. Crook or Bow
	d. Dimensional Tolerances
	5. Pressure Treating Posts and Blocks
	a. Machining
	b. Blank
	c. Inspection Before Treatment
	d. Test for Moisture Content
	e. Preservative Treatment
	f. Material for Preservative Treatments
	g. Treatment Methods
	h. Sorting and Spacing
	i. Conditioning
	j. Treatment
	k. Inspection During Treatment
	l. Retentions
	m. Penetration
	n. Inspection After Treatment
	o. Branding
	p. Conformance
	q. Records
	r. Independent Inspections

TABLE OF CONTENTS

Section Title

- 6. Field Treatment of Posts and Blocks
- 7. Rejection for Degrade After Treatment
- (g) Preservatives
 - 1. Waterborne Preservatives

SECTION 912 – CONCRETE CURING MATERIALS AND ADMIXTURES

912.01 Curing Materials

- (a) Burlap Cloth made from Jute or Kenaf
- (b) Waterproof Paper Blankets
- (c) White Polyethylene Sheeting, Film
- (d) White Burlap Polyethylene Sheet
- (e) Liquid Membrane Forming Compounds
- (f) Polyethylene Film.

912.02 Curing-Sealing Materials

912.03 Admixtures for Use in Concrete

- (a) Air Entraining Admixtures
- (b) Chemical Admixtures for Concrete
 - 1. Type A
 - 2. Type B
 - 3. Type C
 - 4. Type D
 - 5. Type E
 - 6. Type F
 - 7. Type G
 - 8. High Range Water Reducing and High Range Water Reducing and Retarding Admixture Systems
- (c) Test Report

912.04 Latex Modifiers

SECTION 913 – MISCELLANEOUS

913.01 Water

913.02 Calcium Chloride

913.03 Sodium Chloride

913.04 Lime

- (a) Hydrated Lime for Masonry
- (b) Lime for Soil Modification
 - 1. Hydrated Lime and Quicklime
 - 2. Lime By-Products

913.05 Precast Concrete Curbing

913.06 Precast Concrete Units Not Otherwise Covered

913.07 Flexible Delineator Posts

913.07.1 Tubular Marker

913.08 Delineators

- (a) Acrylic Plastic Delineators
- (b) Reflective Sheeting Delineators
- (c) Barrier Delineators
- (d) Temporary Barrier Delineator

913.09 Glass Beads

913.10 Traffic Signs

- (a) Backing Material
 - 1. Sheet Signs
 - 2. Panel Signs
 - 3. Demountable Letters, Numbers, and Symbols
- (b) Sheeting Material
 - 1. Reflective Sheeting
 - 2. Nonreflective Sheeting
 - 3. Transparent Sheeting

TABLE OF CONTENTS

Section	Title
(c)	Letters, Numerals, Symbols, and Accessories
(d)	Fasteners
1.	Sheet Signs
2.	Panel Signs and Temporary Panel Signs
3.	Aluminum Rivets
(e)	Basis for Use
913.11	Highway Illumination Materials
(a)	Lighting Standards and Mast Arms, under 80 feet (24.4 m)
1.	General Requirements
2.	Aluminum Lighting Standards
a.	Round Seamless
b.	Single Longitudinal Welded
3.	Stainless Steel Lighting Standards
4.	Galvanized Steel Lighting Standards
5.	Wood Pole Lighting Standards
6.	Frangible Breakaway Bases
a.	Cast Aluminum Transformer Base
b.	Breakaway Coupling
7.	Anchor Bolts
(b)	High Mast Standards of 24.5 m (80 ft) and Over
1.	High Mast Poles
2.	Welding
3.	Handholes
4.	Luminaire Ring Assembly
5.	Head Frame Assembly
6.	Winch Assembly
7.	External Drive System
8.	Cable Terminator
9.	Lightning Rod Assembly and Grounding System
10.	Anchor Bolts
(c)	Wire and Cable
1.	Polyethylene Conduit
2.	Conductors in Cable-Duct
3.	Lighting Standard Circuit Wiring
4.	Sign and Underpass Wiring
5.	Aerial Cable
6.	High Mast Tower Luminaire Ring Conductors
7.	Power Cable-High Mast Poles
8.	Electrical Connectors
(d)	Luminaires
1.	General Requirements
2.	Roadway Lighting Luminaires
3.	Sign Luminaires
4.	Underpass Luminaires
5.	High Mast Luminaires
(e)	Circuit Breakers and Enclosure
1.	Circuit Breakers for Type II Service Point
2.	Circuit Breakers for Sign and Underpass Circuits
3.	Circuit Breakers for High Mast Poles
4.	E-Series Magnetic Circuit Breakers
(f)	Multiple Relay Switches with Photocell Receptacles
(g)	Shop Drawings
(h)	Materials Certification

