

DAPHNE UTILITIES

STANDARD SPECIFICATIONS

INDEX

<u>TITLE</u>	<u>PAGE NO.</u>
<u>DIVISION I - SUBMITTAL REQUIREMENTS</u>	
Guidelines for Developers, Engineers & Architects	I-1 - I-4
Application for Approval to Construct Sanitary Sewer and/or Water Distribution and/or Gas Facilities	I-5 - I-9
<u>DIVISION II - DESIGN CRITERIA</u>	
A. General Criteria	II-1 - II-3
B. Sanitary Sewer System Design Criteria	II-3 - II-6
C. Water System Design Criteria	II-6 - II-7
D. Gas System Design Criteria	II-7 - II-9
E. Summary At A Glance of Key Components	II-10 - II-11
<u>DIVISION III - CONSTRUCTION SPECIFICATIONS</u>	
<u>SECTION 1 - General Specifications for Water Mains</u>	
1.01 - Scope	1-1
1.02 - Work Included	1-1
1.03 - Schedule of Operations	1-1
1.04 - Materials	1-1 - 1-13
1.05 - Inspection	1-13 - 1-14
1.06 - Handling Pipe and Accessories	1-14
1.07 - Removing and Replacing Pavement	1-14
1.08 - Alignment and Grade	1-15
1.09 - Excavation and Preparation of Trench	1-15 - 1-17
1.10 - Pipe Laying	1-17 - 1-18
1.11 - Jointing Pipe	1-18
1.12 - Setting Valves, Valve Boxes, Fittings and Blow-Offs	1-18 - 1-19
1.13 - Setting Hydrants	1-19
1.14 - Plugging Dead Ends	1-20
1.15 - Anchorage of Bends, Tees and Plugs	1-20
1.16 - Hydrostatic Testing	1-20 - 1-22
1.17 - Chlorination of Completed Pipeline	1-22 - 1-24
1.18 - Concrete	1-24
1.19 - Backfilling	1-24
1.20 - Erosion Control	1-24
1.21 - Maintenance of Surfaces	1-24
1.22 - Clean-Up	1-24
1.23 - Pressure Tests and Chlorination Adjacent to Existing Water Lines	1-25
1.24 - Existing Water System	1-25
1.25 - Dust Control	1-25
1.26 - Public Safety	1-25
1.27 - Tapping of Water Mains	1-25
1.28 - Extra Depth for Water Lines	1-26
1.29 - Use of Chemicals	1-26

INDEX

<u>TITLE</u>	<u>PAGE NO.</u>
<u>SECTION 1 - General Specifications for Water Mains Cont.</u>	
1.30 - Permits, Certificates, Laws and Ordinances	1-26
1.31 - Underground Utilities	1-26
1.32 - Shop Drawings and Record Drawings	1-26
1.33 - Abandoned Water Mains and Appurtenances	1-27
1.34 - Project Documentation	1-27 - 1-28
<u>SECTION 2 - General Specifications for Water Pumping Stations</u>	
2.01 - Scope	2-1
2.02 - Location	2-1
2.03 - Pumping Stations	2-1 - 2-2
2.04 - Pumps	2-2
2.05 - Booster Pump Station	2-2 - 2-14
2.06 - Appurtenances	2-14 - 2-15
2.07 - Inspection	2-15
2.08 - Installation	2-15 - 2-16
2.09 - Field Quality Control	2-16
2.10 - Cleaning	2-16
2.11 - Protection	2-16
2.12 - Quality Assurance	2-16 - 2-17
2.13 - Record Drawings	2-17 - 2-18
2.14 - Warranty	2-18
2.15 - Emergency Standby Power	2-18
2.16 - Shop Drawings and Record Drawings	2-18
<u>SECTION 3 - General Specifications for Sanitary Sewer Mains</u>	
3.01 - Scope	3-1
3.02 - Work Included	3-1
3.03 - Schedule of Operations	3-1
3.04 - Materials	3-1 - 3-6
3.05 - Encasement Pipe	3-6
3.06 - Precast Manhole	3-6 - 3-10
3.07 - Manhole Testing	3-10 - 3-12
3.08 - Manhole Steps	3-12
3.09 - Castings	3-12 - 3-13
3.10 - Drop Connections for Manholes	3-13
3.11 - Concrete	3-13
3.12 - Mortar for Sewer Structures	3-13
3.13 - Running Boards, Saddle Piles and Mats	3-13
3.14 - Gravel, Slag or Crushed Stone	3-13
3.15 - Embedment of PVC Pipe for Gravity Sewer Pipe	3-13 - 3-15
3.16 - Backfill	3-15
3.17 - Erosion and Property Control	3-15
3.18 - Alignment and Grade	3-15 - 3-16
3.19 - Excavation and Preparation of Trench	3-16 - 3-18
3.20 - Removing and Replacing Pavement	3-18
3.21 - Pumping and Bypassing	3-18 - 3-19

