

# Standard Construction Specifications General Provisions

## Table of Contents

### SECTION 1 – TERMS AND DEFINITIONS

1-1	GENERAL.....	1.1
1-2	ABBREVIATIONS .....	1.1
1-3	DEFINITIONS .....	1.3

### SECTION 2 - BID REQUIREMENTS AND CONDITIONS

2-1	BID FORM.....	2.1
2-1.01	Unit Price Bid.....	2.1
2-1.02	Lump Sum Bid.....	2.1
2-1.03	Allowances .....	2.1
2-2	PREPARATION AND SUBMISSION OF BIDS .....	2.1
2-3	EXAMINATIONS OF PLANS, SPECIFICATIONS, AND SITE OF WORK.....	2.2
2-4	SUBSURFACE CONDITIONS .....	2.2
2-5	CONTRACTORS/SUBCONTRACTORS REQUIRED TO BE LICENSED.....	2.3
2-6	COMPETENCY OF BIDDERS.....	2.3
2-7	JOINT VENTURE BIDS .....	2.3
2-8	SUBCONTRACTORS .....	2.4
2-9	ADDENDA.....	2.5
2-10	ASSIGNMENT OF ANTITRUST ACTIONS .....	2.5
2-11	BID GUARANTEE .....	2.5
2-12	WITHDRAWAL OF BID.....	2.5
2-13	PUBLIC OPENING OF BIDS .....	2.5
2-14	REJECTION OF BIDS .....	2.5
2-15	RELIEF OF BIDDERS.....	2.5

### SECTION 3 - AWARD AND EXECUTION OF CONTRACT

3-1	AWARD OF CONTRACT .....	3.1
3-2	TIME OF AWARD .....	3.1
3-3	CONSIDERATION OF BIDS .....	3.1
3-4	PERFORMANCE AND PAYMENT BONDS.....	3.1
3-4.01	Performance Bond .....	3.2
3-4.02	Payment Bond.....	3.2
3-5	NOTIFICATION OF SURETY COMPANIES.....	3.2
3-6	RETURN OF BID GUARANTEES .....	3.2
3-7	EXECUTION OF CONTRACT .....	3.2

3-8	FAILURE TO EXECUTE CONTRACT .....	3.3
3-9	INSURANCE .....	3.3
3-9.01	General Liability.....	3.3
3-9.02	Automobile Liability .....	3.3
3-9.03	Workers' Compensation .....	3.4
3-9.04	Excess or Umbrella Liability .....	3.4
3-9.04.A	Contractor's Equipment.....	3.4
3-9.04.B	Railroad Protective Liability.....	3.4
3-9.04.C	Builder's Risk Insurance.....	3.5
3-9.04.D	Environmental Liability Insurance .....	3.5
3-9.04.E	Other Provisions.....	3.6
3-9.04.F	Deductibles and Self-Insured Retention.....	3.7
3-9.05	Tracking and Reporting Job-Related Incidents .....	3.8
3-9.06	Notification of Claim or Lawsuit .....	3.8

**SECTION 4 - SCOPE OF WORK**

4-1	INTENT OF CONTRACT DOCUMENTS .....	4.1
4-2	PLANS AND SPECIFICATIONS FURNISHED .....	4.1
4-3	CONFORMANCE WITH CODES AND STANDARDS .....	4.2
4-4	SUPPLEMENTAL DRAWINGS.....	4.2
4-5	FIELD INSTRUCTIONS OR OTHER WRITTEN DIRECTIVES .....	4.2
4-6	DOCUMENT PRECEDENCE .....	4.3
4-7	REQUESTS FOR INFORMATION.....	4.3
4-7.01	General.....	4.3
4-7.02	Procedure.....	4.3
4-7.03	Response .....	4.3
4-8	DELETED ITEMS.....	4.4
4-9	EXTRA WORK .....	4.4
4-10	USE OF COMPLETED PORTIONS.....	4.4
4-11	LANDS AND RIGHTS-OF-WAY .....	4.4
4-12	WARRANTY.....	4.4

**SECTION 5 - CONTROL OF WORK AND MATERIALS**

5-1	AUTHORITY OF AGENCY .....	5.1
5-2	ATTENTION AND COOPERATION OF CONTRACTOR .....	5.1
5-3	SUGGESTIONS TO CONTRACTOR.....	5.1
5-4	SEPARATE CONTRACTS.....	5.1
5-5	COOPERATION WITH OTHER CONTRACTORS .....	5.1
5-6	CONTRACTOR'S DISMISSAL OF UNSATISFACTORY EMPLOYEES.....	5.2
5-7	CONTRACTOR'S EQUIPMENT .....	5.2
5-8	CONTRACTOR'S SUBMITTALS .....	5.2

5-8.01	Submittals - General.....	5.2
5-8.02	Resubmittals.....	5.3
5-8.03	NOT USED.....	5.3
5-8.04	Submittals Containing Proprietary Information.....	5.3
5-8.05	Electrical, Instrumentation, Control, and Communication Systems.....	5.4
5-8.06	Maintenance and Operations (M&O) Submittals.....	5.4
5-9	SURVEYS.....	5.5
5-9.01	Agency-Furnished Surveys.....	5.5
5-9.02	Survey Monuments.....	5.6
5-9.03	Contractor Surveys.....	5.7
5-9.04	Traffic Control.....	5.7
5-10	RESPONSIBILITY FOR ACCURACY.....	5.7
5-11	DUTIES AND POWERS OF INSPECTORS.....	5.7
5-12	INSPECTION.....	5.7
5-13	QUALITY OF MATERIALS AND WORKMANSHIP.....	5.8
5-14	SUBSTITUTIONS.....	5.9
5-14.01	NOT USED.....	5.9
5-14.02	Documentation.....	5.9
5-15	PREPARATION FOR TESTING.....	5.9
5-16	MATERIALS SAMPLING AND TESTING.....	5.9
5-17	APPROVAL OF MATERIALS.....	5.10
5-17.01	Sources Of Supply.....	5.10
5-17.02	Plant Inspection.....	5.10
5-18	PROVISIONS FOR EMERGENCIES.....	5.10
5-19	RIGHT TO RETAIN IMPERFECT WORK.....	5.10
5-20	REMOVAL OF REJECTED MATERIALS OR WORK.....	5.11
5-21	TEMPORARY SUSPENSION OR DELAY OF WORK.....	5.11
5-22	TERMINATION OF CONTRACT.....	5.11
5-22.01	Reasons for Termination.....	5.11
5-22.01.A	Contractor Bankrupt.....	5.11
5-22.01.B	Completion Delay.....	5.11
5-22.01.C	Abandonment and Unsatisfactory Performance.....	5.11
5-22.01.D	Termination of Contract for Convenience.....	5.12
5-22.02	Notice of Termination.....	5.12
5-22.03	Payments to Contractor Upon Termination of Contract.....	5.13
5-22.04	Agency Completion.....	5.13
5-22.04.A	Payment for Agency Completion.....	5.14
5-22.04.B	Agency Completion Not a Waiver of Agency Rights.....	5.14
5-23	TERMINATION OF UNSATISFACTORY SUBCONTRACTS.....	5.14

**SECTION 6 - LEGAL RELATIONS AND RESPONSIBILITIES**

6-1 COMPLIANCE WITH LAWS AND REGULATIONS..... 6.1

6-1.01 Hours of Labor..... 6.1

6-1.02 Prevailing Wage ..... 6.1

6-1.03 Payroll Records ..... 6.2

6-1.04 Nondiscrimination..... 6.2

6-1.05 Apprentices ..... 6.2

6-1.06 Workers' Compensation ..... 6.2

6-1.07 Fair Labor Standards..... 6.2

6-1.08 Contractors License ..... 6.2

6-1.09 Use of Pesticides..... 6.3

6-1.10 Reporting Requirements and Sanctions..... 6.3

6-1.11 Subcontracting ..... 6.4

6-1.12 Occupational Safety and Health..... 6.4

6-1.13 Sacramento County Residents..... 6.4

6-2 INDEMNIFICATION ..... 6.4

6-2.01 Contractor's Performance..... 6.4

6-2.02 No Limitation of Liability for Indemnification ..... 6.4

6-3 CONTRACTOR'S LEGAL ADDRESS..... 6.4

6-4 CONTRACTOR NOT AN AGENT OF AGENCY ..... 6.5

6-5 SUBSTITUTION OF SUBCONTRACTORS..... 6.5

6-6 ASSIGNMENT OF CONTRACT ..... 6.5

6-7 ASSIGNMENT OF MONIES ..... 6.6

6-8 PROTECTION OF AGENCY AGAINST PATENT CLAIMS ..... 6.6

6-9 RESPONSIBILITY OF THE CONTRACTOR ..... 6.6

6-10 PERMITS AND LICENSES ..... 6.7

6-11 SAFETY ..... 6.7

6-11.01 Safety Plans and Documents ..... 6.7

6-11.01.A Injury Illness Prevention Program (IIPP) and Code of Safe Work Practices (CSP) .. 6.7

