

SECTION 1 – TERMS AND DEFINITIONS
TABLE OF CONTENTS

Section		Page
1-1	GENERAL	1.1
1-2	ABBREVIATIONS	1.1
1-3	DEFINITIONS	1.3

SECTION 2 – BID REQUIREMENTS AND CONDITIONS
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
2-1 BID PROPOSALS	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	2.2
2-3 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE WORK.....	2.2
2-4 SUBSURFACE CONDITIONS	2.2
2-5 CONTRACTORS/SUBCONTRACTORS TO BE LICENSED AND REGISTERED	2.3
2-6 COMPETENCY OF BIDDERS.....	2.3
2-7 JOINT VENTURE BIDS.....	2.3
2-8 SUBCONTRACTORS	2.3
2-9 ADDENDA	2.4
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 STATEMENT OF NON COLLUSION.....	2.6
2-16 RELIEF OF BIDDERS	2.6

SECTION 3 - AWARD AND EXECUTION OF CONTRACT
TABLE OF CONTENTS

Section	Page
3-1 TIME OF AWARD	3.1
3-2 CONSIDERATION OF BIDS	3.1
3-3 AWARD OF CONTRACT	3.1
3-3.01 Notice Of Intent To Award	3.1
3-3.01.A Cone of Silence	3.1
3-3.01.B Bid Documents Protest	3.2
3-3.01.C Bid Award Protest	3.2
3-4 PERFORMANCE AND PAYMENT BONDS	3.2
3-4.01 Performance Bond	3.2
3-4.02 Payment Bond	3.3
3-5 NOTIFICATION OF SURETY COMPANIES	3.3
3-6 RETURN OF BID GUARANTEES	3.3
3-7 EXECUTION OF CONTRACT	3.3
3-8 FAILURE TO EXECUTE CONTRACT	3.3
3-9 INSURANCE	3.4
3-9.01 General Liability	3.4
3-9.01.A Additional Insured – Completed Operations	3.5
3-9.01.B Additional Insured – Protocols	3.5
3-9.01.C General Aggregate Limits	3.6
3-9.01.D Waiver of Subrogation	3.6
3-9.01.E Primary Insurance	3.6
3-9.01.F Separation of Insured	3.6
3-9.01.G Insurance Proceeds	3.6
3-9.01.H Extension of Completed Operations	3.6
3-9.01.I Contractual Limitations	3.6
3-9.01.J Additional Insured Requirements for Sub-Contractors	3.7
3-9.02 Automobile Liability	3.7
3-9.03 Workers' Compensation	3.8
3-9.04 Excess or Umbrella Liability	3.8
3-9.05 Contractor's Equipment	3.8
3-9.06 Railroad Protective Liability	3.8
3-9.07 Builder's Risk Insurance	3.9
3-9.08 Contractor's Pollution Liability Insurance	3.9
3-9.09 Other Provisions	3.10
3-9.10 Deductibles and Self-Insured Retention	3.12
3-9.11 Verification of Coverage	3.12
3-9.12 Notification of Claim or Lawsuit	3.12
3-10 ESCROW BID DOCUMENTS	3.12
3-10.01 Ownership	3.12
3-10.02 Purpose	3.13
3-10.03 Format and Contents	3.13
3-10.04 Submittal	3.14
3-10.05 Storage	3.15
3-10.06 Examination	3.15
3-10.07 Final Disposition	3.15

SECTION 4 - SCOPE OF WORK
TABLE OF CONTENTS

Section	Page
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.....	4.2
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	4.3
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

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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 ENTITIES	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-Agency Furnished Surveys	5.8
5-9.03 Contractor Surveys-Construction Staking and Survey Monuments	5.8
5-9.04 Traffic Control	5.9
5-10 RESPONSIBILITY FOR ACCURACY	5.9
5-11 DUTIES AND POWERS OF INSPECTORS	5.9
5-12 INSPECTION.....	5.9
5-13 QUALITY OF MATERIALS AND WORKMANSHIP	5.10
5-14 SUBSTITUTIONS	5.10
5-14.01 NOT USED	5.10
5-14.02 Documentation.....	5.10
5-15 PREPARATION FOR TESTING	5.11
5-16 MATERIALS SAMPLING AND TESTING.....	5.11
5-16.01 Relative Compaction.....	5.11
5-17 APPROVAL OF MATERIALS.....	5.12
5-17.01 Sources Of Supply	5.12
5-17.02 Plant Inspection.....	5.12
5-18 PROVISIONS FOR EMERGENCIES	5.12
5-19 RIGHT TO RETAIN IMPERFECT WORK.....	5.12
5-20 REMOVAL OF REJECTED MATERIALS OR WORK.....	5.12
5-21 5-21 TEMPORARY SUSPENSION OR DELAY OF WORK.....	5.13
5-22 5-22 TERMINATION OF CONTRACT.....	5.13
5-22.01 Reasons for Termination	5.13
5-22.01.A Contractor Insolvent.....	5.13
5-22.01.B Completion Delay	5.13
5-22.01.C Abandonment or Unsatisfactory Performance	5.13
5-22.01.D Termination of Contract for Convenience	5.14
5-22.02 Notice of Termination	5.14
5-22.03 Payments to Contractor Upon Termination of Contract.....	5.15
5-22.03.A Payments to Contractor upon Termination for Convenience.....	5.15

5-22.03.B	Payments to Contractor upon Termination for Default.....	5.16
5-22.04	Agency Completion	5.16
5-22.04.A	Payment for Agency Completion	5.16
5-22.04.B	Agency Completion Not a Waiver of Agency Rights	5.16
5-23	TERMINATION OF UNSATISFACTORY SUBCONTRACTS	5.16

SECTION 6 - LEGAL RELATIONS AND RESPONSIBILITIES

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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 Contractor's License	6.2
6-1.09 Use of Pesticides	6.2
6-1.10 Reporting Requirements and Sanctions	6.3
6-1.11 Subcontracting	6.4
6-1.12 Occupational Safety and Health	6.45
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	6.5
6-3 CONTRACTOR'S LEGAL ADDRESS	6.5
6-4 CONTRACTOR NOT AN AGENT OF AGENCY	6.5
6-5 SUBSTITUTION OF SUBCONTRACTORS	6.5
6-6 ASSIGNMENT OF CONTRACT	6.6
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, AND CERTIFICATIONS	6.7
6-11 EXISTING UTILITIES	6.8
6-11.01 General	6.8
6-11.02 Maintenance and Protection	6.8
6-11.03 Exact Locations Unknown	6.9
6-11.04 Underground Service Alert (USA North)	6.9
6-11.05 Damage to Existing Utilities	6.10
6-12 APPROVAL OF CONTRACTOR'S PLANS NO RELEASE FROM LIABILITY	6.12
6-13 CONTRACTOR MUST NOT MORTGAGE EQUIPMENT	6.12
6-14 PROPERTY RIGHTS IN MATERIALS	6.12

