

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

SECTION 203 – EXCAVATION AND EMBANKMENT

- 203.01 Description
- 203.02 Common Excavation

TABLE OF CONTENTS

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

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 |

SECTION 208 – FINISHING SHOULDERS, DITCHES, AND SLOPES

- | | |
|--------|---------------------|
| 208.01 | Description |
| 208.02 | Finishing Shoulders |
| 208.03 | Finishing Ditches |

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

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

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

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

TABLE OF CONTENTS

Section Title

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)
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

TABLE OF CONTENTS

Section	Title
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
	(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

TABLE OF CONTENTS

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

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
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

TABLE OF CONTENTS

Section Title

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

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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

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

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

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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

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

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
--------	--------------------

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
--------	-------------

TABLE OF CONTENTS

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

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

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	Sloped wall
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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

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

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
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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

Section Title

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
 - (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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

Section	Title
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	
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

TABLE OF CONTENTS

Section Title

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
- 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

TABLE OF CONTENTS

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

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
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

TABLE OF CONTENTS

Section	Title
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
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 Coping
(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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

Section Title

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

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

TABLE OF CONTENTS

Section Title

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

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

TABLE OF CONTENTS

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

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

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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

Section Title

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
 - 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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

Section Title

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
 - 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

TABLE OF CONTENTS

Section Title

- 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
- 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

TABLE OF CONTENTS

Section	Title
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
(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

TABLE OF CONTENTS

Section	Title
(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
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

TABLE OF CONTENTS

Section	Title
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
(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

TABLE OF CONTENTS

Section	Title
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
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

TABLE OF CONTENTS

Section	Title
	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
	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

TABLE OF CONTENTS

Section Title

- (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
- 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

TABLE OF CONTENTS

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

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

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

TABLE OF CONTENTS

Section	Title
	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