

DETAILED TABLE OF CONTENTS

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
1	INTRODUCTION AND GENERAL POLICIES	
1-1	SCOPE	1-1
1-2	INTERPRETATION	1-1
1-3	ABBREVIATIONS AND DEFINITIONS	1-1
1-4	APPLICABLE CODES AND POLICY	1-4
1-5	PUBLIC VS. PRIVATE WATER SERVICE (WELLS)	1-5
1-6	GENERAL METER POLICY	1-5
1-7	PUBLIC WORKS DEPARTMENT JURISTICTION	1-6
1-8	FIRE PROTECTION WITHIN CITY	1-7
1-9	WATER PURVEYORS WITHIN CITY	1-7
1-10	RESPONSIBILITIES OF THE APPLICANT'S ENGINEER	1-7
1-11	REFERENCED SPECIFICATIONS	1-8
1-12	OCCUPANCY/WATER SERVICE	1-8
1-13	CITY COUNCIL ACCEPTANCE	1-8
2	DESIGN CRITERIA	
2-1	CITY WATER SYSTEM	2-1
2-2	WATER MAIN PRESSURES, CAPACITIES AND SIZES	2-1
2-2.1	Quantity of Flow	2-1
2-2.2	Fire Flow Requirements	2-2
2-2.3	Pressure	2-3
2-2.4	Velocity	2-3
2-2.5	Sizing of Mains	2-3
2-2.6	Pipe Networks	2-4
2-3	SELECTION OF PIPE TYPES AND CLASSES	2-4
2-3.1	General	2-4
2-3.2	Main Pipelines	2-4
2-4	LOCATION OF LINES AND FIRE HYDRANTS IN STREETS	2-5
2-4.1	Water Mains	2-5
2-4.2	Fire Hydrants	2-5
2-4.3	Criteria for the Separation of Water Mains and Wastewater (Sewer) Lines	2-5

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
2-5	LOCATION OF LINES IN EASEMENTS	2-5
	2-5.1 General	2-5
	2-5.2 Width	2-6
	2-5.3 Pipeline Location	2-6
	2-5.4 Easement Location	2-6
	2-5.5 Deeds	2-6
	2-5.6 Easement Provisions	2-6
	2-5.6.1 Subdivision Tracts	2-6
	2-5.6.2 Non-Subdivisions	2-6
2-6	DEPTH OF WATER MAINS	2-7
2-7	LOCATION, TYPE, AND SIZE OF VALVES	2-7
2-8	AIR AND VACUUM ASSEMBLIES	2-7
	2-8.1 General	2-7
	2-8.2 Types of Valves	2-8
	2-8.2.1 Air Release Valves	2-8
	2-8.2.2 Air & Vacuum Valves	2-8
	2-8.2.3 Combination Air Release Valves	2-8
	2-8.3 Location	2-8
	2-8.4 Sizing	2-8
2-9	BLOWOFF ASSEMBLIES	2-8
	2-9.1 General	2-8
	2-9.2 Sizing	2-9
2-10	DESIGN FOR PROPER FLUSHING	2-9
2-11	HORIZONTAL AND VERTICAL CURVES	2-10
	2-11.1 General	2-10
	2-11.2 PVC Pipe	2-10
	2-11.3 Steel Pipe	2-10
	2-11.4 Ductile Iron Pipe	2-10
2-12	PROPER SIZING OF WATER METERS AND SERVICE LINES	2-11
	2-12.1 General	2-11
	2-12.2 Meter Sizing	2-11
	2-12.3 Service Line Sizing	2-12
2-13	LOCATION OF METER BOXES, FIRE HYDRANTS AND AIR RELEASE ASSEMBLIES	2-12
	2-13.1 Meter Boxes	2-12
	2-13.2 Fire Hydrants	2-13
	2-13.3 Combination Air Release Assemblies	2-13
	2-13.4 Irrigation Meters	2-13
2-14	STRUCTURAL REQUIREMENTS	2-13