INDEX

<u>TITLE</u>	<u>PAGE NO.</u>
<u>SECTION 3 - General Specifications for Sanitary Sewer Mains Cont.</u>	
3.22 - Transitions from Dissimilar Pipes	3-19
3.23 - Inspection	3-19
3.24 - Handling Pipe and Accessories	3-19 - 3-20
3.25 - Pipe Laying	3-20 - 3-22
3.26 - Bracing	3-23
3.27 - Creek Crossings	3-23
3.28 - Installation of Force Mains	3-23 - 3-24
3.29 - Air and Vacuum Valves for Force Mains	3-24
3.30 - Infiltration	3-25
3.31 - Testing of Sanitary Sewers	3-25 - 3-27
3.32 - Installation of Force Main Valves	3-27 - 3-28
3.33 - Clean-Up	3-28
3.34 - Use of Chemicals	3-28
3.35 - Permits, Certificates, Laws and Ordinances	3-28
3.36 - Underground Utilities	3-28
3.37 - Shop Drawings and Record Drawings	3-29
3.38 - Abandoned Sewer Mains and Appurtenances	3-29
3.39 - Project Documentation	3-29 - 3-30
<u>SECTION 4 - Urethane/Epoxy Rehabilitation of Manholes</u>	
4.01 - Scope	4-1
4.02 - Lining of Manholes	4-1 - 4-4
4.03 - Lining of Manholes Using Cured-in-Place Epoxy Resin Liner	4-4 - 4-6
4.04 - Replacement of Manhole Frame and Cover	4-6
4.05 - Salvaging Manhole Frame and Cover	4-6
4.06 - Raising of Existing Manhole Frame and Cover	4-6
4.07 - Inflow Dish	4-6
4.08 - Chimney Seal	4-7
4.09 - Manholes Lacking Benches and Inverts	4-7
4.10 - Warranty	4-7
<u>SECTION 5 - Rehabilitation of Sanitary Sewer Mains by the Cured-In-Place-Pipe (CIPP) Method</u>	
5.01 - Scope	5-1
5.02 - References	5-1 - 5-2
5.03 - Qualifications	5-2
5.04 - Delivery, Storage, and Handling	5-2
5.05 - Quality Control	5-2
5.06 - Submittals	5-3 - 5-4
5.07 - Materials	5-4 - 5-7
5.08 - Construction Procedures	5-7 - 5-10
5.09 - Construction Methods	5-10 - 5-11
5.10 - Post Televising of Completed Sections	5-11
5.11 - Final Cleanup	5-12
5.12 - Testing	5-12
5.13 - Forms	5-12
5.14 - Warranty	5-12