SECTION 7 - PROSECUTION OF THE WORK

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
7-1 BEGINNING OF WORK.....	2
7-2 AMOUNT OF WORK UNDER CONSTRUCTION.....	2
7-3 PRECONSTRUCTION CONFERENCE AND PROGRESS MEETINGS.....	2
7-4 WORK TO BE PROSECUTED WITH ADEQUATE SUPERVISION, LABOR FORCE, EQUIPMENT AND METHODS	2
7-4.01 Superintendence	7.1
7-4.02 Labor	3
7-4.03 Equipment and Methods	3
7-5 SCHEDULES.....	7.2
7-5.01 CPM Schedule – Minor Projects.....	7.3
7-5.02 CPM Schedule – Major Projects.....	7.3
7-5.03 Four-Week Rolling Schedule	7.4
7-5.04 Float.....	7.4
7-5.05 Schedule Acceptance.....	7.5
7-6 UNUSUAL SITE CONDITIONS.....	7.5
7-7 PURSUANCE OF WORK DURING INCLEMENT WEATHER.....	7
7-8 PEAK HOURS, HOURS OF DARKNESS, HOLIDAYS, AND WEEKENDS	7
7-8.01 Allowable Times and Hours of Work.....	7
7-8.02 Off-Period Work	7.6
7-8.03 Emergency Repairs.....	7.7
7-8.04 Revocation of Permission For Off-Period Work	8
7-8.05 Working Shifts.....	8
7-8.06 Lane and Road Closures During November/December Holiday Season.....	8
7-9 TEMPORARY FACILITIES AND SERVICES	7.7
7-10 PROTECTION OF WORK, PERSONS AND PROPERTY.....	7.8
7-11 NOT USED	9
7-12 DELAYS	9
7-12.01 Avoidable Delays.....	9
7-12.02 Unavoidable Delays.....	7.8
7-12.03 Time Impact Analysis.....	7.9
7-13 NOTICE OF DELAYS	7.10
7-14 CARELESS DESTRUCTION OF STAKES AND MARKS NO CAUSE FOR DELAY.....	11
7-15 TIME OF COMPLETION.....	11
7-16 EXTENSION OF TIME NOT A WAIVER	11
7-17 INCLEMENT WEATHER AND CONTRACT TIME	7.10
7-18 EXTENSION OF TIME.....	7.11
7-19 SUBSTANTIAL COMPLETION	7.11
7-20 CLEANING UP	7.11
7-21 FINAL INSPECTION, FIELD ACCEPTANCE, AND NOTICE OF COMPLETION.....	7.12
7-21.01 Final Inspection.....	7.12
7-21.02 Field Acceptance	7.12
7-21.03 Notice of Completion.....	7.12
7-22 FINAL ACCEPTANCE	7.12

SECTION 8 - MEASUREMENT AND PAYMENT
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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	8.2
8-1.03.B Mobilization a Pay Item.....	8.2
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.....	8.3
8-2.06 Payment for Material Not Incorporated into 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

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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
9-3.03.A Pre-Submittal	9.2
9-3.03.B CICP 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.A.(1) Actual Wages.....	9.5
9-8.03.A.(2) Labor Surcharge	9.5
9-8.03.A.(3) Subsistence and Travel.....	9.6
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	9.7
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	9.8
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.....	9.9
9-18 SUBMISSION OF CONSTRUCTION CLAIMS.....	9.10
9-18.01 In General	9.10
9-18.02 Purpose.....	9.10
9-18.03 Claim Documentation.....	9.10
9-18.04 Claim Resolution Process	9.11

9-18.05	Qualifications of A Mediator.....	9.12
9-18.06	Vacancies	9.12
9-18.07	Representation	9.12
9-18.08	Time and Place of Mediation.....	9.13
9-18.09	Identification of Matters in Dispute.....	9.13
9-18.10	Authority of Mediator	9.13
9-18.11	Privacy	9.13
9-18.12	Confidentiality.....	9.13
9-18.13	No Stenographic Record.....	9.13
9-18.14	Termination of Mediation.....	9.14
9-18.15	Exclusion of Liability	9.14
9-18.16	Interpretation and Application of These Mediation Provisions	9.14
9-18.17	Expenses	9.14
9-19	RESERVED	9.14
9-20	RESERVED	9.14
9-21	NO ALTERNATIVE CLAIMS PROCEDURE	9.14
9-22	ASSIGNMENT OF CLAIMS	9.14
9-23	NO WAIVER OF GOVERNMENT CLAIM PROCESS.....	9.14

SECTION 10 - ENVIRONMENTAL CONTROLS AT WORK SITE

TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
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 Agency Requirements	10.2
	10-4.03 Stormwater Pollution Prevention Plan (SWPPP)	10.2
	10-4.04.A General	10.2
	10-4.04.B Contents	10.3
	10-4.04.C Preparation, Review, Acceptance	10.3
	10-4.04.D Implementation.....	10.3
	10-4.04.E Reporting	10.3
	10-4.05 Erosion and Sediment Control Plan (ESCP).....	10.3
	10-4.06 Water Pollution Control Program (WPCP)	10.5
	10-4.07 Compliance	10.5
	10-4.08 Required Stormwater Regulatory Compliance Meeting	10.6
	10-4.09 Payment.....	10.6
10-5	CONTROL OF NON-STORM WATER IN THE WORK.....	10.6
10-6	NOT USED	10.6
10-7	CONTAMINATED OR HAZARDOUS MATERIALS.....	10.6
10-8	USE OF EXPLOSIVES	10.7
10-9	SANITARY REGULATIONS	10.7
10-10	NOT USED	10.7
10-11	CLEANING UP.....	10.7
10-12	ARCHEOLOGICAL AND CULTURAL RESOURCES	10.7
10-13	PROTECTION OF EXISTING TREES.....	10.7

SECTION 11 – PRECONSTRUCTION PHOTOGRAPHS AND RECORD DRAWINGS
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
11-1 GENERAL	11.1
11-2 PRECONSTRUCTION PHOTOGRAPHS	11.1
11-3 RECORD DRAWINGS.....	11.1
11-4 MEASUREMENT AND PAYMENT	11.2