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
	2-14.1 Under Roads	2-13
	2-14.2 Other Pipes and Structures	2-13
	2-14.3 Flexible Joints	2-13
	2-14.4 Thrust Blocks	2-14
	2-14.5 Steep Grades	2-14
	2-14.6 Design For Earth Loads	2-14
2.15	SPECIAL CONSIDERATIONS FOR WELDED STEEL PIPE	2-14
2.16	FIRE SERVICE LINES	2-15
2.17	OTHER DESIGN CONSIDERATIONS	2-15
3	MATERIALS	
3-1	GENERAL REQUIREMENTS	3-1
3-2	TESTING AND FINAL ACCEPTABILITY OF MATERIAL	3-1
3-3	MAIN LINE PIPE MATERIALS	3-1
3-3.1	PVC Pipe	3-2
	3-3.1.1 Pipe Thickness	3-2
	3-3.1.2 Joint Mechanisms	3-2
	3-3.1.3 Couplings and Fittings	3-2
	3-3.1.4 Physical Test Requirements	3-2
3-3.2	Steel Pipe	3-2
	3-3.2.1 Pipe Thickness	3-2
	3-3.2.2 Pipe Ends	3-2
	3-3.2.3 Lining and Coating	3-2
	3-3.2.4 Field Joints	3-3
	3-3.2.5 Factory Tests and Inspections	3-3
3-3.3	Ductile Iron Pipe	3-3
	3-3.3.1 Pipe Thickness	3-3
	3-3.3.2 Joints	3-3
	3-3.3.3 Fittings	3-3
	3-3.3.4 Lining and Coating	3-3
3-4	MAIN LINE FITTINGS	3-4
3-4.1	Bends	3-4
	3-4.1.1 Flanged Fittings	3-4
	3-4.1.2 Mechanical Joint Fittings	3-4
3-4.2	Flexible Couplings	3-4
3-4.3	Transition Couplings	3-4
3-4.4	Flanged Coupling Adapters	3-4
3-4.5	Insulating Couplings	3-4
3-4.6	Special Steel Pipe Fittings	3-5
3-5	SERVICE LINE MATERIALS AND FITTINGS	3-5

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
3-5.1	Copper Pipe	3-5
3-5.2	Corporation Stops	3-5
3-5.3	Resilient Wedge Gate Valve	3-5
3-5.4	Polyethylene Sleeve	3-5
3-5.5	Corrosion Protection	3-5
3-6	WATER METERS	3-6
3-7	MAIN LINE VALVES	3-6
3-7.1	Butterfly Valves	3-6
	3-7.1.1 Valve Body	3-6
	3-7.1.2 Valve Operators	3-6
	3-7.1.3 Painting	3-6
	3-7.1.4 Plastic Wrap	3-6
3-7.2	Resilient-Wedge Gate Valves	3-6
	3-7.2.1 Valve Body	3-6
	3-7.2.2 Stem	3-6
	3-7.2.3 Coating	3-6
	3-7.2.4 Plastic Wrap	3-6
3-7.3	Tapping Sleeves and Valves	3-7
	3-7.3.1 Tapping Valve	3-7
	3-7.3.2 Plastic Wrap	3-7
3-7.4	Valve Stacks and Covers	3-7
3-8	COMBINATION AIR RELEASE AND VACUUM ASSEMBLIES	3-7
3-8.1	Mechanical Assembly	3-7
3-8.2	Enclosure	3-7
3-9	BLOWOFF ASSEMBLIES	3-7
3-9.1	2" Blowoff	3-7
3-9.2	4" and 6" Blowoff	3-8
3-10	FIRE HYDRANT ASSEMBLIES	3-8
3-10.1	Hydrant Type	3-8
3-10.2	Break-Off Check Valves	3-8
3-10.3	Fire Hydrant Beak- Away Spool	3-8
3-10.4	Fire Hydrant Bury	3-8
3-11	PIPE TRENCH MATERIALS	3-9
3-11.1	Within Pipe Zone	3-9
3-11.2	Trench Zone	3-9
3-11.3	Special Slurry Backfill	3-9
3-12	ROADWAY MATERIAL	3-9
3-13	CONCRETE MATERIAL	3-9
3-14	REINFORCING STEEL	3-9
3-14.1	Bar Reinforcement	3-10