6-11.01.B Contract Specific Safety Plan (CSSP) ..... 6.7

6-11.01.C Task Specific Safety Plan (TSSP)..... 6.8

6-11.02 24-Hour Contact Information ..... 6.8

6-11.03 Illumination ..... 6.8

6-11.04 Personal Protective Equipment (PPE). ..... 6.8

6-11.05 Confined Spaces ..... 6.8

6-11.05.A Contractor Responsibilities and Qualifications..... 6.8

6-11.05.B Agency Responsibilities for Permit Confined Spaces ..... 6.10

6-11.05.C Existing Sewers and Storm Drains..... 6.10

6-11.05.D Joint Agency – Contractor Entries..... 6.11

6-11.06 Respiratory Protection..... 6.11

6-11.07 Hazard Communication..... 6.11

6-11.08 Control Of Hazardous Energy (Lockout/Tagout) ..... 6.11

6-11.09	Control Of Fugitive Emissions .....	6.13
6-11.09.A	Noise .....	6.13
6-11.09.B	Asbestos Containing Material (ACM) .....	6.13
6-11.09.C	Removal and Disposal of Asbestos Concrete Pipe (ACP) .....	6.14
6-11.09.D	Lead .....	6.14
6-11.09.E	Aerosol Transmittable Disease (ATD) Control .....	6.15
6-11.10	Mining and Tunnel Safety .....	6.15
6-12	PUBLIC CONVENIENCE AND SAFETY .....	6.15
6-12.01	Public Convenience .....	6.15
6-12.02	Pedestrian and Bicyclist Access .....	6.15
6-12.02.A	Pedestrians (Temporary Alternate Circulation Path) .....	6.16
6-12.03	Written Notification To Residences and Businesses .....	6.18
6-12.04	Access To Driveways, Houses and Buildings .....	6.18
6-12.05	Property Damage .....	6.18
6-12.06	Erection of Signs To Facilitate Passage of Vehicles .....	6.18
6-12.07	Traffic Obstructions, Delays and Inconveniences .....	6.18
6-12.08	Work On Private Property .....	6.19
6-12.09	Hazardous Conditions Created .....	6.19
6-13	PUBLIC SAFETY AND TRAFFIC CONTROL .....	6.19
6-13.01	General .....	6.19
6-13.02	Responsibility For Safety .....	6.19
6-13.03	Passage of Emergency Vehicles .....	6.19
6-13.04	Furnishing, Installing, and Maintaining Traffic Controls .....	6.19
6-13.04.A	Temporary Traffic Barriers (TTB) .....	6.19
6-13.04.B	Temporary Vehicle Impact Attenuators (Crash Cushions) .....	6.21
6-13.05	Inadequate Traffic Controls and After-Hour Maintenance and Repairs .....	6.22
6-13.06	Competent Flaggers .....	6.22
6-13.07	Construction Signs .....	6.22
6-13.08	Temporary Bridging of Excavations and Trenches .....	6.23
6-13.09	Entering and Leaving the Construction Zone .....	6.24
6-13.10	Existing Traffic Signal and Lighting Systems, Signs and Pavement Markings .....	6.24
6-13.11	Bus Stops .....	6.24
6-13.12	Dust .....	6.24
6-13.13	Removal of Spillage From Roadway .....	6.25
6-13.14	Road Edge Drop-off .....	6.25
6-14	TRAFFIC CONTROL PLANS (TCP) .....	6-27
6-14.01	Traffic Pattern Changes .....	6-27
6-14.02	Traffic Control Plans (TCP) .....	6-27
6-15	BARRICADING OPEN TRENCHES .....	6-28
6-16	EXISTING UTILITIES .....	6-28
6-16.01	General .....	6-28
6-16.02	Maintenance and Protection .....	6-29
6-16.03	Exact Locations Unknown .....	6-29

6-16.04	Underground Service Alert (USA North) .....	6-30
6-16.05	Damage to Existing Utilities.....	6-31
6-17	APPROVAL OF CONTRACTOR'S PLANS NO RELEASE FROM LIABILITY .....	6-31
6-18	CONTRACTOR SHALL NOT MORTGAGE EQUIPMENT.....	6-32
6-19	PROPERTY RIGHTS IN MATERIALS.....	6-32
6-20	EXCAVATION AND TRENCH SAFETY .....	6-32
6-20.01	Permit.....	6-32
6-20.02	Shoring, Bracing, Shielding and Sheeting.....	6-33
6-20.03	Contaminated Soil Management.....	6-33
6-21	PRESERVATION OF PROPERTY .....	6-34
6-22	OVERLOADING, PAVEMENT PROTECTION & REPAIR.....	6-34

**SECTION 7 - PROSECUTION OF THE WORK**

7-1	BEGINNING OF WORK.....	7.1
7-2	AMOUNT OF WORK UNDER CONSTRUCTION.....	7.1
7-3	PRECONSTRUCTION CONFERENCE AND PROGRESS MEETINGS .....	7.1
7-4	WORK TO BE PROSECUTED WITH ADEQUATE SUPERVISION, LABOR FORCE, EQUIPMENT AND METHODS .....	7.1
7-4.01	Superintendence .....	7.1
7-4.02	Labor .....	7.2
7-4.03	Equipment and Methods .....	7.2
7-5	SCHEDULES .....	7.2
7-5.01	Progress Schedule.....	7.3
7-5.02	CPM Schedule .....	7.3
7-5.03	Four-Week Rolling Schedule.....	7.4
7-5.04	Float .....	7.4
7-6	UNUSUAL SITE CONDITIONS .....	7.4
7-7	PURSUANCE OF WORK DURING INCLEMENT WEATHER.....	7.5
7-8	PEAK HOURS, HOURS OF DARKNESS, HOLIDAYS, AND WEEKENDS.....	7.5
7-8.01	Allowable Times and Hours of Work .....	7.5
7-8.02	Off-Period Work.....	7.5
7-8.03	Emergency Repairs.....	7.6
7-8.04	Revocation of Permission For Off-Period Work .....	7.6
7-8.05	Working Shifts .....	7.6
7-8.06	Lane and Road Closures During November/December Holiday Season.....	7.6
7-9	TEMPORARY FACILITIES AND SERVICES .....	7.7
7-10	PROTECTION OF WORK, PERSONS AND PROPERTY.....	7.7
7-11	NOT USED.....	7.7
7-12	DELAYS .....	7.7
7-12.01	Avoidable Delays.....	7.7
7-12.02	Unavoidable Delays .....	7.7
7-13	NOTICE OF DELAYS .....	7.8

7-14 CARELESS DESTRUCTION OF STAKES AND MARKS NO CAUSE FOR DELAY ..... 7.8  
 7-15 TIME OF COMPLETION ..... 7.8  
 7-16 EXTENSION OF TIME NOT A WAIVER..... 7.9  
 7-17 INCLEMENT WEATHER AND CONTRACT TIME ..... 7.9  
 7-18 EXTENSION OF TIME ..... 7.9  
 7-19 SUBSTANTIAL COMPLETION ..... 7.9  
 7-20 CLEANING UP ..... 7.10  
 7-21 FINAL INSPECTION AND FIELD ACCEPTANCE..... 7.10  
 7-22 FINAL ACCEPTANCE AND NOTICE OF COMPLETION..... 7.10

**SECTION 8 - MEASUREMENT AND PAYMENT**

8-1 BASIS AND MEASUREMENT OF PAYMENT QUANTITIES ..... 8.1  
     8-1.01 Unit Price Contracts ..... 8.1  
     8-1.02 Lump Sum or Job Contracts..... 8.1  
     8-1.03 Payment for Mobilization ..... 8.1  
         8-1.03.A Mobilization Not a Pay Item ..... 8.1  
         8-1.03.B Mobilization a Pay Item ..... 8.1  
 8-2 SCOPE OF PAYMENT ..... 8.2  
     8-2.01 General..... 8.2  
     8-2.02 Unit Price Contract ..... 8.2  
     8-2.03 Lump Sum or Job Contract ..... 8.2  
     8-2.04 Final Pay Items..... 8.2  
     8-2.05 Allowances ..... 8.2  
     8-2.06 Payment for Material Not Incorporated in the Work ..... 8.3  
 8-3 WORK TO BE DONE WITHOUT DIRECT PAYMENT ..... 8.3  
 8-4 PAYMENT FOR USE OF COMPLETED PORTIONS OF WORK..... 8.3  
 8-5 PROGRESS PAYMENT PROCEDURES ..... 8.3  
 8-6 INSPECTION AND PROGRESS PAYMENTS NOT A WAIVER OF CONTRACT PROVISIONS..... 8.4  
 8-7 RETENTION ..... 8.4  
     8-7.01 Retention to Ensure Performance ..... 8.4  
     8-7.02 Non-Compliance..... 8.4  
     8-7.03 Substitution Of Securities ..... 8.4  
     8-7.04 Earnest Deposit..... 8.4  
 8-8 WITHHOLDINGS/DENIAL OF PROGRESS PAYMENT REQUEST ..... 8.5  
 8-9 DEDUCTIONS FOR IMPERFECT WORK..... 8.5  
 8-10 LIQUIDATED DAMAGES FOR DELAY ..... 8.5  
 8-11 FINAL ESTIMATE AND PAYMENT ..... 8.6  
 8-12 FINAL PAYMENT TO TERMINATE LIABILITY OF AGENCY ..... 8.6  
 8-13 DISPUTED PAYMENTS ..... 8.6

**SECTION 9 - CHANGES AND CLAIMS**

9-1	AUTHORITY FOR CHANGES .....	9.1
9-2	ORDERING OF CHANGES .....	9.1
9-3	CONSTRUCTION INCENTIVE CHANGE PROPOSAL (CICP) .....	9.1
9-3.01	General.....	9.1
9-3.02	Description .....	9.1
9-3.03	Submittal .....	9.2
9-3.04	Acceptance.....	9.3
9-3.05	Sharing Provisions and Formula .....	9.3
9-4	CHANGES TO THE CONTRACT .....	9.3
9-5	PROSECUTION OF CHANGES TO THE CONTRACT .....	9.3
9-6	COST AND PRICING DATA .....	9.4
9-7	ACCESS TO RECORDS .....	9.4
9-8	PAYMENT FOR CHANGES .....	9.4
9-8.01	Lump Sum Price.....	9.4
9-8.02	Unit Prices .....	9.4
9-8.03	Force Account .....	9.5
9-8.03.A	Labor.....	9.5
9-8.03.B	Materials.....	9.6
9-8.03.C	Equipment.....	9.6
9-8.03.D	Subcontracts .....	9.6
9-9	MARKUPS FOR CHANGED WORK.....	9.6
9-10	COMPENSABLE UNAVOIDABLE DELAYS .....	9.7
9-10.01	Construction Equipment.....	9.7
9-10.02	Jobsite Indirect Costs .....	9.7
9-10.03	Markup for Compensable Unavoidable Delays.....	9.8
9-10.04	Duplicated Overhead Costs .....	9.8
9-11	LIMITATIONS ON PAYMENTS FOR CHANGED WORK.....	9.8
9-12	TIME EXTENSIONS FOR CHANGES .....	9.8
9-13	EFFECT ON SURETIES OF CHANGES TO THE WORK.....	9.8
9-14	CONTRACT CHANGE ORDER (CCO).....	9.8
9-15	ACCEPTANCE OF ORDERS FOR CHANGES.....	9.9
9-16	DISPUTE REGARDING CONTRACT REQUIREMENTS.....	9.9
9-17	NOTICE AND MITIGATION OF POTENTIAL CLAIM .....	9.9
9-17.01	Notice of Potential Claim (NOPC) .....	9.9
9-17.02	Duty to Mitigate Damages .....	9.10
9-18	SUBMISSION OF CLAIMS .....	9.10
9-18.01	Claims Less Than \$375,000.....	9.10
9-18.02	Claims Greater Than \$375,000 .....	9.10
9-19	ENGINEER'S DECISION .....	9.11
9-20	ALTERNATIVE DISPUTE RESOLUTION.....	9.11
9-20.01	Initiation of Mediation .....	9.12