SECTION 12 - SAFETY, PUBLIC CONVENIENCE, AND TRAFFIC CONTROL

TABLE OF CONTENTS

12-1	SAFETY	12.1
	12-1.01 Safety Regulations, Programs, and Plans	12.1
	12-1.01.A Injury and Illness Prevention Program (IIPP) and Code of Safe Work Practices (CSWP).....	12.1
	12-1.01.B Contract Specific Safety Plan (CSSP).....	12.1
	12-1.01.C Task Specific Safety Plan (TSSP).....	12.1
	12-1.02 24-Hour Contact Information	12.2
	12-1.03 Illumination	12.2
	12-1.04 Personal Protective Equipment (PPE)	12.2
	12-1.05 Confined Spaces	12.24
	12-1.05.A Contractor Responsibilities and Qualifications	12.2
	12-1.06 Respiratory Protection	12.3
	12-1.07 Hazard Communication	12.3
	12-1.08 Control Of Hazardous Energy (Lockout/Tagout)	12.3
	12-1.09 Control Of Fugitive Emissions	12.4
	12-1.09.A Products and Chemicals	12.4
	12-1.09.B Noise	12.5
	12-1.09.C Asbestos Containing Material (ACM)	12.5
	12-1.09.D Removal and Disposal of Asbestos Concrete Pipe (ACP).....	12.5
	12-1.09.E Lead.....	12.6
12-2	PUBLIC CONVENIENCE AND SAFETY	12.6
	12-2.01 Public Convenience.....	12.6
	12-2.02 Pedestrian and Bicyclist Access	12.7
	12-2.02.A Pedestrians (Temporary Alternate Circulation Path).....	12.7
	12-2.02.A(1) Components	12.7
	12-2.02.A(2) Continuous Width.....	12.7
	12-2.02.A(3) Width at Passing Spaces	12.7
	12-2.02.A(4) Walkway Grade and Cross Slope.....	12.7
	12-2.02.A(5) Surface	12.8
	12-2.02.A(6) Location	12.8
	12-2.02.A(7) Protection.....	12.8
	12-2.02.A(8) Lighting	12.8
	12-2.03 Written Notification To Residences and Businesses	12.9
	12-2.04 Access To Driveways, Houses, and Buildings	12.9
	12-2.05 Property Damage	12.9
	12-2.06 Erection of Signs To Facilitate Passage of Vehicles	12.9
	12-2.07 Traffic Obstructions, Delays, and Inconveniences	12.9
	12-2.08 Work On Private Property.....	12.9
	12-2.09 Hazardous Conditions Created.....	12.9
12-3	PUBLIC SAFETY AND TRAFFIC CONTROL.....	12.10
	12-3.01 General.....	12.10
	12-3.02 Responsibility For Safety.....	12.10
	12-3.03 Passage of Emergency Vehicles	12.10
	12-3.04 Furnishing, Installing, and Maintaining Temporary Traffic Controls	12.10
	12-3.04.A Temporary Traffic Barriers (TTB)	12.10
	12-3.04.B Crash Cushions	12.12
	12-3.05 Inadequate Traffic Controls and After-Hour Maintenance and Repairs	12.12
	12-3.06 Competent Flaggers.....	12.13

	12-3.07 Construction Signs.....	12.13
	12-3.08 Temporary Bridging of Excavations and Trenches	12.13
	12-3.09 Entering and Leaving the Construction Zone	12.14
	12-3.10 Existing Traffic Signal and Lighting Systems, Signs and Pavement Markings...	12.14
	12-3.11 Bus Stops.....	12.15
	12-3.12 Removal of Spillage From Roadway	12.15
	12-3.13 Road Edge Drop-off	12.15
12-4	TRAFFIC CONTROL PLANS.....	12.15
12-5	BARRICADING OPEN TRENCHES	12.17
12-6	EXCAVATION AND TRENCH SAFETY	12.17
	12-6.01 Permit	12.17
	12-6.02 Shoring, Bracing, Shielding, and Sheeting.....	12.17
	12-6.03 Contaminated Soil Management	12.17

**SECTION 13 - EXISTING FACILITIES
TABLE OF CONTENTS**

<u>Section</u>	<u>Page</u>
13-1 GENERAL.....	13.1
13-1.01 Preservation of Property.....	13.1
13-1.02 Overloading, Pavement Protection & Repair	13.1
13-2 REMOVING EXISTING FACILITIES	13.2
13-2.01 Mailboxes.....	13.2
13-2.02 Signs.....	13.2
13-2.03 Survey Monuments	13.2
13-2.04 Existing Landscaping Improvements	13.3
13-2.05 Abandoned Underground Facilities	13.3
13-2.06 Drainage Facilities.....	13.3
13-2.07 Fences.....	13.3
13-2.08 Concrete	13.4
13-2.09 Removal of Traffic Stripes and Pavement Markings	13.4
13-3 MEASUREMENT AND PAYMENT	13.4

SECTION 14 - RESTORATION OF SURFACES
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
14-1 GENERAL	14.1
14-2 PRIVATE ROADS.....	14.1
14-3 STREETS AND PARKING LOTS.....	14.1
14-3.01 Trench Restoration	14.1
14-3.01.A Roadways with pavement less than 3 years old.....	14.1
14-3.01.B Roadways with 3 to 5 year old pavement.....	14.2
14-3.01.C Roadways with pavement greater than 5 years old.....	14.2
14-3.01.C (1) Minor Roadways.....	14.2
14-3.01.C (2) Minor Roadways: Roadways With 2 or More Lanes in Each Direction or Greater Posted Speed	14.2
14-3.02 Repair to areas famaged by Contractors Operations.....	14.2
14-3.03 Asphalt Concrete	14.2
14-3.03.A Density requirements.....	14.3
14-3.04 Seal Coats.....	14.3
14-3.04.A Slurry Seal (Type 2).....	14.3
14-3.04.B Sand Seal.....	14.3
14-3.05 Shoulders	14.3
14-4 CONCRETE	14.4
14-5 PAVEMENT MARKINGS	14.4
14-6 TEMPORARY PAVING.....	14.5
14-7 MEASUREMENT AND PAYMENT	14.5

SECTION 15 – CLEARING AND GRUBBING
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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 Pipes, 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
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
16-1 GENERAL	16.1
16-2 PAYMENT	16.1

**SECTION 17 - DUST CONTROL
TABLE OF CONTENTS**

<u>Section</u>	<u>Page</u>
17-1 GENERAL	17.1
17-2 DUST PALLIATIVE	17.1
17-3 MEASUREMENT AND PAYMENT.....	17.1

SECTION 18 - EARTHWORK

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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 Measurement and Payment.....	18.2
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	18.3
18-4 DITCH AND CHANNEL EXCAVATION	18.3
18-4.01 General.....	18.3
18-4.02 Grade Control - Lined Channels	18.3
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	18.4
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	18.5
18-5.03 Stabilization 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
18-6.04 Payment.....	18.7
18-7 SURPLUS MATERIAL DISPOSAL.....	18.7
18-7.01 General.....	18.7
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
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
19-1 TRENCH EXCAVATION	19.1
19-1.01 Exploratory Excavation.....	19.1
19-1.01.A Exploratory Excavations within Paved Surface	19.1
19-1.01.B Exploratory Excavations using Coring Method.....	19.1
19-1.01.C Exploratory Excavations Outside of Paved Surface	19.1
19-1.02 Trench Width	19.1
19-1.02.A Storm Drain Pipe.....	19.2
19-1.02.B NOT USED	19.2
19-1.02.C Water Pipe.....	19.2
19-1.03 Pavement Cutting.....	19.2
19-1.04 Maximum Length of Open Trench	19.2
19-1.05 Control of Water	19.2
19-1.06 Shoring and Bracing.....	19.2
19-1.07 Special Foundation Treatment	19.3
19-1.08 Excavation Method.....	19.3
19-1.09 Payment.....	19.3
19-2 PIPE BEDDING AND BACKFILLING OF TRENCHES	19.4
19-2.01 Pipe Bedding.....	19.4
19-2.01.A NOT USED	19.4
19-2.01.B Storm Drain	19.4
19-2.01.C Water Distribution Systems	19.4
19-2.02 Initial Backfill.....	19.4
19-2.02.A NOT USED	19.4
19-2.02.B Storm Drain	19.4
19-2.02.C Water Distribution Systems	19.5
19-2.03 Trench Backfill	19.5
19-2.04 Payment.....	19.6