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
	3-14.2 Mesh Reinforcement	3-10
3-15	PAINTING	3-10
3-16	GUARD/ MARKER POSTS	3-10
4	PLAN PREPARATION	
4-1	GENERAL	4-1
4-2	SHEET SIZE AND MARGINS	4-1
4-3	SIGNATURE BLOCK	4-1
4-4	COVER SHEET	4-2
	4-4.1 Index Map	4-2
	4-4.2 Vicinity Map	4-2
	4-4.3 Bench Marks	4-2
	4-4.4 General Notes	4-2
	4-4.5 Water Certification Statement	4-2
	4-4.6 Certificate of Record Drawings	4-2
	4-4.7 Material List	4-2
4-5	PLAN OF WATER SYSTEM	4-2
4-6	PROFILE OF WATER SYSTEM	4-3
4-7	GRAPHIC SCALES AND NORTH ARROW	4-3
	4-7.1 Graphic Scales	4-3
	4-7.2 North Arrow	4-4
4-8	PROCEDURE FOR APPROVAL	4-4
4-9	PLAN CHECKING LIST	4-4
	4-9.1 Cover Sheet	4-4
	4-9.2 General Design	4-5
	4-9.3 Plan & Profile Sheets	4-5
	4-9.4 Administrative Items Before Construction of Main(s)	4-5
	4-9.5 Administrative Items During or After Construction of Main(s)	4-6
4-10	STANDARD LANGUAGE FOR QUITCLAIMS AND EASEMENTS	4-6
	4-10.1 Quitclaim Deed	4-6
	4-10.2 Easement Deed	4-6
4-11	STANDARD NOTES	4-7
5	FEES, CHARGES, AND REQUIREMENTS FOR AUTHORIZATION OF CONSTRUCTION	

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
5-1	GENERAL	5-1
5-2	PLAN CHECK FEE	5-1
5-3	SUBMITTAL OF PRINTS (PLAN CHECK)	5-1
5-4	SPECIAL SITUATIONS OR CONDITIONS	5-2
5-5	INSPECTION FEE	5-2
5-6	EASEMENTS	5-2
5-7	AGREEMENTS, INSURANCE, AND BONDS	5-3
	5-7.1 Agreements	5-3
	5-7.2 Insurance	5-3
	5-7.3 Bonds	5-3
	5-7.3.1 Faithful Performance	5-3
	5-7.3.2 Labor and Materials	5-3
5-8	WILL- SERVE LETTER	5-3
5-9	APPROVAL FOR CONSTRUCTION	5-4
5-10	WATER CONNECTION FEES	5-4
	5-10.1 General	5-4
	5-10.2 Plant Investment Fee	5-5
	5-10.3 Special Facilities Surcharge	5-5
	5-10.4 Fire Flow Surcharge	5-5
	5-10.5 Calleguas Municipal Water District	5-5
5-11	SERVICE LINE, METER, OR FIRE HYDRANT INSTALLATION	5-5
	5-11.1 General	5-5
	5-11.2 Service Line	5-5
	5-11.3 Meter	5-5
	5-11.4 Fire Hydrant	5-6
5-12	MAIN LINE EXTENSION, OVERSIZING AGREEMENT AND LOCAL SHARE	5-6
	5-12.1 General	5-6
	5-12.2 Main Line Extension	5-6
	5-12.3 Oversizing Agreement	5-6
	5-12.4 Local Share	5-6
6	CONSTRUCTION NOTES	
6-1	GENERAL REQUIREMENTS	6-1
6-2	PRESERVATION OF STAKES	6-1