9-20.02	Request for Mediation .....	9.12
9-20.03	Selection Of Mediator .....	9.12
9-20.04	Qualifications Of A Mediator .....	9.12
9-20.05	Vacancies .....	9.12
9-20.06	Representation .....	9.12
9-20.07	Time and Place Of Mediation .....	9.12
9-20.08	Identification Of Matters In Dispute .....	9.12
9-20.09	Authority Of Mediator .....	9.13
9-20.10	Privacy .....	9.13
9-20.11	Confidentiality .....	9.13
9-20.12	No Stenographic Record .....	9.13
9-20.13	Termination Of Mediation .....	9.13
9-20.14	Exclusion Of Liability .....	9.13
9-20.15	Interpretation and Application Of These Mediation Provisions .....	9.13
9-20.16	Expenses .....	9.13
9-21	NO ALTERNATIVE CLAIMS PROCEDURE .....	9.14
9-22	ASSIGNMENT OF CLAIMS .....	9.14

**SECTION 10- ENVIRONMENTAL CONTROLS AT WORK SITE**

10-1	DUST CONTROL .....	10.1
10-2	AIR POLLUTION CONTROL .....	10.1
10-3	BURNING .....	10.1
10-4	EROSION, SEDIMENT, AND WATER POLLUTION CONTROL .....	10.1
10-4.01	General .....	10.1
10-4.02	Regulations, Ordinances, Permits, and Specifications .....	10.1
10-4.03	Agency Requirements .....	10.2
10-4.04	Stormwater Pollution Prevention Plan (SWPPP) .....	10.2
10-4.05	Erosion and Sediment Control Plan (ESCP) .....	10.3
10-4.06	Water Pollution Control Program (WPCP) .....	10.4
10-4.07	Compliance .....	10.4
10-4.08	Required Stormwater Regulatory Compliance Training .....	10.5
10-4.09	Payment .....	10.6
10-5	CONTROL OF WATER IN THE WORK .....	10.5
10-6	NOT USED .....	10.5
10-7	CONTAMINATED OR HAZARDOUS MATERIALS .....	10.6
10-8	USE OF EXPLOSIVES .....	10.6
10-9	SANITARY REGULATIONS .....	10.6
10-10	NOT USED .....	10.6
10-11	CLEANING UP .....	10.6
10-12	ARCHEOLOGICAL AND CULTURAL RESOURCES .....	10.6
10-13	PROTECTION OF EXISTING TREES .....	10.7

# Standard Construction Specifications Technical Provisions

## Table of Contents

### SECTION 11 – PRECONSTRUCTION PHOTOGRAPHS AND RECORD DRAWINGS

11-1	GENERAL.....	11.1
11-2	PRECONSTRUCTION PHOTOGRAPHS.....	11.1
11-3	RECORD DRAWINGS.....	11.2
11-4	MEASUREMENT AND PAYMENT .....	11.2

### SECTION 12 - CONSTRUCTION AREA TRAFFIC CONTROL

12-1	GENERAL.....	12.1
12-2	FLAGGING.....	12.1
12-2.01	Flaggers .....	12.1
12-2.02	Flagging Costs .....	12.1
12-3	TRAFFIC-HANDLING EQUIPMENT AND DEVICES.....	12.2
12-3.01	General.....	12.2
12-3.02	Cones.....	12.2
12-3.03	Portable Channelizers .....	12.2
12-3.04	Telescoping Flag Trees.....	12.2
12-3.05	Portable Flashing Beacons .....	12.2
12-3.06	Barricades .....	12.3
12-3.06.A	Materials.....	12.3
12-3.06.B	Installation and Maintenance .....	12.3
12-3.07	Flashing Arrow Sign (FAS).....	12.3
12-3.08	Construction Area Signs.....	12.4
12-3.08.A	General Requirements.....	12.4
12-3.08.B	Covering Signs.....	12.4
12-3.08.C	Cleaning Signs .....	12.4
12-3.08.D	Used Signs.....	12.4
12-3.08.E	Replacement and Backup Signs.....	12.4
12-3.08.F	Stopping or Parking Prohibition (Tow-Away Zone) .....	12.4
12-3.08.G	Protection, Maintenance, Removal, Storage, and Resetting of Signs .....	12.4
12-3.08.H	Movement of Traffic Signs and Traffic Control Facilities.....	12.5
12-3.08.I	“Road Construction Ahead (C-18)” and “End of Construction (C-13)” Signs .....	12.5
12-3.08.J	Contractor Furnished Signs .....	12.5
12-3.08.K	Obscuring Visibility and Conflicting With Meaning .....	12.5
12-3.08.L	Permanent Construction Signs .....	12.5
12-3.08.M	Removal of Permanent Traffic Control Signs.....	12.6

12-3.08.N	Regulatory Sign Placement and Removal .....	12.6
12-3.08.O	Sign Posts .....	12.6
12-4	MEASUREMENT AND PAYMENT .....	12.6

**SECTION 13- EXISTING FACILITIES**

13-1	GENERAL .....	13.1
13-2	REMOVING EXISTING FACILITIES .....	13.1
13-2.01	Mailboxes .....	13.1
13-2.02	Signs .....	13.2
13-2.03	Survey Monuments .....	13.2
13-2.04	Landscaping Improvements .....	13.2
13-2.05	Abandoned Underground Facilities .....	13.2
13-2.06	Drainage Facilities .....	13.2
13-2.07	Fences .....	13.3
13-2.08	Concrete .....	13.3
13-2.09	Removal of Traffic Stripes and Pavement Markings .....	13.3
13-3	MEASUREMENT AND PAYMENT .....	13.4

**SECTION 14 - RESTORATION OF SURFACES**

14-1	GENERAL .....	14.1
14-2	PRIVATE ROADS .....	14.1
14-3	STREETS AND PARKING LOTS .....	14.1
14-3.01	Aggregate Base .....	14.1
14-3.02	Asphalt Concrete .....	14.1
14-3.03	Seal Coats .....	14.2
14-3.04	Shoulders .....	14.3
14-3.05	Cuts in New Pavement .....	14.3
14-4	CONCRETE .....	14.3
14-5	PAVEMENT MARKINGS .....	14.4
14-6	TEMPORARY PAVING .....	14.4
14-7	MEASUREMENT AND PAYMENT .....	14.5

**SECTION 15 – CLEARING AND GRUBBING**

15-1	GENERAL .....	15.1
15-1.01	Vegetation and Debris .....	15.1
15-1.02	Trees, Shrubs, Ground Cover, and Lawns .....	15.1
15-1.03	Disposal and Salvage .....	15.2
15-1.04	Abandonment of Conduits and Structures .....	15.2
15-1.05	Silt Control .....	15.3
15-1.06	Miscellaneous .....	15.3
15-2	PAYMENT .....	15.3

**SECTION 16 - WATER USED IN CONSTRUCTION**

16-1 GENERAL ..... 16.1  
 16-2 PAYMENT ..... 16.1

**SECTION 17 - DUST CONTROL**

17-1 GENERAL ..... 17.1  
 17-2 DUST PALLIATIVE ..... 17.1  
 17-3 MEASUREMENT AND PAYMENT ..... 17.1

**SECTION 18 - EARTHWORK**

18-1 GENERAL ..... 18.1  
 18-2 ROADWAY EXCAVATION ..... 18.1  
     18-2.01 General ..... 18.1  
     18-2.02 Unsuitable Roadway Excavation and Backfill ..... 18.1  
     18-2.03 Surplus Material ..... 18.1  
     18-2.04 Unsuitable Material in Embankments ..... 18.1  
     18-2.05 Subgrade Preparation ..... 18.1  
     18-2.06 Relative Compaction ..... 18.2  
     18-2.07 Measurement and Payment ..... 18.3  
 18-3 STRUCTURE EXCAVATION AND BACKFILL ..... 18.3  
     18-3.01 General ..... 18.3  
     18-3.02 Control Density Backfill ..... 18.3  
     18-3.03 Final Quantity ..... 18.3  
     18-3.04 Measurement and Payment ..... 18.4  
 18-4 DITCH AND CHANNEL EXCAVATION ..... 18.4  
     18-4.01 General ..... 18.4  
     18-4.02 Grade Control - Lined Channels ..... 18.4  
     18-4.03 Unsuitable Ditch and Channel Excavation and Backfill ..... 18.4  
     18-4.04 Unsuitable or Surplus Material Disposal ..... 18.4  
     18-4.05 Channel Backfill ..... 18.4  
     18-4.06 Channel Embankments ..... 18.4  
     18-4.07 Pipe Adjustments ..... 18.5  
     18-4.08 Payment ..... 18.5  
     18-4.09 Final Pay Quantities ..... 18.5  
 18-5 UNSUITABLE MATERIAL EXCAVATION ..... 18.5  
     18-5.01 General ..... 18.5  
     18-5.02 Backfill ..... 18.6  
     18-5.03 Geotextile Fabric ..... 18.6  
     18-5.04 Approximate Quantity ..... 18.6  
     18-5.05 Payment ..... 18.6  
 18-6 IMPORTED BORROW ..... 18.7  
     18-6.01 General ..... 18.7

18-6.02	Agreements .....	18.7
18-6.03	Placement .....	18.7
18-7	SURPLUS MATERIAL DISPOSAL .....	18.8
18-7.01	General.....	18.8
18-7.02	Agreement.....	18.8
18-7.03	Permits .....	18.8
18-7.04	Payment .....	18.8
18-8	CLASS “C” SUBGRADE .....	18.8
18-8.01	General.....	18.8
18-8.02	Preparation.....	18.9
18-8.03	Payment .....	18.9

**SECTION 19 - TRENCH EXCAVATION, BEDDING AND BACKFILL**

19-1	TRENCH EXCAVATION .....	19.1
19-1.01	Exploratory Excavation.....	19.1
19-1.02	Trench Width .....	19.1
19-1.02.A	Storm Drain Pipe.....	19.1
19-1.02.B	Sewer Pipe.....	19.1
19-1.02.C	Water Pipe .....	19.2
19-1.03	Pavement Cutting.....	19.2
19-1.04	Maximum Length of Open Trench.....	19.3
19-1.05	Control of Water .....	19.3
19-1.06	Shoring and Bracing.....	19.3
19-1.07	Special Foundation Treatment .....	19.3
19-1.08	Excavation Method.....	19.4
19-1.09	Payment .....	19.4
19-2	PIPE BEDDING AND BACKFILLING OF TRENCHES .....	19.4
19-2.01	Pipe Bedding .....	19.4
19-2.01.A	Sewer .....	19.5
19-2.01.B	Storm Drain .....	19.5
19-2.01.C	Water Distribution Systems.....	19.5
19-2.02	Initial Backfill.....	19.5
19-2.02.A	Sewer .....	19.6
19-2.02.B	Storm Drain .....	19.6
19-2.02.C	Water Distribution Systems.....	19.6
19-2.03	Trench Backfill.....	19.7
19-2.04	Payment .....	19.8