SECTION 20 - LANDSCAPING

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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	20.2
20-2.04 Liquid Green Dye	20.2
20-2.05 Mulch	20.2
20-2.06 Header Boards	20.2
20-3 EROSION CONTROL	20.2
20-3.01 Seeding Application	20.2
20-3.02 Measurement and Payment	20.3
20-4 IRRIGATION SYSTEMS	20.3
20-4.01 Maintain Existing Water Supply	20.3
20-4.02 Trenching in Existing Landscape	20.4
20-4.03 Electrical Service for Electric Automatic Irrigation System	20.4
20-4.03A Components	20.4
20-4.03B Controllers	20.4
20-4.03C Control Wire, Electrical Conduit and Pull Boxes	20.5
20-4.03.D Testing	20.5
20-4.04 Installation	20.6
20-4.04.A General	20.6
20-4.04.B Irrigation Sleeving	20.6
20-4.04.C Water Line Crossovers	20.6
20-4.04.D Trenching and Backfilling	20.7
20-4.05 Pipe	20.7
20-4.05.A Subsurface Dripperline	20.9
20-4.05.C Flush Valve	20.9
20-4.05.D Sprinklers and Emitters	20.9
20-4.05.E Deep Watering Pipe	20.10
20-4.06 Valves	20.10
20-4.06 .A Valve Boxes	20.10
20-4.06.B Quick Coupling Valve	20.11
20-4.07 Backflow Preventers	20.12
20-4.08 Flow Sensor	20.12
20-4.09 Pressure Testing	20.11
20-4.10 Repairs and Coverage	20.12
20-4.11 Irrigation Audit	20.12
20-5 PLANTING	20.13
20-5.01 Pesticides	20.13
20-5.02 Preparing Planting Areas	20.13
20-5.03 Planting	20.14
20-5.03.A Preperation for Ground Covers	20.15
20-5.03.B Preperation for Trees and Shrubs	20.16
20-5.03.C Preperation for Turf	20.16

20-5.04	Watering	20.17
20-5.05	Plant Replacement.....	20.17
20-5.06	Inspection for Plant Establishment Period	20.18
20-5.07	Inspection Prior to Final Acceptance of Landscape	20.19
20-5.08	Final Acceptance of Landscape	20.19
20-6	RECORD DRAWINGS AND CONTROLLER CHARTS	20.20
20-7	MEASUREMENT AND PAYMENT	20.21

SECTION 21 - FINISHING ROADWAY
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
21-1 GENERAL	21.1
21-2 PAYMENT	21.1

SECTION 22 - BASE MATERIAL
TABLE OF CONTENTS

Section	Page
22-2 AGGREGATE BASE.....	22.1
22-3 CEMENT TREATED BASES	22.1
22-4 MEASUREMENT AND PAYMENT	22.1

SECTION 23 – ASPHALT CONCRETE

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
23-1 GENERAL.....	23.1
23-1.01 Description	23.1
23-1.02 Abbreviations.....	23.1
23-1.03 Definitions	23.1
23-1.04 Submittals	23.2
23-1.05 Prepaving Conference.....	23.2
23-2 QUALITY ASSURANCE	23.2
23-2.01 General	23.2
23-2.02 Laboratories	23.2
23-2.03 Hot Mix Asphalt Plants	23.2
23-2.04 Test Methods.....	23.2
23-2.05 Quality Control.....	23.2
23-2.05.A General	23.2
23-2.05.B Quality Control Plan	23.2
23-2.06 Dispute Resolution	23.3
23-3 MATERIALS.....	23.3
23-3.01 Aggregates.....	23.3
23-3.01.A General	23.3
23-3.01.B Quality.....	23.3
23-3.01.C Gradations	23.4
23-3.02 Reclaimed Asphalt Pavement.....	23.5
23-3.03 Asphalt Binder	23.6
23-3.04 Liquid Antistrip.....	23.6
23-3.05 Tack Coat.....	23.6
23-4 MIX DESIGNS	23.6
23-4.01 General	23.6
23-4.02 Requirements	23.7
23-4.02.A General	23.7
23-4.02.B Reclaimed Asphalt Pavement	23.7
23-4.02.C Treatments.....	23.8
23-4.02.D Warm Mix Asphalt Technology.....	23.8
23-4.03 Job Mix Formulas	23.8
23-4.03.A General	23.8
23-4.03.B Submittals	23.8
23-4.03.B.1 General	23.9
23-4.03.B.2 Liquid Antistrip Treatment	23.9
23-4.03.B.3 Warm Mix Asphalt Technology	23.9
23-4.03.C Verification	23.9
23-4.03.D Authorization.....	23.10
23-4.03.E Renewal.....	23.11
23-4.03.F Modification	23.12
23-5 PRODUCTION.....	23.12
23-5.01 General	23.12
23-5.02 Warm Mix Asphalt Technology	23.13
23-5.03 Production Start-Up Evaluation	23.14

23-5.04 Quality Control.....	23.14
23-5.04.A General	23.14
23-5.04.B Aggregate	23.15
23-5.04.B.1 General	23.15
23-5.04.B.2 Gradations	23.15
23-5.04.C Reclaimed Asphalt Pavement	23.15
23-5.04.D Liquid Antistrip Treatment	23.16
23-5.04.E Warm Mix Asphalt Technology.....	23.17
23-5.04.F Hot Mix Asphalt Mixtures.....	23.17
23-6 CONSTRUCTION	23.18
23-6.01 General	23.18
23-6.02 Equipment.....	23.19
23-6.02.A Spreading Equipment.....	23.19
23-6.02.B Material Transfer Vehicle	23.19
23-6.02.C Hauling Equipment.....	23.19
23-6.03 Surface Preparation.....	23.19
23-6.04 Tack Coat.....	23.20
23-6.05 Placement	23.21
23-6.05.A General	23.21
23-6.05.B Longitudinal Joints	23.22
23-6.06 Compaction	23.22
23-6.07 Smoothness	23.23
23-6.08 Quality Control.....	23.23
23-6.08.A HMA Density	26
23-7 NOT USED	23.23
23-8 NOT USED	23.23
23-9 ACCEPTANCE	23.23
23-9.01 General	23.23
23-9.02 HMA Density	23.27
23-10 RUBBERIZED HOT MIX ASPHALT-GAP GRADED	23.28
23-10.01 General	23.28
23-10.01.A Summary.....	23.28
23-10.02 Submittals	23.28
23-10.02.A General	23.28
23-10.02.B Job Mix Formula.....	23.29
23-10.02.C Asphalt Rubber Binder	23.29
23-10.03 Quality Assurance	23.29
23-10.03.A Job Mix Formula Verification	23.29
23-10.04 Quality Control.....	23.29
23-10.04.A Asphalt Rubber Binder	23.29
23-10.04.A.1 General	23.29
23-10.04.A.2 Asphalt Modifier	23.29
23-10.04.A.3 Crumb Rubber Modifier	23.30
23-10.04.A.4 Asphalt Rubber Binder	23.30
23-10.04.B Aggregates.....	23.30
23-10.04.C Rubberized Hot Mix Asphalt-Gap Graded Production	23.30
23-10.05 Department Acceptance	23.31
23-10.05.A General	23.31
23-10.05.B Asphalt Rubber Binder	23.31
23-10.05.B.1 General	23.31
23-10.05.B.2 Asphalt Modifier	23.31
23-10.05.B.3 Crumb Rubber Modifier	23.31