TABLE OF CONTENTS

Section	Title
913.12	Construction Warning Lights
(a)	Flash Requirements
1.	Flash Rate
2.	On-Time
a.	Type A
b.	Type B
(b)	Optical Requirements
1.	Effective Intensity
2.	Lens Illumination
3.	Reflex-Reflective Performance
4.	Testing Procedure
(c)	Lens Requirements
1.	Size of Lens
2.	Directional Lenses
3.	Lens Chromaticity
4.	Lens Luminous Transmittance
5.	Lens Material
(d)	Head and Case
1.	Swivel Head
2.	Case
(e)	Photoelectric Controls
913.13	Flashing Arrow Sign
(a)	Solar Powered
(b)	Diesel Powered
(c)	AC Powered
913.13.1	Temporary Worksite Speed Limit Sign Assembly
913.14	Pavement Marking Material
(a)	Traffic Paint
(b)	Durable Marking Material
1.	Thermoplastic
2.	Preformed Plastic
a.	Material Requirements
(1)	Tensile Strength
(2)	Adhesive Stability Test
(3)	Adhesive Shear Strength
(4)	Bend Test
b.	Packaging
c.	Basis For Use
3.	100 Percent Solids Epoxy
a.	Material Requirements
(1)	Glass Beads
(2)	Abrasion Resistance
(3)	Hardness
(4)	Tensile Strength
(5)	Compressive Strength
(6)	Weather Resistance
(7)	Laboratory Drying Time
(8)	Viscosity
b.	Materials Preparation
c.	Packaging and Storage
d.	Basis For Use
(c)	Temporary Pavement Marking Tape

TABLE OF CONTENTS

Section	Title
---------	-------

- | | |
|---|--|
| (d) Raised Pavement Marker | |
| 1. Snowplowable Raised Pavement Marker | |
| a. Prismatic Reflector | |
| (1) Optical Performance | |
| (2) Seal Test | |
| (3) Heat Resistance Test | |
| (4) Strength Test | |
| (5) Impact Test | |
| (6) Temperature Cycling Test | |
| (7) Adhesive Tensile Strength Test | |
| (8) Basis for Use | |
| b. Cast Metal Base | |
| (1) Epoxy Adhesive | |
| (2) Basis for Use | |
| c. Precast Cement Concrete Base | |
| (1) Adhesive for Precast Concrete Base | |
| (2) Packaging | |
| (3) Basis for Use | |
| 2. Temporary Raised Pavement Marker | |
| a. Optical Requirements | |
| b. Strength Requirements | |
| c. Adhesive | |
| d. Acceptance Evaluation | |
| 913.15 Traffic Signal Materials and Equipment | |
| (a) Traffic Signal Controller and Cabinet | |
| 1. Model Approval | |
| 2. Controllers or Control Units Furnished and Installed by the Contractor | |
| 3. Blank | |
| 4. Bench Testing | |
| 5. Pretimed Solid State Digital Controller | |
| a. General | |
| b. Controller Requirements | |
| c. Spare Modules | |
| d. Controller Enclosure | |
| e. Power Requirements | |
| f. Certification of Traffic Control Units | |
| g. Warranty | |
| 6. Traffic Actuated Solid State Digital Controller | |
| a. General | |
| b. Controller Requirements | |
| c. Spare Modules | |
| d. Controller Enclosure | |
| e. Power Requirements | |
| f. Certification of Traffic Control Units | |
| (1) Certification of a Production Run Model | |
| (2) Certification of Environmental Testing | |
| g. Warranty | |
| 7. Cabinet Requirements for Traffic Signal Controllers | |
| a. General | |
| b. G Cabinet | |
| (1) Cast Aluminum Pedestal Base | |
| (2) Pedestal Pole | |
| (3) Pole Cap | |
| c. M Cabinet | |
| d. P-1 Cabinet | |