**SECTION 20 - LANDSCAPING**

20-1 GENERAL ..... 20.1

20-2 MATERIALS ..... 20.1

    20-2.01 Root Control Barrier ..... 20.1

    20-2.02 Topsoil ..... 20.1

    20-2.03 Soil Amendment ..... 20.1

    20-2.04 Liquid Green Dye ..... 20.2

    20-2.05 Mulch ..... 20.2

20-3 EROSION CONTROL ..... 20.2

    20-3.01 Seeding and Fertilizing ..... 20.2

    20-3.02 Measurement and Payment ..... 20.3

20-4 PLANTING ..... 20.3

    20-4.01 Pesticides ..... 20.3

    20-4.02 Preparing Planting Areas ..... 20.3

    20-4.03 Header Boards ..... 20.4

    20-4.04 Planting ..... 20.4

        20-4.04.A Preparation for Ground Covers ..... 20.5

        20-4.04.B Preparation for Trees and Shrubs ..... 20.6

        20-4.04.C Preparation for Turf ..... 20.6

    20-4.05 Watering ..... 20.7

    20-4.06 Plant Replacement ..... 20.7

    20-4.07 Plant Establishment Work ..... 20.8

    20-4.08 Inspection for Plant Establishment Work ..... 20.9

    20-4.09 Measurement and Payment ..... 20.9

20-5 IRRIGATION SYSTEMS ..... 20.9

    20-5.01 Maintain Existing Water Supply ..... 20.9

    20-5.02 Remove Existing Plants for Trenching ..... 20.9

    20-5.03 Electrical Service for Electric Automatic Irrigation Systems ..... 20.10

        20-5.03.A Components ..... 20.10

        20-5.03.B Controllers ..... 20.10

        20-5.03.C Control Wire, Electrical Conduit and Pull Boxes ..... 20.10

        20-5.03.D Testing ..... 20.11

    20-5.04 Installation ..... 20.11

        20-5.04.A General ..... 20.11

        20-5.04.B Irrigation Sleeving ..... 20.12

        20-5.04.C Water Line Crossovers ..... 20.12

        20-5.04.D Trenching and Backfilling ..... 20.12

    20-5.05 Pipe ..... 20.13

        20-5.05.A Subsurface Dripperline ..... 20.14

        20-5.05.B Valves and Valve Boxes ..... 20.14

        20-5.05.C Quick Coupling Valve ..... 20.15

        20-5.05.D Backflow Preventers ..... 20.15

20-5.05.E	Master Valve/Flow Meter Assembly .....	20.16
20-5.05.F	Air Vacuum Relief Valve .....	20.16
20-5.05.G	Flush Valve .....	20.16
20-5.05.H	Sprinklers and Emitters .....	20.16
20-5.05.I	Pressure Testing .....	20.16
20-5.05.J	Repairs and Coverage .....	20.17
20-5.06	Measurement and Payment .....	20.17
20-6	RECORD DRAWINGS AND CONTROLLER CHARTS .....	20.17

**SECTION 21 - FINISHING ROADWAY**

21-1	GENERAL .....	21.1
21-2	PAYMENT .....	21.1

**SECTION 22 - BASE MATERIAL**

22-1	LIME TREATED BASE .....	22.1
22-2	AGGREGATE BASE .....	22.1
22-3	CEMENT TREATED BASES .....	22.1
22-4	MEASUREMENT AND PAYMENT .....	22.2

**SECTION 23 - ASPHALT CONCRETE**

23-1	GENERAL .....	23.1
23-2	MIX FORMULA AND DESIGN .....	23.1
23-3	AGGREGATES AND BINDERS .....	23.1
23-3.01	Aggregates .....	23.1
23-3.02	Binders .....	23.2
23-3.03	Quality Control Testing .....	23.3
23-4	RECYCLED ASPHALT PAVEMENT .....	23.3
23-5	HAULING EQUIPMENT .....	23.4
23-6	NOT USED .....	23.4
23-7	NOT USED .....	23.4
23-8	ASPHALT CONCRETE PLACEMENT METHOD .....	23.4
23-8.01	General .....	23.4
23-8.02	Pre-Overlay Preparation .....	23.5
23-8.03	Spreading .....	23.6
23-8.03.A	Hand Spreading .....	23.6
23-8.03.B	Mechanical Spreading Equipment .....	23.7
23-8.04	Joints .....	23.7
23-8.05	Compacting .....	23.8
23-8.05.A	Density requirements - Minor Streets .....	23.8
23-8.05.B	Density Requirements - Major Streets .....	23.8
23-9	ASPHALT CONCRETE PLACEMENT ACCEPTANCE TESTING .....	23.8
23-9.01	Pavement Density Testing .....	23.8

23-9.01.A	Lot Sizes .....	23.8
23-9.01.B	Maximum Theoretical Density (Rice) .....	23.8
23-9.01.C	Core Density .....	23.8
23-9.02	Pay Factors .....	23.9
23-10	ASPHALT RUBBER HOT MIX-GAP GRADED (ARHM-GG) .....	23.10
23-10.01	Type 1 Asphalt-Rubber Binder .....	23.11
23-10.02	Type 2 Asphalt-Rubber Binder .....	23.12
23-10.03	Aggregate .....	23.13
23-10.04	Equipment .....	23.13
23-10.04.A	Haulers .....	23.13
23-10.04.B	Asphalt Heating Tank .....	23.13
23-10.04.C	Mechanical Blender .....	23.14
23-10.04.D	Storage/Reaction Tank .....	23.14
23-10.04.E	Supply System .....	23.14
23-10.04.F	Temperature Gage .....	23.14
23-10.05	Placement .....	23.14
23-11	MEASUREMENT AND PAYMENT .....	23.14
23-12	COMPENSATION ADJUSTMENTS FOR PRICE INDEX FLUCTUATIONS .....	23.15

**SECTION 24 - SIDE FORMS AND HEADERS**

24-1	GENERAL .....	24.1
24-2	FORM JOINTS .....	24.1
24-3	TIMBER SIDE FORMS .....	24.1
24-4	METAL SIDE FORMS .....	24.2
24-5	FORM MAINTENANCE .....	24.2
24-6	PAYMENT .....	24.2

**SECTION 25 - PORTLAND CEMENT CONCRETE PAVEMENT**

25-1	GENERAL .....	25.1
25-2	SUBGRADE .....	25.1
25-3	SIDE FORMS .....	25.1
25-4	CONCRETE CUTTING .....	25.1
25-5	EXPANSION JOINTS IN ALLEY PAVEMENT .....	25.1
25-6	PLACING CONCRETE PAVEMENT .....	25.2
25-7	FINISHING CONCRETE PAVEMENT .....	25.2
25-8	CURING PORTLAND CEMENT CONCRETE PAVEMENT .....	25.2
25-9	PROTECTION OF PAVEMENT .....	25.2
25-10	PAVEMENT DAMAGE AND REPAIR .....	25.2
25-11	MEASUREMENT .....	25.3
25-12	PAYMENT .....	25.3



**SECTION 26 - COLD PLANE ASPHALT CONCRETE PAVEMENT**

26-1 GENERAL ..... 26.1  
 26-2 PAVEMENT KEYCUTTING ..... 26.1  
 26-3 PAVEMENT PLANING..... 26.2  
 26-4 PLANED PAVEMENT CONFORMS ..... 26.3  
 26-5 PAVEMENT REINFORCING FABRIC ..... 26.3  
 26-6 MEASUREMENT ..... 26.3  
 26-7 PAYMENT..... 26.4

**SECTION 27 - CURBS, GUTTERS, SIDEWALKS, AND DRAINAGE STRUCTURES**

27-1 GENERAL ..... 27.1  
 27-2 FORMS ..... 27.1  
 27-3 CONCRETE IN CURBS, GUTTERS, AND SIDEWALKS ..... 27.1  
     27-3.01 Expansion Joints, Weakened Plane Joints, and Score Marks ..... 27.2  
     27-3.02 Finishing Concrete Surfaces ..... 27.2  
     27-3.03 Curing of Concrete ..... 27.2  
     27-3.04 Median Openings and Allowance for Sign Placement on Ends of Medians and Traffic Islands ..... 27.3  
     27-3.05 Minor Curb and Gutter and Sidewalk Replacement ..... 27.3  
 27-4 DAMAGE REPAIRS ..... 27.3  
 27-5 SIDEWALKS ..... 27.4  
     27-5.01 Widening of Existing Sidewalk ..... 27.4  
     27-5.02 Slope of Sidewalks ..... 27.4  
 27-6 CURB DOWELS AND REINFORCEMENT..... 27.4  
 27-7 EXTRUDED CONSTRUCTION..... 27.4  
 27-8 CURB RAMPS AND DRIVEWAYS ..... 27.5  
 27-9 RECONSTRUCTION OF CURBS, GUTTER, AND SIDEWALK TO ACCOMMODATE DRIVEWAYS ..... 27.6  
 27-10 RECONSTRUCTION OF CURBS, GUTTER, AND CURB AND GUTTER TO ACCOMMODATE SEWER AND STORM DRAIN SERVICE INSTALLATION ..... 27.6  
 27-11 CURB AND GUTTER TESTING AND TOLERANCE..... 27.6  
 27-12 EXISTING INLET DESIGNS, DISCONTINUED FOR USE IN NEW CONSTRUCTION.. 27.6  
 27-13 DROP INLETS AND CATCH BASINS ..... 27.7  
 27-14 MEASUREMENT ..... 27.7  
 27-15 PAYMENT..... 27.8