23-10.05.B.4 Asphalt Rubber Binder	23.31
23-10.06 Materials.....	23.32
23-10.06.A Rubberized Hot Mix Asphalt-Gap Graded Mix Design	23.33
23-10.06.B Asphalt Rubber Binder	23.34
23-10.06.B.1 General	23.34
23-10.06.B.2 Asphalt Modifier	23.34
23-10.06.B.3 Crumb Rubber Modifier	23.35
23-10.06.B.4 Design and Profile	23.35
23-10.06.B.5 Asphalt Rubber Binder Production	23.36
23-10.06.B.5.a General	23.36
23-10.06.B.5.b Mixing.....	23.36
23-10.06.C Aggregates	23.36
23-10.06.C.1 General	23.37
23-10.06.C.2 Aggregate Gradations	23.37
23-10.06.D Rubberized Hot Mix Asphalt-Gap Graded Production	23.38
23-10.07 Construction	23.38
23-11 MEASUREMENT AND PAYMENT	23.39
23-12 COMPENSATION ADJUSTMENTS FOR PRICE INDEX FLUCTUATIONS	23.39
23-12.01 General	23.39
23-12.02 Asphalt Quantities HMA:.....	23.40
23-12.03 Payment Adjustments.....	23.41

SECTION 24 - SIDE FORMS AND HEADERS
TABLE OF CONTENTS

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

SECTION 25 - PORTLAND CEMENT CONCRETE PAVEMENT
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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	25.1
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	25.2
25-12 PAYMENT	25.2

SECTION 26 - COLD PLANE ASPHALT CONCRETE PAVEMENT
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
26-1 GENERAL	26.1
26-2 PAVEMENT KEYCUTTING	26.1
26-3 PAVEMENT PLANING	26.1
26-4 PLANED PAVEMENT CONFORMS	26.2
26-4.01 Cold Plane Asphalt Concrete Pavement	26.3
26-5 PAVEMENT REINFORCING FABRIC	26.3
26-6 MEASUREMENT	26.4
26-7 PAYMENT	26.4

SECTION 27 - CURBS, GUTTERS, SIDEWALKS, AND DRAINAGE STRUCTURES
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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.....	27.1
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	27.2
27-3.05 Minor Curb and Gutter and Sidewalk Replacement.....	27.3
27-4 DAMAGE REPAIRS.....	27.3
27-5 SIDEWALKS.....	27.3
27-5.01 Widening of Existing Sidewalk	27.3
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	27.4
27-9 RECONSTRUCTION OF CURBS, GUTTER, AND SIDEWALK TO ACCOMMODATE DRIVEWAYS.....	27.5
27-10 RECONSTRUCTION OF CURBS, GUTTER, AND CURB AND GUTTER TO ACCOMMODATE SEWER AND STORM DRAIN SERVICE INSTALLATION	27.5
27-11 CURB AND GUTTER TESTING AND TOLERANCE	27.5
27-12 NOT USED.....	27.5
27-13 DROP INLETS AND CATCH BASINS	27.5
27-14 MEASUREMENT.....	27.6
27-15 PAYMENT	27.7

SECTION 28 - PILING
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
28-1 GENERAL	28.1
28-2 PAYMENT	28.1

SECTION 29 – PRESTRESSING CONCRETE
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
29-1 GENERAL	29.1

SECTION 30 - CONCRETE STRUCTURES
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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	30.3
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.....	30.4
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	30.5
30-15.05.A General	30.5
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
TABLE OF CONTENTS

Section

Page

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

**SECTION 32 – WATERPROOFING
TABLE OF CONTENTS**

<u>Section</u>	<u>Page</u>
32-1 GENERAL	32.1

SECTION 33 - STEEL STRUCTURES
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
33-1 GENERAL.....	33.1
33-2 PAYMENT.....	33.1

SECTION 34 - SIGNS
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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.....	34.1
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
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
35-1 GENERAL.....	35.1

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

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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	36.3
36-8 CONSTRUCTION JOINTS	36.3
36-9 FINISH.....	36.4
36-10 FORMS	36.4
36-11 CURING	36.4
36-12 FIELD QUALITY CONTROL	36.5
36-12.01 Placement Tests.....	36.5
36-12.02 Crack Repair	36.5
36-13 REIMBURSEMENT FOR FIELD QUALITY CONTROL	36.5
36-14 BACKFILL.....	30.6
36-15 LOADING DURING CURING.....	30.6
36-16 MEASUREMENT AND PAYMENT	30.6

SECTION 37 - BORING AND JACKING
TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
37-1	GENERAL	37.1
37-2	NOT USED	37.1
37-3	INSTALLATION OF CONDUCTOR PIPE	37.2
37-4	INSTALLING CARRIER PIPE INSIDE CONDUCTOR PIPE	37.2
37-5	VOIDS.....	37.2
37-6	TOLERANCES.....	37.3
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 - STORM DRAIN CONSTRUCTION

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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 NOT USED	38.2
38-4.04 Grade Tolerance – Storm Drain	38.2
38-4.05 Existing Utilities and Facilities	38.2
38-4.06 NOT USED	38.3
38-5 NOT USED	38.3
38-6 STORM DRAIN INLET LATERALS	38.3
38-7 PIPE JOINTS.....	38.3
38-8 PROTECTIVE COVERING	38.3
38-8.01 NOT USED	38.3
38-8.02 Storm Drain Pipe	38.3
38-9 BACKFILLING PIPE TRENCHES	38.4
38-10 TESTING OF PIPE	38.4
38-10.01 Tests for Obstructions	38.4
38-10.02 Tests for Leakage	38.4
38-10.02.A NOT USED	38.5
38-10.02.B NOT USED	38.5
38-10.02.C NOT USED	38.5
38-10.02.D Air Test for Leakage - Storm Drain	38.5
38-10.02.D.(1) Plug Restraint.....	38.5
38-10.02.D.(2) Relief Valve	38.5
38-10.02.D.(3) Equipment.....	38.5
38-10.02.D.(3)(a) Plug Design	38.5
38-10.02.D.(3)(b) Singular Control Panel	38.6
38-10.02.D.(3)(c) Equipment Controls.....	38.6
38-10.02.D.(3)(d) Separate Hoses	38.6
38-10.02.D.(3)(e) Pneumatic Plugs	38.6
38-10.02.D.(3)(f) Air Compressor Capacity	38.6
38-10.02.D.(4) Pipe Preparation.....	38.6
38-10.02.D.(4)(a) Laterals, Stubs and Fittings	38.6
38-10.02.D.(4)(b) Pipe Wetting	38.6
38-10.02.D.(5) Test Procedure.....	38.6
38-10.02.D.(5)(a) Plug Installation and Testing	38.7
38-10.02.D.(5)(b) Pipe Pressurization	38.7
38-10.02.D.(5)(c) Pressure Stabilization.....	38.7
38-10.02.D.(5)(d) Timing Pressure Loss	38.7
38-10.02.D.(5)(e) Test Time	38.7
38-10.02.D.(5)(f) Testing Pipes with or Lateral Connections	38.8
38-10.02.D.(5)(g) Pipe Acceptance Criteria	38.8
38-10.02.D.(6) Determination Of Groundwater Elevation and Air Pressure Adjustment	38.8
38-10.02.D.(6)(a) Applicability	38.8