TABLE OF CONTENTS

Section	Title
	8. Two Circuit Alternating Flasher
	a. General
	b. Cabinet Requirements
(b)	Interconnection Equipment.
1.	Hardwire Interconnection
a.	Electro-Mechanical Dial Coordination Unit
(1)	General
(2)	Additional Requirements for Master Locations
(3)	Additional Requirements for Secondary Locations
(c)	Blank
(d)	Signal Head Components
1.	Vehicle Signal Face
a.	General
b.	Housing, Door, and Visor
c.	Lens
d.	Reflector Assembly
e.	Lamp Receptacle and Wiring
f.	Section Coupling
g.	Terminal Block
h.	Material Requirements
(1)	Polycarbonate Signal Head
(2)	Die-Cast Aluminum Signal Head
i.	Certification
2.	Pedestrian Signal Head
a.	Housing, Door, and Visor
b.	Optical Unit
c.	Lens
d.	Message
e.	Reflector Assembly
f.	Light Distribution
g.	Electrical
3.	Disconnect Hanger Junction Box
4.	Signal Bulbs
5.	Free Swinging Signal Support Assemblies
6.	Mid-Mast Arm Mount Signal Bracket
7.	Pedestal Mounted Control Cabinets or Pedestrian Signal Heads
(e)	Signal Support
1.	Steel Strain Pole
a.	Maximum Load 35.6 kN (8000 lbs)
2.	Wood Strain Pole
3.	Signal Cantilever Structures
a.	General
b.	Signal Support
c.	Combination Signal-Luminaire Support
d.	Pole Requirements
(1)	General
(2)	Deflection
(3)	Materials
(4)	Hardware
(5)	Anchor Base
e.	Arm Requirements
(1)	Signal Cantilever Arm
(2)	Luminaire Mast Arm for Combination Support
(3)	Materials

TABLE OF CONTENTS

Section	Title
	f. Anchor Bolts
	g. Finish
	h. Certification
	i. Shop Drawings
	4. Downguys, Anchors, Rods, and Guards
(f)	Messenger Cable
	1. Messenger Cable
	2. Span, Catenary, and Downguy Cable
	3. Tether and Support Cable
	4. Cable Hardware
	a. Messenger Hangers
	b. Cable Ring
	c. Clamps
	d. Servi-Sleeves
	e. Straight Eye-Bolts
	f. Hub-Eyes
	5. Signal Cable
	a. Hook-up Wire
	b. Signal Control Cable
	c. Integral Messenger Interconnect Cable
	d. 6 Pair/19 Telemetry Cable
	e. Fiber Optic Interconnect Cable
	f. Service Cable
	g. Detection Wire and Sealant
	(1) Loop Detector Lead-in Cable
	(2) Roadway Loop Wire
	(3) Sealant
	h. Ground Wire
	i. Splicing Kit
(g)	Ground Rod and Connections
(h)	Castings for Handholes
(i)	Entrance Switch
(j)	Conduit and Fittings
	1. Steel Conduit
	2. Polyvinyl Chloride Conduit
(k)	Detector Housing
(l)	Certification
913.16	Fabric for Waterproofing
913.17	Packaged, Dry, Combined Materials for Mortar and Concrete
913.18	Geotextile for Use Under Riprap
913.19	Geotextile for Use with Underdrains
913.20	Geotextile for Silt Fence
913.21	Geogrid
	(a) Type I
	(b) Type II
SECTION 914 – ROADSIDE DEVELOPMENT MATERIALS	
914.01	Special Topsoil for Roadside Development
914.02	Temporary Seed
914.03	Fertilizer
914.04	Grass and Legume Seed