**SECTION 28 - PILING**

28-1 GENERAL ..... 28.1  
 28-2 PAYMENT..... 28.1

**SECTION 29-PRESTRESSING CONCRETE**

29-1 GENERAL ..... 29.1

**SECTION 30 - CONCRETE STRUCTURES**

30-1	GENERAL .....	30.1
30-2	FOOTINGS .....	30.1
30-3	FORMS .....	30.1
30-4	REMOVAL OF FORMS.....	30.1
30-5	REINFORCEMENT.....	30.2
30-6	MIXING AND TRANSPORTING .....	30.2
30-7	PLACING CONCRETE .....	30.2
30-7.01	General.....	30.2
30-7.02	Placement .....	30.2
30-7.03	Vibrating .....	30.3
30-8	BONDING .....	30.3
30-9	CONCRETE PLACED UNDER WATER.....	30.3
30-10	EXPANSION JOINTS .....	30.4
30-11	CONSTRUCTION JOINTS .....	30.4
30-12	WATERSTOPS .....	30.4
30-13	CURING .....	30.4
30-14	PROTECTING CONCRETE .....	30.4
30-15	SURFACE FINISH .....	30.5
30-15.01	General.....	30.5
30-15.02	Smooth Form Finish (Sacking).....	30.5
30-15.03	Ordinary Surface Finish.....	30.5
30-15.04	Tolerance on Concrete Paving.....	30.5
30-15.05	Concrete Repair .....	30.6
30-15.05.A	General .....	30.6
30-15.05.B	Replacement with Concrete.....	30.6
30-15.05.C	Mortar (Dry Pack).....	30.6
30-15.05.D	Shotcrete.....	30.6
30-15.05.E	Topping .....	30.6
30-16	MEASUREMENT AND PAYMENT .....	30.6

**SECTION 31 - REINFORCEMENT**

31-1	GENERAL .....	31.1
31-2	MEASUREMENT AND PAYMENT .....	31.1

**SECTION 32 – WATERPROOFING**

32-1	GENERAL .....	32.1
------	---------------	------

**SECTION 33 - STEEL STRUCTURES**

33-1	GENERAL .....	33.1
33-2	PAYMENT.....	33.1

**SECTION 34 - SIGNS**

34-1 GENERAL ..... 34.1  
 34-2 OVERHEAD SIGN STRUCTURES..... 34.1  
 34-3 ROADSIDE SIGNS ..... 34.1  
     34-3.01 Traffic Sign Types ..... 34.1  
     34-3.02 Sign Panel Fastening Hardware ..... 34.1  
     34-3.03 Park Signs ..... 34.2  
     34-3.04 Construction..... 34.2  
     34-3.05 Sign Panel Installation ..... 34.2  
 34-4 MEASUREMENT AND PAYMENT ..... 34.2

**SECTION 35 – TIMBER STRUCTURES**

35-1 GENERAL ..... 35.1

**SECTION 36 - CAST-IN-PLACE CONCRETE PIPE (CIPCP)**

36-1 GENERAL ..... 36.1  
 36-2 PIPEMAKING EQUIPMENT ..... 36.1  
 36-3 TRENCH EXCAVATION ..... 36.1  
 36-4 SPECIAL FOUNDATION TREATMENT ..... 36.2  
 36-5 CONCRETE ..... 36.2  
 36-6 PLACING CONCRETE ..... 36.3  
 36-7 START AND CLOSE SECTIONS ..... 36.4  
 36-8 CONSTRUCTION JOINTS ..... 36.4  
 36-9 FINISH ..... 36.4  
 36-10 FORMS ..... 36.5  
 36-11 CURING ..... 36.5  
 36-12 FIELD QUALITY CONTROL ..... 36.6  
     36-12.01 Placement Tests ..... 36.6  
     36-12.02 Crack Repair ..... 36.6  
 36-13 REIMBURSEMENT FOR FIELD QUALITY CONTROL ..... 36.6  
 36-14 BACKFILL ..... 36.7  
 36-15 LOADING DURING CURING ..... 36.7  
 36-16 MEASUREMENT AND PAYMENT ..... 36.7

**SECTION 37 - BORING AND JACKING**

37-1 GENERAL ..... 37.1  
 37-2 DIRECT JACKING REINFORCED CONCRETE PIPE ..... 37.1  
 37-3 INSTALLATION OF CONDUCTOR PIPE ..... 37.1  
 37-4 INSTALLING CARRIER PIPE INSIDE CONDUCTOR PIPE ..... 37.2  
 37-5 VOIDS ..... 37.2  
 37-6 TOLERANCES ..... 37.2  
 37-7 DRY BORING UNDER CURB, GUTTER AND SIDEWALK..... 37.3

37-8 WET BORING OF SMALL DIAMETER PIPELINES ..... 37.3  
 37-9 MEASUREMENT AND PAYMENT ..... 37.3

**SECTION 38 - SEWER AND STORM DRAIN CONSTRUCTION**

38-1 GENERAL ..... 38.1  
 38-2 MATERIALS ..... 38.1  
 38-3 EXCAVATION AND BEDDING ..... 38.1  
 38-4 LAYING PIPE ..... 38.1  
     38-4.01 Placement ..... 38.1  
     38-4.02 Lines and Grades ..... 38.2  
     38-4.03 Grade Tolerance - Sewer ..... 38.2  
     38-4.04 Grade Tolerance – Storm Drain ..... 38.2  
     38-4.05 Existing Utilities and Facilities ..... 38.2  
     38-1.01 Flusher Branches ..... 38.3  
 38-5 SEWER SERVICES ..... 38.3  
     38-5.01 Service Sewer Relocations and Reconnections ..... 38.4  
     38-5.02 Connections to Existing Sewers ..... 38.5  
     38-5.03 Connections to Manholes ..... 38.5  
 38-6 STORM DRAIN INLET LATERALS ..... 38.5  
 38-7 PIPE JOINTS ..... 38.5  
 38-8 PROTECTIVE COVERING ..... 38.5  
     38-8.01 Sewer Pipe ..... 38.5  
     38-8.02 Storm Drain Pipe ..... 38.5  
 38-9 BACKFILLING PIPE TRENCHES ..... 38.6  
 38-10 TESTING OF PIPE ..... 38.6  
     38-10.01 Tests for Obstructions ..... 38.6  
     38-10.02 Tests for Leakage ..... 38.7  
         38-10.02.A Air Test for Leakage - Sewer ..... 38.7  
         38-10.02.B Hydrostatic Test for Leakage - Sewer ..... 38.9  
         38-10.02.C Water Infiltration Test - Sewer ..... 38.9  
         38-10.02.D Air Test for Leakage - Storm Drain ..... 38.10  
         38-10.02.E Hydrostatic Test for Leakage – Storm Drain ..... 38.17  
     38-10.03 Tests for Deflection ..... 38.17  
         38-10.03.A Sewer ..... 38.17  
         38-10.03.B Storm Drain ..... 38.18  
     38-10.04 Television Inspection (TVI) ..... 38.18  
         38-10.04.A Safety ..... 38.19  
         38-10.04.B Sample Video and TVI Report Submittal ..... 38.19  
         38-10.04.C TVI Equipment Submittal ..... 38.19  
         38-10.04.D Procedure ..... 38.20  
         38-10.04.E Pre- and Post Rehabilitation TVI ..... 38.22  
         38-10.04.F New Construction Sewer and Storm Drain TVI ..... 38.23  
         38-10.04.G Non-Conforming TVI ..... 38.24  
     38-10.05 Lamping of Storm Drain Inlet Laterals ..... 38.24

38-10.06 Pipeline and Electronic Data Acceptance Criteria ..... 38.24  
 38-11 NOT USED..... 38.25  
 38-12 MEASUREMENT AND PAYMENT ..... 38.25

**SECTION 39 - MANHOLES**

39-1 GENERAL..... 39.1  
 39-2 CONCRETE MANHOLES ..... 39.1  
     39-2.01 Precast Concrete Sewer Manholes..... 39.1  
     39-2.02 Concrete Storm Drain Manholes ..... 39.2  
 39-3 SADDLE SEWER MANHOLES ..... 39.4  
     39-3.01 Saddle Sewer Manholes ..... 39.4  
     39-3.02 Saddle Storm Drain Manholes ..... 39.4  
 39-4 MANHOLE TESTING..... 39.5  
     39-4.01 Sanitary Sewer Manholes ..... 39.5  
     39-4.02 Storm Drain Manholes..... 39.6  
         39-4.02.A Manhole Vacuum Test..... 39.6  
         39-4.02.B Test by the Exfiltration Method..... 39.6  
         39-4.02.C Failure to Pass the Test - Records of Tests ..... 39.7  
         39-4.02.D Inspection ..... 39.7  
 39-5 ADJUST STORM DRAIN MANHOLES TO GRADE ..... 39.7  
 39-6 RECONSTRUCT STORM DRAIN MANHOLES ..... 39.8  
 39-7 ABANDON STORM DRAIN MANHOLES ..... 39.8  
 39-8 MEASUREMENT AND PAYMENT ..... 39.8

**SECTION 40 - MISCELLANEOUS FACILITIES**

40-1 STREET BARRICADES..... 40.1  
     40-1.01 General..... 40.1  
     40-1.02 Measurement and Payment ..... 40.1

**SECTION 41 - WATER DISTRIBUTION SYSTEMS**

41-1 GENERAL..... 41.1  
 41-2 WATER PIPE ..... 41.1  
 41-3 EXCAVATION..... 41.1  
 41-4 LAYING WATER PIPES ..... 41.2  
 41-5 UNDERGROUND WARNING TAPE AND LOCATING WIRE ..... 41.3  
 41-6 THRUST BLOCKS AND RESTRAINED JOINTS..... 41.4  
 41-7 SETTING FIRE HYDRANTS..... 41.4  
 41-8 SETTING GATE VALVES ..... 41.4  
 41-9 BACKFLOW PREVENTION ASSEMBLIES..... 41.4  
 41-10 FIRE PROTECTION SERVICE ASSEMBLY ..... 41.5  
 41-11 BLOW-OFFS..... 41.5  
 41-12 PIPE BEDDING AND BACKFILLING OF TRENCHES ..... 41.5

41-13	REPAVING WATER PIPE TRENCHES.....	41.5
41-14	WATER SERVICES .....	41.5
41-15	WATER METERS AND METER BOXES.....	41.6
41-16	DISINFECTION OF WATER MAINS.....	41.6
41-17	PRESSURE TESTING WATER MAIN INSTALLATIONS .....	41.8
41-18	CONNECTIONS TO EXISTING WATER MAINS.....	41.8
41-19	REGULATIONS RELATING TO SANITARY HAZARDS .....	41.9
41-20	SETTING, ADJUSTING AND LOCATING VALVE BOXES .....	41.9
41-21	ADJUSTING AIR RELEASE VALVES .....	41.9
41-22	RECYCLED WATER.....	41.9
41-22.01	General.....	41.9
41-22.02	Offsite .....	41.10
41-22.03	Pipes .....	41.10
41-22.04	Valve Boxes and Covers in Non-Traffic Areas .....	41.10
41-22.05	Valve Boxes and Covers in Traffic Areas.....	41.10
41-22.06	Meter Boxes and Meter Box Covers .....	41.10
41-22.07	Blow-Off and ARV Boxes and Covers.....	41.11
41-22.08	NOT USED.....	41.11
41-22.09	Onsite (Non County).....	41.11
41-22.10	Backflow Devices .....	41.11
41-22.11	Valves.....	41.11
41-22.12	Valve Boxes and Covers .....	41.11
41-22.13	Hose Bibs .....	41.11
41-22.14	Quick Coupling Valves .....	41.11
41-22.15	Sprinklers .....	41.11
41-22.16	Warning Signs.....	41.11
41-22.17	Special Cross Connection Test .....	41.11
41-23	PAYMENT .....	41.12