38-10.02.D.(6)(b) Pipe Nipple Installation.....	38.9
38-10.02.D.(6)(c) Groundwater Elevation	38.9
38-10.02.E Hydrostatic Tests for Leakage	38.9
38-10.02.E.(1) Water Exfiltration Test	38.9
38-10.02.E.(1)(a) Test Procedure.....	38.9
38-10.02.E.(1)(b) Water Test Elevation	36.12
38-10.02.E.(1)(c) Pipeline Acceptance Criteria.....	36.12
38-10.02.E.(2) Water Infiltration Test.....	36.12
38-10.02.E.(2)(a) Test Procedure.....	36.12
38-10.02.E.(2)(b) Pipeline Acceptance Criteria	36.12
FIGURE 38A	36.12
38-10.02.E.(2)(c) Air Pressure Adjustment.....	36.12
38-10.02.E.(2)(d) Maximum Test Pressure.....	36.12
38-10.02.E.(2)(e) Re-sealing Of Pipe Nipples	36.12
38-10.03 Tests for Deflection	36.12
38-10.03.A NOT USED	36.12
38-10.03.B Storm Drain.....	36.12
38-10.04 Television Inspection (TVI).....	36.12
38-10.04.A Safety	38.13
38-10.04.B Agency-Approved TVI Contractor List.....	38.13
38-10.04.B.(1) Sample Video and TVI Report Submittal	38.14
38-10.04.B.(2) TVI Equipment Submittal	38.14
38-10.04.B.(3) Camera	38.14
38-10.04.B.(4) Computer System.....	38.14
38-10.04.B.(5) Lighting.....	38.14
38-10.04.B.(6) Agency Facility Numbers	38.14
38-10.04.C Scheduling a TVI for Construction	38.15
38-10.04.D Procedure	38.15
38-10.04.D.(1) Water Introduction – New Construction	38.15
38-10.04.D.(2) Direction of TVI	38.15
38-10.04.D.(3) Pipelines (Mainlines and Laterals).....	38.15
38-10.04.E Electronic Data	38.16
38-10.04.E.(1) Header Information.....	38.16
Table 38-4 Granite XP Header Information	38.18
38-10.04.E.(2) Digital Data Format.....	38.18
38-10.04.F Visual Data Procedure	38.18
38-10.04.F.(1) Pipelines (Mainlines and Laterals)	38.18
38-10.04.F.(2) Interruption of Progress	36.19
38-10.04.F.(3) Defect Panning	36.19
38-10.04.F.(4) Counter Calibration.....	36.19
38-10.04.F.(5) Verification of Map Length	36.19
38-10.04.F.(6) Lighting	36.19
38-10.04.F.(7) Flow Level	36.19
38-10.04.F.(8) Camera Travel Speed.....	36.19
38-10.04.F.(9) Clarity	36.19
38-10.04.G Pipeline Narration	36.20
38-10.04.G.(1) Pipelines (Mainlines and Laterals)	36.20
38-10.04.H Observation Codes	36.20
38-10.04.I Nonconforming TVI	36.20
38-10.04.J New Construction TVI Report and Video	36.20
38-10.04.K Acceptance Criteria for New Construction	38.21
38-11 NOT USED	38.21
38-12 MEASUREMENT AND PAYMENT	38.21

SECTION 39 - MANHOLES
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
39-1 GENERAL	39.1
39-2 CONCRETE MANHOLES	39.1
39-2.01 NOT USED	39.1
39-2.02 Concrete Storm Drain Manholes	39.1
39-3 SADDLE SEWER MANHOLES	39.3
39-3.01 NOT USED	39.3
39-3.02 Saddle Storm Drain Manholes	39.3
39-4 MANHOLE TESTING	39.3
39-4.01 NOT USED	39.3
39-4.02 Storm Drain Manholes	39.3
39-4.02.A Manhole Vacuum Test	39.4
39-4.02.B Test by the Exfiltration Method	39.4
39-4.02.C Failure to Pass the Test - Records of Tests	39.5
39-4.02.D Inspection	39.5
39-5 ADJUST STORM DRAIN MANHOLES TO GRADE	39.5
39-6 RECONSTRUCT STORM DRAIN MANHOLES	39.5
39-7 ABANDON STORM DRAIN MANHOLES	39.6
39-8 MEASUREMENT AND PAYMENT	39.6

SECTION 40 - MISCELLANEOUS FACILITIES
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
40-1 STREET AND SIDEWALK BARRICADES	40.1
40-1.01 General	40.1
40-1.02 Measurement and Payment.....	40.1
40-2 MISCELLANEOUS FACILITIES PLACED WITHIN PAVEMENT, SIDEWALK AND LANDSCAPED SURFACES	40.1

SECTION 41 - WATER DISTRIBUTION SYSTEMS

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
41-1 GENERAL	41.1
41-2 WATER PIPE.....	41.1
41-3 EXCAVATION	41.2
41-4 LAYING WATER PIPES.....	41.3
41-5 UNDERGROUND WARNING TAPE, LOCATING WIRE, AND POLYETHYLENE ENCASEMENT	41.4
41-5.01 Underground Warning Tape.....	41.4
41-5.02 Locating Wire	41.4
41-5.03 Polyethylene Encasement.....	41.5
41-6 THRUST BLOCKS AND RESTRAINED JOINTS	41.5
41-7 SETTING FIRE HYDRANTS	41.5
41-8 SETTING GATE VALVES	41.6
41-9 BACKFLOW PREVENTION ASSEMBLIES	41.6
41-10 FIRE PROTECTION SERVICE ASSEMBLIES	41.6
41-11 BLOW-OFFS	41.6
41-12 PIPE BEDDING AND BACKFILLING OF TRENCHES.....	41.6
41-13 REPAVING WATER PIPE TRENCHES.....	41.7
41-14 WATER SERVICES.....	41.7
41-15 WATER METERS AND METER BOXES	41.7
41-16 DISINFECTION, FLUSHING, AND BACTERIOLOGICAL TESTING.....	41.7
41-16.01 Disinfection	41.8
41-16.01.A Disinfection by the Tablet Method.....	41.8
41-16.01.B Disinfection by the Continuous-Feed Method	41.9
41-16.01.B.(1) Filling and Preliminary Flushing:.....	41.9
41-16.01.B.(2) Chlorination Procedure:	41.9
41-16.01.C Holding Period and Final Flushing	41.11
41-16.01.D Disinfection of Tie-In's, Cut-In's, and Repairs	41.11
41-16.02 Flushing of Water Pipes	41.11
41-16.03 Bacteriological Testing.....	41.12
41-16.04 Flushing of Newly Constructed Water Pipe Systems	41.13
41-17 PRESSURE TESTING	41.13
41-18 CONNECTIONS TO EXISTING WATER MAINS	41.14
41-19 REGULATIONS RELATING TO SANITARY HAZARDS.....	41.15
41-20 SETTING, ADJUSTING AND LOCATING WATER BOXES	41.15
41-21 ADJUSTING AIR RELEASE VALVES.....	41.15
41-22 RECYCLED WATER	41.16
41-22.01 General.....	41.16
41-22.02 Recycled Water Distribution System	41.16
41-22.02.A Pipes	41.16
41-22.02.B Valve Boxes and Covers	41.16
41-22.02.C Meter Boxes and Covers.....	41.16
41-22.02.D Blow-Off and ARV Boxes and Covers	41.17
41-22.03 Onsite Recycled Water System.....	41.17
41-22.03.A Pipes	41.17
41-22.03.B Backflow Devices	41.17