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
6-3	SERVICE LINES	6-1
6-4	STATIONING ON RECORD DRAWINGS	6-1
7	CONSTRUCTION	
7-1	GENERAL REQUIREMENTS	7-1
	7-1.1 Use of the Construction Section	7-1
	7-1.2 Protection/Operation of Existing Water System	7-1
	7-1.3 Quality of Materials	7-2
	7-1.4 Substitutions	7-2
	7-1.5 Quality of Workmanship	7-2
	7-1.6 Defective Work	7-2
	7-1.7 City Inspection, Field Acceptance and Guarantee Period	7-3
	7-1.8 Public Relations	7-3
7-2	PERMITS	7-3
	7-2.1 Encroachment	7-3
7-3	SHIPMENT AND DELIVERY	7-3
7-4	CLEARING AND GRUBBING	7-4
	7-4.1 General	7-4
	7-4.2 Removal and Disposal Material	7-4
	7-4.3 Oak Tree Ordinance	7-4
7-5	ABANDONMENT OF EXISTING WATER LINES, REPAIR OF EXISTING FACILITIES, CONNECTION TO EXISTING AC PIPE AND CONCRETE REMOVAL	7-4
	7-5.1 Abandonment	7-4
	7-5.2 Existing Utilities and Facilities	7-4
	7-5.3 Connecting to AC Pipe	7-5
	7-5.4 Concrete, Masonry, Brick and Block Removal	7-6
7-6	EXCAVATION AND TRENCHING	7-6
	7-6.1 General	7-6
	7-6.2 Excavation	7-7
	7-6.3 Shoring	7-7
	7-6.4 Trench Width	7-8
	7-6.5 Pipe Subgrade	7-8
7-7	PIPE BEDDING AND LAYING	7-8
	7-7.1 General	7-8
	7-7.2 Pipe Laid on Bedding vs. Earth Mounds	7-9
	7-7.3 Pipe Laying for Steel Pipe	7-10
	7-7.3.1 Handling	7-10
	7-7.3.2 Inspection	7-10

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
	7-7.3.3 Joints – Interior and Outside	7-10
	7-7.3.4 Welded Joints	7-10
7-7.4	Pipe Laying for PVC Pipe	7-10
	7-7.4.1 Trench	7-11
	7-7.4.2 Storage	7-11
	7-7.4.3 Bending	7-11
	7-7.4.4 Tracing Wire	7-11
7-7.5	Pipe Laying for Ductile Iron Pipe	7-10
7-8	THRUST BLOCKS, SUPPORTING OF VALVES	7-11
	7-8.1 Thrust Blocks	7-11
	7-8.2 Supporting of Valves	7-11
7-9	HOT TAPPING	7-11
7-10	SERVICE CONNECTIONS AND SERVICE LINES	7-12
7-11	INSTALLATION OF VALVES AND FITTINGS	7-11
	7-11.1 General	7-12
	7-11.2 Support	7-12
	7-11.3 Plastic Wrap	7-12
	7-11.4 Bolt Tightening	7-12
7-12	INSTALLATION OF AIR RELEASE AND BLOWOFF ASSEMBLIES	7-12
7-13	INSTALLATION OF FIRE HYDRANT ASSEMBLIES	7-13
	7-13.1 General	7-13
	7-13.2 Painting	7-13
	7-13.3 Setback	7-13
	7-13.4 Thrust Block	7-13
	7-13.5 Plastic Wrap	7-13
7-14	INSTALLATION OF METER BOXES AND PRESSURE REGULATORS	7-13
	7-14.1 General	7-13
	7-14.2 Meter Boxes	7-13
	7-14.3 Jurisdiction	7-13
	7-14.4 Pressure Regulators	7-14
7-15	BACKFILL AND COMPACTION	7-14
	7-15.1 General	7-14
	7-15.1.1 Pipe Zone	7-14
	7-15.1.2 Trench Zone	7-14
	7-15.1.3 Compaction Tests	7-14
	7-15.2 Backfilling and Compacting Pipe Zone	7-14
	7-15.2.1 Material	7-14
	7-15.2.2 Compaction	7-14
	7-15.3 Backfilling and Compacting Trench Zone	7-15