**SECTION 42 - RELOCATION AND MAINTENANCE OF UTILITY FACILITIES**

42-1	RELOCATION OF UTILITY FACILITIES .....	42.1
42-2	MEASUREMENT AND PAYMENT .....	42.1

**SECTION 43 - CLEANING PIPELINES**

43-1	GENERAL .....	43.1
43-2	MEASUREMENT AND PAYMENT .....	43.1

**SECTION 44 – SHOTCRETE, CAST CONCRETE CHANNEL LINING, AND GROUTED COBBLE**

44-1	SHOTCRETE .....	44.1
44-1.01	Description .....	44.1
44-1.02	Materials.....	44.1
44-1.03	Proportions .....	44.1

44-1.04	Mixing .....	44.1
44-1.05	Surface Preparation .....	44.1
44-1.06	Placing.....	44.1
44-1.07	Curing and Protection.....	44.2
44-1.08	Reinforcement .....	44.2
44-1.09	Expansion Joints .....	44.2
44-1.10	Measurement and Payment .....	44.2
44-2	CAST CONCRETE CHANNEL LINING .....	44.2
44-2.01	Description .....	44.2
44-2.02	Materials.....	44.2
44-2.03	Placement and Thickness .....	44.3
44-2.04	Reinforcement .....	44.3
44-2.05	Joints .....	44.3
44-2.06	Weep Holes.....	44.4
44-2.07	Cutoff Walls .....	44.4
44-2.08	Finishing.....	44.4
44-2.09	Curing and Protection.....	44.4
44-2.10	Measurement and Payment .....	44.4
44-3	GROUTED COBBLES .....	44.5
44-3.01	Description .....	44.5
44-3.02	Materials and Placement.....	44.5
44-3.03	Measurement and Payment .....	44.5

**SECTION 45 - CHAIN LINK FENCE**

45-1	GENERAL .....	45.1
45-2	MATERIALS.....	45.1
45-3	CONSTRUCTION .....	45.1
45-4	MEASUREMENT AND PAYMENT .....	45.1

**SECTION 46 - SURVEY MONUMENTS**

46-1	GENERAL .....	46.1
46-2	MATERIALS.....	46.1
46-3	CONSTRUCTION .....	46.1
46-4	MEASUREMENT AND PAYMENT .....	46.2

**SECTION 47 - RAILINGS AND BARRIERS**

47-1	GENERAL.....	47.1
------	--------------	------

**SECTION 48 - TRAFFIC STRIPES AND PAVEMENT MARKINGS**

48-1	GENERAL .....	48.1
48-2	THERMOPLASTIC TRAFFIC STRIPES AND PAVEMENT MARKINGS.....	48.1

48-3	PAINTED TRAFFIC STRIPES AND PAVEMENT MARKINGS.....	48.3
48-4	PREFORMED TRAFFIC STRIPES AND PAVEMENT MARKINGS .....	48.3
48-4.01	General.....	48.3
48-4.02	High Reflective Preformed Traffic Striping .....	48.4
48-4.03	Preformed Traffic Stripes .....	48.4
48-4.04	Twelve-Inch Preformed Traffic Striping (White and Yellow) and Markings .....	48.4
48-5	PLACEMENT .....	48.5
48-6	MEASUREMENT AND PAYMENT .....	48.5

**SECTION 49 - SIGNALS, LIGHTING AND ELECTRICAL SYSTEMS**

49-1	GENERAL.....	49.3
49-1.01	Definitions.....	49.3
49-1.02	Abbreviations.....	49.3
49-1.03	Regulation and Code.....	49.3
49-1.04	Equipment List and Drawings.....	49.3
49-1.05	Ordering of Signal and Lighting Equipment.....	49.4
49-1.06	Maintaining Existing and Temporary Electrical Systems.....	49.4
49-1.07	Scheduling of Work .....	49.5
49-1.08	Safety Precautions .....	49.5
49-1.09	Inspection .....	49.5
49-1.10	Signal Turn-On .....	49.5
49-1.11	Contractor Supplied Equipment .....	49.6
49-2	MATERIALS AND INSTALLATION.....	49.6
49-2.01	Trench Excavation and Backfill .....	49.6
49-2.02	Earth Saw Trenching.....	49.6
49-2.03	Removing and Replacing Improvements .....	49.7
49-2.04	Foundations.....	49.7
49-2.05	Standards, Steel Pedestals and Posts .....	49.8
49-2.05.A	NOT USED.....	49.8
49-2.05.B	Placement of Standards, Enclosures, Posts and Associated Devices.....	49.8
49-2.05.C	Final Location of Traffic Signal Poles.....	49.8
49-2.06	Conduit.....	49.9
49-2.07	Pull Boxes .....	49.9
49-2.08	Conductors .....	49.10
49-2.08.A	Signal Interconnect Cable.....	49.11
49-2.08.B	Interconnect Cable Testing After Installation .....	49.11
49-2.09	Wiring .....	49.11
49-2.10	Bonding and Grounding .....	49.12
49-2.11	Service .....	49.12
49-2.11.A	Metered Service (120/208 Volt, 120/240 Volt) .....	49.13
49-2.11.B	Metered Service with Encapsulated Step-Down Transformer (277/480 Volt to 120-240 Volt) .....	49.14
49-2.11.C	Unmetered Service (120/208 Volt, 120/240 Volt).....	49.15
49-2.11.D	Unmetered Service (277/480 Volt).....	49.16



49-2.11.E	Unmetered Service with Encapsulated Step-Down Transformer (277/480 Volt to 120/240 Volt)	49.16
49-2.11.F	Service Can and Battery Backup Unit (BBU)	49.17
49-2.12	Testing	49.20
49-2.13	Painting	49.20
49-3	CONTROLLER ASSEMBLIES	49.21
49-4	TRAFFIC SIGNAL FACES AND FITTINGS	49.22
49-4.01	Vehicle Signal Faces	49.22
49-4.02	Programmable Directional Louvers	49.22
49-4.03	Backplates	49.22
49-4.04	Pedestrian Signal Faces	49.22
49-4.05	Audible Pedestrian Signals	49.23
49-5	DETECTORS	49.24
49-5.01	Vehicle Detectors	49.24
49-5.01.A	Construction Materials	49.24
49-5.01.B	Installation Details	49.25
49-5.01.C	Splicing Details	49.26
49-5.01.D	Video Detector System	49.27
49-5.02	Emergency Vehicle Detector Cable, Detectors, and Phase Selectors	49.29
49-5.03	Pedestrian Push Buttons	49.29
49-6	LIGHTING	49.29
49-6.01	High Pressure Sodium Luminaires	49.29
49-6.02	Lamps and Ballasts	49.30
49-6.03	Internally Illuminated Street Name Signs	49.30
49-6.04	Photoelectric Controls	49.31
49-6.04.A	Photoelectric Unit	49.31
49-6.04.B	Contactors	49.32
49-6.04.C	Contactor and Test Switch Housing	49.32
49-6.04.D	Wiring	49.32
49-7	AGENCY-SUPPLIED EQUIPMENT	49.32
49-8	REMOVING AND SALVAGING ELECTRICAL EQUIPMENT	49.32
49-9	PAYMENT	49.32

**SECTION 50 - CONSTRUCTION MATERIALS**

50-1	PORTLAND CEMENT	50.1
50-2	CONCRETE AGGREGATES	50.1
50-3	WATER FOR CONCRETE	50.1
50-4	PREMOULDED EXPANSION JOINT FILLER	50.1
50-5	PORTLAND CEMENT CONCRETE	50.1
50-5.01	Composition	50.1
50-5.02	Proportioning	50.2
50-5.03	Mixing	50.2
50-5.04	Water Control	50.3
50-6	CURING COMPOUNDS FOR CONCRETE	50.3

50-7	AGGREGATE BASES .....	50.3
50-8	PIT RUN BASE (GRADED) .....	50.4
50-9	COBBLES .....	50.4
50-10	GEOTEXTILE FABRIC .....	50.4
	50-10.01 Nonwoven Geotextile Fabric .....	50.4
	50-10.02 Woven Geotextile Fabric .....	50.5
50-11	CEMENT-TREATED BASES .....	50.5
50-12	LIME TREATED BASE .....	50.5
50-13	SAND .....	50.5
	50-13.01 River Sand.....	50.5
	50-13.02 Graded Sand .....	50.5
50-14	CRUSHED ROCK .....	50.6
50-15	CONTROL DENSITY BACKFILL/CONTROLLED LOW STRENGTH MATERIAL.....	50.6
	50-15.01 Control Density Backfill .....	50.6
	50-15.02 Controlled Low Strength Material (CLSM).....	50.7
	50-15.02.A Properties.....	50.7
	50-15.02.B Mixing, Transporting And Placing .....	50.7
	50-15.02.C Backfill.....	50.7
	50-15.02.D Quality Control .....	50.7
50-16	CLEAN CRUSHED ROCK .....	50.8
50-17	ASPHALT, LIQUID ASPHALT, AND ASPHALTIC EMULSION .....	50.8
50-18	VITRIFIED CLAY PIPE (VCP) .....	50.8
50-19	SUBSURFACE DRAINS .....	50.9
50-20	NONREINFORCED CONCRETE PIPE (CP).....	50.9
50-21	REINFORCED CONCRETE PIPE, DRAINAGE (RCPD).....	50.9
50-22	REINFORCED CONCRETE PIPE, SEWER (RCPS).....	50.9
50-23	CONCRETE CYLINDER PIPE (CCP) AND CEMENT MORTAR LINED AND COATED STEEL PIPE (CLCS).....	50.17
50-24	ACRYLONITRILE-BUTADIENE-STYRENE (ABS) PIPE .....	50.18
50-25	DUCTILE IRON PIPE (DIP), AND CAST IRON AND DUCTILE IRON FITTINGS.....	50.18
	50-25.01 All Pipe Except Sanitary Sewers .....	50.18
	50-25.02 Sanitary Sewers .....	50.18
	50-25.02.A Pipe.....	50.19
	50-25.02.B Sanitary Sewer Joints/Fittings.....	50.19
	50-25.02.C Protecto 401 supplemental specification:.....	50.20
50-26	POLYVINYL CHLORIDE (PVC) PIPE FOR SEWERS AND DRAINAGE .....	50.21
	50-26.01 PVC Gravity Sanitary Sewers .....	50.21
	50-26.02 Small PVC Pressure Sanitary Sewers .....	50.22
	50-26.03 Large PVC Pressure Sanitary Sewers .....	50.22
	50-26.04 PVC Pipe for Drainage .....	50.23
50-27	CORRUGATED STEEL PIPE (CSP) .....	50.23
50-28	RIBBED STEEL PIPE (RSP) .....	50.24
50-29	CORRUGATED ALUMINUM PIPE (CAP).....	50.26
50-30	HIGH DENSITY POLYETHYLENE PIPE (HDPE) .....	50.26
50-31	FIELD ASSEMBLED PLATE CULVERT .....	50.28