INDEX

<u>TITLE</u>	<u>PAGE NO.</u>
<u>SECTION 6 - General Specifications for Sewage Pumping Station</u>	
6.01 - Scope	6-1
6.02 - Materials	6-1
6.03 - Intent of Plans and Specifications	6-1 - 6-2
6.04 - Submittals and Tests	6-2 - 6-3
6.05 - Site Work	6-3 - 6-4
6.06 - Excavation for Pipes and Structures	6-5
6.07 - Concrete	6-5
6.08 - Wet well	6-5 - 6-6
6.09 - Painting and Touch-Up	6-6
6.10 - Continuity of Operations	6-6 - 6-7
6.11 - Definition of Acceptance	6-7
6.12 - Clean-Up	6-7
6.13 - General Pump Requirements	6-7 - 6-9
6.14 - General Electric Requirements for Pump Stations	6-9 - 6-16
6.15 - Remote Monitoring System	6-17 - 6-20
6.16 - Self-Priming Pumps	6-20 - 6-45
6.17 - Submersible Pumps	6-45 - 6-47
6.18 - Submersible Pump Valves and Piping	6-48
6.19 - Submersible Pumps Electrical	6-48 - 6-50
6.20 - Submersible Pumps Controls	6-50 - 6-52
6.21 - Submersible Pump Specification Sheet	6-52 - 6-58
6.22 - Grinder Pump Specification Sheet (to be owned by DU)	6-58 - 6-60
6.23 - Grinder Pump Specification Sheet (not to be owned by DU)	6-60 - 6-62
6.24 - Bypass Pumps	6-62 - 6-66
6.25 - Generators	6-66 - 6-71
<u>SECTION 7 - Encasement Pipe</u>	
7.01 - Scope	7-1
7.02 - General	7-1
7.03 - Material	7-1 - 7-2
7.04 - Filling Encasement	7-2
<u>SECTION 8 - Gas Mains</u>	
8.01 - General	8-1
8.02 - Scope	8-1
8.03 - Materials and Equipment	8-1 - 8-7
8.04 - Inspection	8-7
8.05 - Handling of Pipe and Accessories	8-8
8.06 - Alignment and Grade	8-8 - 8-10
8.07 - Excavation and Preparation of Trench	8-10 - 8-12
8.08 - Pipe Laying	8-12 - 8-13
8.09 - Backfill	8-13
8.10 - Welding	8-13
8.11 - Testing of Distribution Line	8-13 - 8-14
8.12 - Holiday Detector Tests	8-14

INDEX

<u>TITLE</u>	<u>PAGE NO.</u>
<u>SECTION 8 - Gas Mains Cont.</u>	
8.13 - Testing of Service Lines	8-14
8.14 - Maintenance of Surfaces	8-14
8.15 - Pipeline Markers	8-14
8.16 - Installation of Service Connections	8-14 - 8-15
8.17 - Standard Details	8-15
8.18 - Abandonment of Existing Mains	8-15
8.19 - Cathodic Protection Systems	8-15 - 8-16
8.20 - Contactor	8-16
<u>SECTION 9 - Backfilling</u>	
9.01 - Scope	9-1
9.02 - Materials	9-1
9.03 - Backfilling	9-1 - 9-4
9.04 - Backfilling for Sewage Pumping Stations	9-4
9.05 - Testing of Materials	9-4
<u>SECTION 10 - Removing and Replacing Pavement</u>	
10.01 - Scope	10-1
10.02 - Materials	10-1
10.03 - Removing and Replacing Pavement	10-1 - 10-4
<u>SECTION 11 - Erosion Control-</u>	
11.01 - Erosion and Property Control	11-1 - 11-5
<u>SECTION 12 - Television Inspection & Cleaning of Sewers</u>	
12.01 - Scope	12-1
12.02 - Definitions for Television Inspection	12-1
12.03 - Performance Requirements for Television Inspection	12-1
12.04 - Submittals for Television Inspection	12-1 - 12-2
12.05 - Television Equipment	12-2 - 12-3
12.06 - Television Inspection	12-3 - 12-4
12.07 - Flow Control For Television Inspection	12-4 - 12-5
12.08 - Passage of TV Camera	12-5
12.09 - Inspection Deliverables for Television Inspection	12-5 - 12-7
12.10 - Cleaning of Sewers	12-7 - 12-8
12.11 - Definitions for Cleaning of Sewers	12-8
12.12 - General Precautions for Cleaning Sewers	12-8
12.13 - Submittals	12-8
12.14 - Qualifications	12-9
12.15 - Mainline Sewer Cleaning Equipment	12-9
12.16 - Vacuum Equipment	12-9
12.17 - Cutting Equipment	12-9
12.18 - Flushing/Cleaning Water	12-9
12.19 - Mainline Sewer Cleaning	12-10
12.20 - Root, Grease and Intruding Seal Material Removal	12-10

INDEX

<u>TITLE</u>	<u>PAGE NO.</u>
<u>SECTION 12 - Television Inspection & Cleaning of Sewers Cont.</u>	
12.21 - Debris Removal	12-10 - 12-11
12.22 - Disposal	12-11
12.23 - Field Quality Control	12-11
APPENDIX A - List of Acceptable Water Products and Manufacturers	
APPENDIX B - List of Acceptable Sanitary Sewer Products and Manufacturers	
APPENDIX C - List of Acceptable Gas Main Products and Manufacturers	
APPENDIX D - Statement of Policy for the Daphne Water Supply and Distribution System	
APPENDIX E - Standard Drawings	