TABLE OF CONTENTS

Section Title

914.05 Mulch

- (a) Mulch for Seeding
 - 1. Excelsior Mulch
 - 2. Wood Cellulose Fiber
 - 3. Excelsior Blanket
 - 4. Paper Mat
 - 5. Straw Mat
- (b) Mulch for Plants

914.06 Leguminous Inoculants

914.07 Sod

914.08 Plant Materials

- (a) Quality of Plant Materials
- (b) Plant Names
- (c) Substitutions
- (d) Grading Standards
- (e) Nursery Inspection and Plant Quarantine
- (f) Balled and Burlapped Plants
- (g) Container Grown Plants
- (h) Bare Rooted Plants
- (i) Collected Plants
- (j) Forms, Shapes, and Condition of Plants
- (k) Inspection
- (l) Shipment
- (m) Certification

914.09 Miscellaneous Material

- (a) Water
- (b) Stakes for Bracing and Anchoring
- (c) Tree Wound Dressing
- (d) Porous Material
- (e) Pipe
- (f) Staples
- (g) Plastic Net

SECTION 915 – BRIDGE PILES AND BEARINGS

915.01 Steel Shell Encased Concrete Piles and Epoxy Coated Steel Shell Encased Reinforced Concrete Piles

- (a) General Requirements
- (b) Fluted Steel Pile Shells
- (c) Rounded Steel Pipe Shells
- (d) Epoxy Coating for Piles
 - 1. Prequalification of Organic Coatings for Steel Piles
 - a. Product Data Sheet
 - b. Fingerprint
 - c. Materials Safety Data Sheets
 - d. Laboratory Report
 - (1) Tensile Strength and Elongation
 - (2) Impact Resistance
 - (3) Abrasion Resistance
 - (4) Salt Fog
 - 2. Application
 - a. Surface Preparation
 - b. Coating Application
 - (1) Thickness
 - (2) Cure
 - (3) Continuity of Coating
 - 3. Certification

TABLE OF CONTENTS

Section	Title
---------	-------

915.02	Steel H Piles and Epoxy Coated Steel H Piles
--------	--

915.03	Wood Piles
--------	------------

915.04	Elastomeric Bearings
--------	----------------------

(a)	Description
-----	-------------

(b)	Materials
-----	-----------

(c)	Manufacturing Requirements
-----	----------------------------

(d)	Appearance and Dimensions
-----	---------------------------

(e)	Quality Assurance
-----	-------------------

(f)	Certification
-----	---------------

SECTION 916 – MATERIALS CERTIFICATIONS

916.01	General
--------	---------

916.02	Types of Certifications
--------	-------------------------

(a)	Type A
-----	--------

(b)	Type B
-----	--------

(c)	Type C
-----	--------

(d)	Type D
-----	--------

(e)	Other Types
-----	-------------

(f)	Requirements for Small Quantities of Materials
-----	--

(g)	Buy American Requirement
-----	--------------------------

916.03	Sample Forms
--------	--------------

(a)	For Buy American Requirement
-----	------------------------------

(b)	Sample Type A Certification Form
-----	----------------------------------

(c)	Sample Type B Certification Form
-----	----------------------------------

(d)	Sample Type C Certification Form
-----	----------------------------------

(e)	Sample Type D Certification Form
-----	----------------------------------

(f)	Sample Asbestos Exclusion Letter
-----	----------------------------------

SECTION 917 – QUALITY ASSURANCE AGGREGATE CERTIFICATION

917.01	General Requirements
--------	----------------------

917.02	Quality Control Plan
--------	----------------------

917.03	Source Approval Requirements
--------	------------------------------

(a)	Step 1
-----	--------

(b)	Step 2
-----	--------

(c)	Step 3
-----	--------

917.04	Removal from Certified Producer Status
--------	--

917.05	Appeals
--------	---------