50-32	REINFORCING STEEL.....	50.28
50-33	CURB DOWEL AND TIE BARS.....	50.28
50-34	SEWER AND STORM DRAIN CASTINGS.....	50.28
50-35	WATER PIPE.....	50.29
50-36	WATER PIPE FITTINGS.....	50.30
50-37	FIRE HYDRANTS.....	50.30
50-38	VALVES.....	50.30
50-38.01	Gate Valves.....	50.31
50-38.02	Butterfly Valves.....	50.31
50-38.03	Air Release/Vacuum Valves.....	50.32
50-39	VALVE BOXES, COVERS, DROP CAPS, AND SERVICE VALVE BOXES.....	50.32
50-40	WATER SERVICE CONNECTION MATERIALS.....	50.32
50-40.01	General.....	50.32
50-40.02	Water Meters and Meter Boxes.....	50.33
50-41	JOINT MATERIALS FOR MANHOLES.....	50.33
50-42	FENCING - CHAIN LINK.....	50.33
50-43	LANDSCAPING MATERIALS.....	50.35
50-43.01	Topsoil.....	50.35
50-43.02	Commercial Fertilizer.....	50.36
50-43.03	Soil Amendment.....	50.36
50-43.04	Iron Sulfate.....	50.37
50-43.05	Straw.....	50.37
50-43.06	Fiber.....	50.37
50-43.07	Mulch.....	50.37
50-43.08	Planting Mix.....	50.37
50-43.09	Seed.....	50.37
50-43.09.A	Turf Seed.....	50.38
50-43.09.B	Wildflower Seed for Hydroseeding.....	50.38
50-43.10	Stabilizing Emulsion.....	50.38
50-43.11	Lumber.....	50.38
50-43.12	Tree Stakes and Ties.....	50.39
50-43.13	Root Control Barrier.....	50.39
50-43.14	Plants.....	50.39
50-43.14.A	Turf.....	50.40
50-43.14.B	Trees.....	50.40
50-43.15	Water.....	50.41
50-43.16	Irrigation Pipe.....	50.42
50-43.16.A	Steel Pipe.....	50.42
50-43.16.B	Plastic Pipe.....	50.42
50-43.17	Subsurface Dripperline.....	50.43
50-43.18	Irrigation Sleeving Conduit.....	50.43
50-43.19	Sprinklers and Emitters.....	50.43
50-43.20	Automatic Irrigation Controllers.....	50.43
50-43.21	Quick Coupling Valves.....	50.43

50-43.22 Control Valves .....	50.44
50-43.23 Master Control Valve/Flow Sensor Assembly .....	50.44
50-43.24 Valve Boxes .....	50.44
50-43.25 Backflow Preventers.....	50.44
50-43.26 Concrete.....	50.45
50-43.27 Filter Assembly Units.....	50.45
50-43.28 IPS Flexible PVC Hose .....	50.45
50-43.29 Gate Valves.....	50.45
50-43.30 Air Vacuum Relief Valve.....	50.45
50-43.31 Flush Valve Assembly .....	50.45
50-43.32 Unions .....	50.45
50-43.33 Irrigation Control Wires.....	50.46
50-43.34 Pull Boxes .....	50.46
50-43.35 Pressure Gauges .....	50.46
50-44 ENGINEERING FABRICS .....	50.46
50-45 PAINT.....	50.46
50-46 LIQUID ASPHALT .....	50.46
50-47 ASPHALTIC EMULSION .....	50.46
50-48 EPOXY.....	50.48

# **Standard Construction Specifications Appendices**

## **Table of Contents**

### **Appendix A – Sample Forms**

Agreement

Escrow Agreement for Deposit of Securities in Lieu of Cash Retention on Public Works Project

Exhibit “A” – Certification of Deposit of Securities

Exhibit “B” – Authorization to Release Securities Deposited by Contractor

Exhibit “C” – Notification of Failure of Performance, Demand for Sale of Securities and

Demand for Payment

Payment Bond

Performance Bond

Contract Change Order

### **Appendix B – Holiday Moratorium Streets (maps) 2/1/05**

## Appendix C – Standard Drawings

### STREETS

Drawing Number	Title
4-13	Typical Street Sections At Residential Driveways (3/05)
4-14	Commercial Driveways Type A-6 (3/05)
4-15-A	Special Commercial Frontage Entrance Type A-7 (3/05)
4-15-B	Sidewalk Ramp For A-7 Driveways Without Additional R/W (3/05)
4-21	Bus Turnouts (3/05)
4-22	Bus Stop Details (3/05)
4-23-A	Sidewalk Ramps Detail (6/05)
4-23-B	Sidewalk Ramp Detail For Plaza Areas (3/05)
4-23-C	A.C. Conforms To New Sidewalk Ramp Construction (3/05)
4-24	Sidewalk Ramp Placement (8/05)
4-25	Typical Curb And Gutter Sections (11/07)
4-26	Cross Gutter (3/05)
4-27	Barrier Curb Detail (3/05)
4-28	Under Sidewalk Drain (3/05)
4-29	Meandering Sidewalk Standards (3/05)
4-31	Trench Sections In Improved Areas (3/05)
4-32	Pavement Widening Detail (3/05)
4-33	Street Sign Fully Reflectorized (3/05)
4-34	Street Name Sign Placement Details (3/05)
4-35	Street Name Sign On Street Light Pole Placement Detail(3/05)
4-36	Street Name Sign Installation On Street Light Pole (3/05)
4-37	Street Name Sign Placement Details (3/05)
4-38	Street Closure Timber Barricade (3/05)
4-39	Signs And Barricades At Abrupt Change Of Pavement Width (3/05)
4-40	Sidewalk Barricade (3/05)
4-41-A	Utility Pole Placement Locations (3/05)
4-41-B	Utility Pole Placement Locations (3/05)
4-42	A.C. Sidewalk Conform (3/05)
4-43	Standard Concrete Joint Details (3/05)
4-44	Median Detail (6/07)
4-45	Striping And Pavement Marking Details (3/07)

## STREET LIGHTS

Drawing Number	Title
5-6	Signals, Lighting And Electrical Systems Base Location For Street Lights (1/01)
5-7	Signals, Lighting And Electrical Systems Direct Service Installation To Street Lighting Standard (1/01)
5-8	Signals, Lighting And Electrical Systems Metered Service Enclosure (Can) (120/208v, 120/240v) (1/01)
5-9	Signals, Lighting And Electrical Systems Metered Service Enclosure (Can) With Step-Down Transformer (277/480V To 120/240V) (1/01)
5-10	Signals, Lighting And Electrical Systems - Unmetered Service Enclosure (Can) (120/208V, 120/240V, 277/480V) (1/01)
5-11	Signals, Lighting And Electrical Systems - Unmetered Service Enclosure (Can) With Step-Down Transformer (277/480V To 120/240V) (1/01)
5-12	Signals, Lighting And Electrical Systems Details For Direct Service Installation Street Lighting Power (1/01)
5-16	Signals, Lighting And Electrical Systems Type 'B' Street Light Standard (10/03)
5-17	Signals, Lighting And Electrical Systems Type 'A' Street Light Standard (1/01)
5-19	Local Solid State Pedestrian Controller Base Detail (5/01)
5-20A	Signals, Lighting And Electrical Systems Pull Box (1/01)
5-20B	Signals, Lighting And Electrical Systems Traffic Rated Pull Box With Steel Traffic Cover (1/01)
5-22	IISNS Support Arm Typical Clamp Detail (2/05)
5-23	IISNS Support Arm Mounting Detail (2/06)
5-24	Induction Detectors (3/05)
5-25	Type "B" Detector Handhole Detail (12/07)
5-26	Traffic Signal Cabinet Details And Guard Post Detail (12/07)
5-27	Traffic Signal Controller Cabinet & Service Can With Battery Backup Foundations (12/07)
5-29	Metered Service Enclosure With Battery Backup (6/05)

## SANITARY SEWER

Drawing Number	Title
7-4C-01	Signature Blocks (11/07)
7-4C-02	Sewer Pipe Bedding And Initial Backfill (11/07)
7-4C-03	Maximum Trench Width For Extra Strength Vitrified Clay Pipe (11/07)
7-4C-04	Manhole Location Restriction (11/07)
7-4C-10	Manhole Connection To Ex. 6" Collector (11/07)
7-4C-11	Sewer Service Replacement (11/07)
7-4C-12	Utility Crossing (11/07)
7-4C-13A	Sewer Services (11/07)
7-4C-13B	Alternate Abs Sewer Service Wye Connection Top View (11/07)
7-4C-14A	VCP, Abs Cleanout To Grade (11/07)
7-4C-14B	Modified VCP Or Abs Cleanout To Grade (11/07)
7-4C-15A	ABS/PVC Backwater Valve To Grade (11/07)
7-4C-15B	ABS/PVC Backwater Valve To Grade – Multi-Story Structure (11/07)
7-4C-16A	Flusher Branch For Pipe Diameters 8" And Less (11/07)
7-4C-16B	Flusher Branch For Pipe Diameters Greater Than 8" (11/07)
7-4C-20	Conductor Casing Detail (11/07)
7-4C-21	Cathodic Protection - Steel Casing (11/07)
7-4C-30	Standard Precast 48" Sewer Manholes (11/07)
7-4C-31	Standard Precast 60" & 72" Sewer Manholes (11/07)
7-4C-40	4-Way Manhole Base (11/07)
7-4C-41	90° Manhole Base Camera Channel Detail (11/07)
7-4C-42	Manhole Base Grouting Unused Channel At 90° Detail (11/07)
7-4C-43	Manhole Base Grouting Unused Channel At 180° Detail (11/07)
7-4C-50	Standard Precast 48" Manhole Flat Slab Top Detail (11/07)
7-4C-51	Standard Precast 60" And 72" Slab Top Detail (11/07)
7-4C-52	Inside Gravity Drop Connections (11/07)
7-4C-53	Stainless Steel Adjustable Clamping Brackets (11/07)
7-4C-70	Standard Flusher Branch Frame And Cover (11/07)
7-4C-71	Flat Slab Top Frame & Cover (11/07)
7-4C-72	Grey Iron Standard 24" Manhole Frame & Cover (11/07)
7-4C-73	Grey Iron Standard 36" Manhole Frame & Cover (11/07)
7-4C-74	Ductile Iron Standard 24" Manhole Frame & Cover (11/07)
7-4C-75	Ductile Iron Standard 32" Manhole Frame & Cover (11/07)
7-4C-80	Trench Dam Detail (11/07)
7-4C-81	Sampling Vault (11/07)
7-4C-82	Flow Measuring Manhole (11/07)
7-4C-84	Packaged Flow Measuring Vault (11/07)
7-5C-30	Cathodic Protection – Ductile Iron Pipe (11/07)
7-5C-40	Thrust Block Details (11/07)
7-5C-50	Force Main Tie-In At Manhole (11/07)
7-5C-51	Force Main Tie-In Drop Connections (11/07)
7-5C-70	Standard 60" Air Release Valve Sewer Manhole (11/07)
7-5C-80	Pipe Locator Ribbon And Locator Ball Installation (11/07)
7-6C-10	Pump Station Site Layout (11/07)
7-6C-11	Pump Station Site Layout Corner Lot (11/07)