41-22.03.C Valves	41.17
41-22.03.D Recycled Water Boxes and Covers	41.18
41-22.03.D.(1) Concrete Boxes and Covers	41.18
41-22.03.D.(2) Rigid Plastic or Composite Boxes and Covers	41.18
41-22.03.E Hose Bibs.....	41.18
41-22.03.F Quick Coupling Valves.....	41.18
41-22.03.G Sprinklers.....	41.18
41-22.03.H Warning Signs.....	41.18
41-22.03.I Special Cross Connection Test.....	41.18
41-22.04 Purple Identification Coating	41.19
41-23 FIELD WELDING OF STEEL WATER PIPE	41.20
41-24 PAYMENT	41.20

SECTION 42 - RELOCATION AND MAINTENANCE OF UTILITY FACILITIES
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
42-1 RELOCATION OF UTILITY FACILITIES	42.1
42-2 MEASUREMENT AND PAYMENT	42.1

SECTION 43 - CLEANING PIPELINES
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
43-1 GENERAL	43.1
43-2 MEASUREMENT AND PAYMENT	43.1

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

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
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	44.2
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	44.3
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	44.4
44-3.01 Description.....	44.4
44-3.02 Materials and Placement.....	44.5
44-3.03 Measurement and Payment	44.5

**SECTION 45 - FENCES TABLE OF
CONTENTS**

<u>Section</u>	<u>Page</u>
45-1 GENERAL	45.1
45-2 CHAIN LINK FENCE	45.1
45-2.01 Materials	45.1
45-2.02 Construction.....	45.1
45-3 BARBED WIRE FENCE AND WIRE MESH.....	45.1
45-3.01 Materials	45.1
45-3.02 Construction.....	45.1
45-4 WROUGHT IRON FENCE.....	45.1
45-5 MEASUREMENT AND PAYMENT	45.2

SECTION 46 - SURVEY MONUMENTS
TABLE OF CONTENTS

Section

Page

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

SECTION 47 - RAILINGS AND BARRIERS
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
47-1 GENERAL.....	47.1

SECTION 48 - TRAFFIC STRIPES AND PAVEMENT MARKINGS
TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
48-1 GENERAL	48.1
48-2 THERMOPLASTIC TRAFFIC STRIPES AND PAVEMENT MARKINGS.....	48.1
48-3 PAINTED TRAFFIC STRIPES AND PAVEMENT MARKINGS.....	48.4
48-4 PREFORMED TRAFFIC STRIPES AND PAVEMENT MARKINGS.....	48.5
48-4.01 General	48.5
48-4.02 High Reflective Preformed Traffic Striping.....	48.5
48-4.03 Preformed Traffic Stripes	48.6
48-4.04 Twelve-Inch Preformed Traffic Striping (White and Yellow) and Markings.....	48.6
48-5 PLACEMENT.....	48.6
48-6 DELINEATORS, PAVEMENT MARKERS, AND OBJECT MARKERS.....	48.7
48-7 MEASUREMENT AND PAYMENT	48.7

SECTION 49 SIGNALS, LIGHTING AND ELECTRICAL SYSTEMS

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
49-1 GENERAL	49.1
49-1.01 Definitions	49.1
49-1.02 Abbreviations	49.1
49-1.03 Regulation and Code	49.1
49-1.04 Equipment List and Drawings.....	49.1
49-1.05 Ordering of Signal and Lighting Equipment.....	49.1
49-1.06 Maintaining Existing and Temporary Electrical Systems	49.2
49-1.07 Scheduling of Work	49.3
49-1.08 Safety Precautions	49.4
49-1.09 Inspection	49.4
49-1.10 Signal Turn-On.....	49.4
49-1.11 Contractor Supplied Equipment.....	49.4
49-2 MATERIALS AND INSTALLATION	49.5
49-2.01 Trench Excavation and Backfill	49.5
49-2.02 Trenching and Boring.....	49.5
49-2.02.A Earth Saw Trenching	49.5
49-2.02.B Directional Bore	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	49.7
49-2.05.A NOT USED	49.7
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.....	49.8
49-2.07 Pull Boxes.....	49.9
49-2.08 Conductors	49.9
49-2.08.A Traffic Signal Interconnect	49.10
49-2.08.A (1) Conduit.....	49.11
49-2.08.A.(2) Existing Splice Boxes and Pull Boxes.....	49.11
49-2.08.A.(3) Fiber Splice Boxes and Pull Boxes	49.11
49-2.08.A.(4) Fiber Optic Cable, Splicing, and Closures	49.12
49-2.08.A.(5) Fiber Patch Panels	49.14
49-2.08.A.(6) Fiber Distribution Units	49.14
49-2.08.B Traffic Signal Interconnect Cable and System Testing	49.15
49-2.09 Wiring.....	49.16
49-2.10 Bonding and Grounding	49.16
49-2.11 Service.....	49.16
49-2.11.A Metered Service (120/208 Volt, 120/240 Volt).....	49.17
49-2.11.B Metered Service with Encapsulated Step-Down Transformer (277/480 Volt to 120-240 Volt)	49.18
49-2.11.C Metered Service with Battery Backup Unit (BBU)	49.19
49-2.11.C.(1) Enclosure Specifications:	49.20
49-2.11.C.(2) UPS Panel Minimum Features:	49.20
49-2.11.C.(3) UPS Unit Minimum Specifications:	49.21
49-2.11.C.(4) UPS Unit Minimum Features	49.21
49-2.11.C.(5) UPS Communications Module.....	49.21
49-2.11.C.(6) Batteries:.....	49.22

49-2.11.C.(7) Enclosure Temperature Compensation	49.22
49-2.11.C.(8) Power System Analyzer and Conflict Resolution Module	49.22
49-2.11.C.(9) Warranty	49.22
49-2.12 Testing	49.22
49-2.13 Painting	49.23
49-3 CONTROLLER ASSEMBLIES	49.24
49-4 TRAFFIC SIGNAL FACES AND FITTINGS	49.24
49-4.01 Vehicle Signal Faces	49.24
49-4.02 Programmable Directional Louvers	49.25
49-4.03 Backplates	49.25
49-4.04 Pedestrian Signal Faces	49.25
49-5 DETECTORS	49.26
49-5.01 Loop Detectors	49.26
49-5.01.A Construction Materials	49.27
49-5.01.B Installation Details	49.27
49-5.01.C Splicing Details	49.28
49-5.02 Video or Hybrid Video/Radar Detection System	49.29
49-5.02.A Installation	49.30
49-5.02.B Warranty	49.30
49-5.03 Emergency Vehicle Detector Cable, Detectors, and Phase Selectors	49.31
49-5.04 Pedestrian Push Buttons	49.31
49-6 LIGHTING	49.32
49-6.01 Street Lights	49.32
49-6.02 Photoelectric Controls	49.32
49-6.02.A Photoelectric Unit	49.32
49-6.02.B Contactors	49.32
49-6.02.C Contactor and Test Switch Housing	49.32
49-6.02.D Wiring	49.33
49-6.03 Light Emitting Diode (LED) Luminaires	49.33
49-7 AGENCY SUPPLIED EQUIPMENT	49.34
49-8 REMOVING AND SALVAGING ELECTRICAL EQUIPMENT	49.34
49-9 IP CAMERA	49.34
49-9.01 IP Camera Mounting	49.35
49-9.02 IP Camera Communication Cable and Connectors	49.35
49-9.03 Ethernet Surge Protector and Patch Cables	49.35
49-10 APPROVED EQUALS	49.35
49-11 PAYMENT	49.36