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
7-16	RESURFACING AND RESTORATION	7-16
7-17	BORING AND JACKING OPERATIONS	7-16
	7-17.1 General	7-16
	7-17.2 Methods	7-16
	7-17.3 Casing Pipe	7-16
7-18	CONCRETE AND MORTAR WORK	7-17
	7-18.1 Concrete	7-17
	7-18.1.1 Placement	7-17
	7-18.1.2 Finish	7-17
	7-18.2 Mortar	7-17
7-19	CONSTRUCTION WATER	7-18
7-20	PAINTING	7-18
7-21	SAFETY	7-19
8	ABANDONMENT	
	8-1 GENERAL	8-1
	8-2 WATER LINES	8-1
	8-3 STRUCTURES AND/OR APPURTENANCES	8-1
9	TESTING AND DISINFECTING WATER MAINS	
	9-1 GENERAL	9-1
	9-2 HYDROSTATIC TESTING	9-1
	9-2.1 PVC Pipe	9-1
	9-2.2 Ductile Iron Pipe	9-1
	9-2.3 Steel Pipe	9-1
	9-3 DISINFECTING WATER MAINS	9-1
	9-4 TESTING FOR FIRE FLOW OR PRESSURE	9-1
10	WATER SYSTEM AND WORK AREA CLEANUP	
	10-1 FINAL PROJECT CLEANUP	10-1
11	REQUIREMENTS FOR FINAL ACCEPTANCE	
	11-1 GENERAL	11-1
	11-1.1 Interim Field Acceptance	11-1
	11-1.2 Field Acceptance	11-1

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
	11-1.3 Record Drawings	11-1
11-2	FIELD ACCEPTANCE	11-1
11-3	RECORD DRAWINGS	11-1
11-4	OTHER ADMINISTRATIVE ITEMS	11-2
11-5	APPROVAL FOR FINAL ACCEPTANCE	11-2
11-6	STATUS DURING MAINTENANCE AND GUARANTEE PERIOD	11-2
11-7	EXONERATION OF SURETY	11-3
12	CROSS CONNECTIONS AND BACKFLOW PREVENTION	
12-1	GENERAL	12-1
12-2	JURISDICTION, AUTHORITY, REFERENCES	12-1
12-3	TYPES OF BACKFLOW PREVENTION	12-1
	12-3.1 Air Gap	12-1
	12-3.2 Reduced Pressure Principle Assembly (RP)	12-1
	12-3.3 Double Check Valve (DC)	12-2
	12-3.4 Double Detector Check Valve (DCDA)	12-2
	12-3.5 Pressure Vacuum Breaker (PVB)	12-2
	12-3.6 Atmospheric Vacuum Breaker (AVB)	12-2
12-4	REQUIREMENTS	12-3
12-5	INSTALLATION	12-3
	12-5.1 General	12-3
	12-5.2 Service Protection Devices	12-3
	12-5.3 Internal Protection	12-4
12-6	APPROVED DEVICES	12-4
12-7	TESTING AND MAINTENANCE	12-4
13	RESERVOIRS AND PUMPING STATIONS	
13-1	GENERAL	13-1
13-2	RESERVOIR STRUCTURAL DESIGN	13-1
13-3	GENERAL RESERVOIR DESIGN PARAMETERS	13-1
13-4	PUMPING STATION DESIGN	13-2
13-5	TELEMETRY SYSTEM	13-2

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
14	WELLS	
14-1	GENERAL	14-1
14-2	STANDARDS	14-2
14-3	GROUNDWATER INFORMATION AVAILABLE	14-2
14-4	ADMINISTRATIVE STEPS	14-2
14-5	TYPE OF WELL	14-4
	14-5.1 Community Water Well	14-4
	14-5.2 Non-Community Water Well	14-4
	14-5.3 Individual Domestic Well	14-4
	14-5.4 Irrigation Well	14-4
14-6	BACKFLOW PREVENTION	14-4
14-7	ABANDONMENT OR DESTRUCTION OF WELLS	14-5
14-8	STANDARD CONDITIONS	14-5
15	WATER CONSERVATION	
15-1	GENERAL	15-1
INDEX		
APPENDIX		
APPROVED MATERIALS		
GUIDANCE CRITERIA FOR THE SEPARATION OF WATER MAINS AND NON-POTABLE PIPELINES		
MUNICIPAL CODE – CROSS CONNECTION AND BACKFLOW PREVENTION		
STANDARD PLATES		