## SANITARY SEWER

Drawing Number	Title
7-6C-12	Commercial Driveway (11/07)
7-6C-13	Sidewalk Ramp Detail (11/07)
7-6C-14	Turn-Around & Hammer-Head For Access Roads (11/07)
7-6C-20	Circular Wetwell (11/07)
7-6C-50	Canopy Schematic (11/07)
7-6C-60	Reducer Pressure Principal Assembly (11/07)
7-6C-90	Removable Bollard Detail (11/07)
7-6E-10	Electrical Panel Layout (11/07)
7-6E-11	Electrical Detail #5 (11/07)
7-6E-12	JB Mounting Detail (11/07)
7-6E-13	Conduit Riser From Ground & Duct Bank Section (11/07)
7-6E-14	Grounding Details (11/07)
7-6E-15	Pole Base Detail With Antenna (11/07)
7-6E-20	Single Line Diagram Small Pump Station (11/07)
7-6E-21	Single Line Diagram Medium Pump Station (11/07)
7-6E-22	Single Line Diagram Large Pump Station (11/07)
7-6E-30	Pump Controls Small Pump Station (11/07)
7-6E-31	Pump Controls Medium And Large Pump Station (11/07)
7-6I-30	P&Id (11/07)
7-6I-31	Bubbler Panel Schematic (11/07)
7-6I-32	Bubbler Tube Junction Box & Captive Air Tube Mounting Details (11/07)
7-6I-33	Typical Rtu Layout Detail (11/07)
7-6I-34	Typical Rtu Elevation View (11/07)
7-6I-35	Typical Details, Bill Of Materials & Name Plate Schedule (11/07)
7-6I-36	Typical Diagram Control Power Distribution (11/07)
7-6I-37	Typical Rtu Plc Layout (11/07)
7-6I-38	Typical Upper Board Wiring Diagram (Power Connections) (11/07)
7-6I-39	Typical Lower Board Wiring Diagram (Di 0-7) (11/07)
7-6I-40	Typical Lower Board Wiring Diagram (Di 16-23) (11/07)
7-6I-41	Typical Lower Board Wiring Diagram (Di 24-36) (11/07)
7-6I-42	Typical Lower Board Wiring Diagram (Ai) (11/07)
7-6I-43	Typical Lower Board Wiring Diagram (Do 0-7) (11/07)
7-6I-44	Typical Rs 482 Upper Board Wiring Diagram (11/07)
7-6M-20	Circular Wet Well (11/07)
7-6M-30	Valve Vault (11/07)
7-6M-40	Bypass Vault (11/07)
7-6M-50	Odor Control Pad (11/07)

## DOMESTIC WATER SUPPLY

Drawing Number	Title
8-1	1"-2" Water Service Installation (12/03 )
8-2A	Fire Hydrant Installation Water Main In Street (12/03)
8-2B	Fire Hydrant Installation Water Main Not In Roadway (12/03)
8-3A	Thrust Block Bearing Area (12/03)
8-3B	Pipe Restrained Length (12/03)
8-4A	Locating Wire For Water Mains And Services (12/03)
8-4B	Locating Wire Station (12/03)
8-5	Valve Box Installation And Operating Nut Extension (12/03)
8-6A	1" residential metered water service (3/05)
8-6B	1-1/2" or 2" commercial metered water service (12/03)
8-6C	3" to 6" water service & meter installation (12/03)
8-6D	1" residential water service post marker (12/03)
8-7	Fire protection detail (12/07)
8-8A	Reduced Pressure Backflow Preventer 1" To 2 (12/03)
8-8B	Reduced Pressure Backflow Preventer 3" And Larger (12/03)
8-8C	Double Check Detector Or Rp Principle Detector 6" And Larger (12/03)
8-9A	Maximum Deflection For Ductile Iron Pipe (12/03)
8-9B	Maximum Deflection For Pvc Pipe (12/03)
8-10	Utility Crossing (12/03)
8-11	Utility Crossing Under Existing Water Main (12/03)
8-12	Temporary Blow Off Assembly (12/03)
8-13A	4" Blow Off Assembly At End Of Main (12-03)
8-13B	4" Blow Off Assembly At End Of Cul-De-Sac (12/03)
8-13C	4" In-Line Blow-Off Assembly (12/03)
8-14A	1" Combination Air/Vacuum Valve (12/03)
8-14B	2" Combination Air/Vacuum Valve (12/03)
8-15	Water Main Cut-In (12/03)
8-16	Recycled Water Sign (12/03)
8-17	Trench Detail (12/03)
8-18	Transition Sleeve (12/03)
8-19	Typical Well Site (12/03)

## STORM DRAINAGE

Drawing Number	Title
9-1	Storm Drain Pipe Bedding And Initial Backfill (03/07)
9-7A	Standard Precast Concrete Drainage Manhole (03/07)
9-8A	Type A Saddle Manhole (11/98)
9-9	Grey Cast Iron Standard 24" Manhole Frame & Cover (03/07)
9-10	Grey Cast Iron Standard 36" Manhole Frame & Cover (02/07)
9-11	Grate Type Manhole Cover (03/07)
9-13B	Drop Inlet Type B (01/05)
9-13C	Drop Inlet Type C (09/00)
9-14	Welded Steel Grate Frame (01/05)
9-15	Welded Steel Grate (11/98)
9-16	Center Support Assembly For Multiple Grates (11/98)
9-17	Catch Basin Face Plate Assembly And Protection Bar (12/00)
9-18	Drop Inlet Type F (03/07)
9-19	Drop Inlet Type G (12/00)
9-21	Corrugated Metal Pipe Drainage Inlet Type I (11/98)
9-22	Corrugated Pipe Fittings (11/98)
9-23	Pipe Connections (1/03)
9-24	Lined Channel Section (7/98)
9-26G	Trash Rack 24"-36" Pipe (1/03)
9-26H	Pipe Headwall, Endwall Wingwall Structure (11/06)
9-27	Erosion Control Ditch Discharge (11/98)
9-28	Barbed Wire And Wire Mesh Fences (11/98)
9-29	Chain Link Fence (12/99)
9-30	Utility Stream Crossing (11/98)
9-31	Flexible Connector Pipe To Manhole (02/07)
9-32	Construction Site Sign (02/07)
9-33	Utility Crossing (04/97)
9-34	Cast Iron 24" Manhole Frame & Cover For Type G And 300-1 Inlet (02/07)
300-1	Curb Opening Catch Basin (12/02)
308-0	Monolithic Catch Basin Connection (03/07)
309-0	Catch Basin Reinforcement (01/05)

EROSION CONTROL

Drawing Number	Title
11-1	STABILIZED CONSTRUCTION SITE ACCESS (09/06)
11-2	SEDIMENT TRAP VEGETATED OUTLET (09/06)
11-3	SEDIMENT TRAP STABILIZED OUTLET (09/06)
11-4	FIBER ROLLS (09/06)
11-5	SILT FENCE (09/06)
11-6	CONCRETE WASHOUT (09/06)
11-7	INLET SEDIMENT CONTROL (09/06)
11-8	STORM DRAIN INLET FILTER BAG (09/06)
11-9	EROSION CONTROL BLANKETS/MATS CHANNEL INSTALLATION (09/06)
11-10	EROSION CONTROL BLANKETS/MATS SLOPE INSTALLATION (09/06)

## LANDSCAPING

Drawing Number	Title
L-1	Tree Planting (11/00)
L-2	Shrub Planting (11/00)
L-3	Remote Control Valve (11/00)
L-4	Drip Irrigation Valve Assembly (12/07)
L-5A	Gate Valve (12/07)
L-6	Master Valve/Flow Sensor (Below Grade) (12/07)
L-6A	1-1/2" & 2" Size Master Valve/Flow Sensor (Above Grade) (12/07)
L-6B	3" Size And Larger Master Valve/Flow Sensor (Above Grade) (12/07)
L-7	Flush Valve (12/07)
L-8	Air Relief Valve (11/00)
L-9	Pop-Up Rotor Sprinkler (11/00)
L-10	Pop-Up Spray Sprinkler (11/00)
L-11	Bubbler Sprinkler Head (11/00)
L-12	Drip Irrigation Multi-Outlet Emitter (11/00)
L-13	Subsurface In-Line Drip Irrigation Layout (11/00)
L-14	Subsurface In-Line Drip Irrigation Center-Feed Supply Manifold (11/00)
L-15	Subsurface In-Line Drip Irrigation End-Feed Supply Manifold (11/00)
L-16	Deep Watering Pipe For Trees (11/00)
L-17	Irrigation Controller Enclosure (11/00)
L-18	Irrigation System Trenching (11/00)
L-19	Drinking Fountain (11/00)
L-20	Post And Cable Fencing (11/00)
L-21	Knock-Down Bollard & Stationary Bollard (11/00)
L-22	Removable Bollard (11/00)
L-23	Concrete Walk (11/00)
L-24	Concrete Mowstrip (11/00)
L-25	Biketrail Paving Section (11/00)
L-26	Roadway Median Section (11/00)
L-27	Redwood Headerboard (11/00)
L-28	Double Pipe Gate (11/00)
L-29	Single Pipe Gate (11/00)