SECTION 50 - CONSTRUCTION MATERIALS

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
50-1 CEMENTITIOUS MATERIALS	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 CONCRETE	50.1
50-5.01 Composition	50.1
50-5.02 Proportioning	50.2
50-5.03 Mixing and Transporting	50.2
50-5.04 Water Control	50.2
50-6 CURING COMPOUNDS FOR CONCRETE	50.2
50-7 AGGREGATE BASES	50.2
50-8 PIT RUN BASE (GRADED)	50.2
50-9 COBBLES	50.3
50-10 GEOTEXTILE FABRIC	50.3
50-10.01 Nonwoven Geotextile Fabric	50.3
50-10.02 Woven Geotextile Fabric	50.3
50-11 CEMENT-TREATED BASES	50.4
50-12 LIME TREATED BASE	50.4
50-13 SAND	50.4
50-13.01 River Sand	50.4
50-13.02 Graded Sand	50.4
50-14 CRUSHED ROCK	50.5
50-15 CONTROLLED LOW STRENGTH MATERIAL	50.5
50-15.01 Not Used	50.5
50-15.02 Controlled Low Strength Material (CLSM)	50.5
50-15.02.A Properties	50.5
50-15.02.B Proportioning, Mixing, Transporting, And Placing	50.5
50-15.02.C Backfill	50.6
50-15.02.D Quality Control	50.6
50-16 CLEAN CRUSHED ROCK	50.6
50-17 ASPHALT, LIQUID ASPHALT, AND ASPHALTIC EMULSION	50.6
50-18 VITRIFIED CLAY PIPE (VCP)	50.8
50-19 SUBSURFACE DRAINS	50.8
50-20 NONREINFORCED CONCRETE PIPE (CP)	50.8
50-21 REINFORCED CONCRETE PIPE, DRAINAGE (RCPD)	50.8
50-22 NOT USED	50.8
50-23 CONCRETE CYLINDER PIPE (CCP) AND CEMENT MORTAR LINED AND COATED STEEL PIPE (CLCS)	50.8
50-24 ACRYLONITRILE-BUTADIENE-STYRENE (ABS) PIPE	50.9
50-25 DUCTILE IRON PIPE (DIP), AND CAST IRON AND DUCTILE IRON FITTINGS	50.9
50-25.01 General (Does not Apply to Water Pipe)	50.9
50-25.02 NOT USED	50.9
50-25.03 Water Pipe, Fittings, and Joint Restraints	50.9

50-25.03.A Water Pipe	50.9
50-25.03.B Water Fittings.....	50.9
50-25.03.C Joint Restraints for Ductile Iron Water Pipe	50.10
50-26 POLYVINYL CHLORIDE (PVC) WATER AND DRAINAGE PIPE	50.10
50-26.01 NOT USED	50.10
50-26.02 PVC Pipe for Drainage.....	50.10
50-26.03 PVC Water Pipe, Fittings, and Joint Restraints	50.11
50-26.03.A PVC Water Pipe	50.11
50-26.03.B Fittings for PVC Water Pipe	50.11
50-26.03.C Joint Restraints for PVC Water Pipe	50.11
50-26.03.C.(1) Restrained Push-on Joints	50.12
50-26.03.C.(2) Restrained Mechanical Joints.....	50.12
50-27 CORRUGATED STEEL PIPE (CSP)	50.12
50-28 RIBBED STEEL PIPE (RSP).....	50.13
50-29 CORRUGATED ALUMINUM PIPE (CAP)	50.14
50-30 POLYPROPYLENE PIPE (PP).....	50.15
50-31 FIELD ASSEMBLED PLATE CULVERT	50.15
50-32 REINFORCING STEEL	50.15
50-33 CURB DOWEL AND TIE BARS.....	50.15
50-34 STORM DRAIN CASTINGS	50.15
50-35 WATER PIPE	50.16
50-36 WATER PIPE FITTINGS	50.16
50-37 FIRE HYDRANTS	50.16
50-38 VALVES	50.16
50-38.01 Gate Valves	50.17
50-38.02 Butterfly Valves	50.17
50-38.03 Air Release/Vacuum Valves	50.18
50-39 VALVE BOXES, COVERS, DROP CAPS, AND SERVICE VALVE BOXES	50.18
50-40 WATER SERVICE CONNECTION MATERIALS	50.18
50-40.01 General	50.18
50-40.02 Water Meters and Meter Boxes.....	50.19
50-41 JOINT MATERIALS FOR MANHOLES.....	50.19
50-42 FENCING - CHAIN LINK	50.19
50-43 LANDSCAPING MATERIALS.....	50.20
50-43.01 Topsoil	50.20
50-43.02 Commercial Fertilizer	50.20
50-43.03 Soil Amendments	50.20
50-43.04 Iron Sulfate.....	50.20
50-43.05 Pre-emergent Herbicide	50.20
50-43.06 Straw.....	50.20
50-43.07 Fiber.....	50.20
50-43.08 Mulch	50.23
50-43.09 Planting Mix	50.23
50-43.10.A Turf Seed.....	50.23
50-43.10.B Wildflower Seed for Hydroseeding	50.24
50-43.11 Tackifier	50.24
50-43.12 Lumber.....	50.24
50-43.13 Tree Stakes and Ties	50.24
50-43.14 Root Control Barrier	50.24
50-43.15 Plants.....	50.24
50-43.15.A Turf.....	50.25

50-43.15.B Trees	50.25
50-43.16 Water	50.27
50-43.17 Irrigation Pipe	50.27
50-43.17.A Steel Pipe	50.27
50-43.17.B Plastic Pipe	50.27
50-43.17.B.(1) Main Line	50.27
50-43.17.B.(2) Lateral Lines	50.28
50-43.18 Subsurface Dripperline	50.28
50-43.19 Irrigation Sleeve Conduit	50.28
50-43.20 Sprinklers and Emitters	50.28
50-43.21 Automatic Irrigation Controllers	50.28
50-43.22 Quick Coupling Valve	50.29
50-43.23 Control Valves	50.29
50-43.24 Flow Sensor	50.29
50-43.25 Valve Boxes	50.29
50-43.26 Backflow Preventers	50.30
50-43.27 Concrete	50.30
50-43.28 Filter Assembly Units	50.30
50-43.29 IPS Flexible PVC Hose	50.30
50-43.30 Gate Valves	50.31
50-43.31 Air Vacuum Relief Valve	50.31
50-43.32 Flush Valve Assembly	50.31
50-43.33 Unions	50.31
50-43.34 Irrigation Control Wires	50.31
50-43.35 Pull Boxes	50.31
50-43.36 Pressure Gauges	50.31
50-44 ENGINEERING FABRICS	50.32
50-45 PAINT	50.32
50-46 NOT USED	50.32
50-47 NOT USED	50.32
50-48 EPOXY	50.32