POTABLE WATER CONSTRUCTION & DESIGN STANDARDS

1. THE CITY'S UTILITIES DEPARTMENT SHALL BE GIVEN A MINIMUM OF 3 BUSINESS DAYS ADVANCE NOTICE (NOT INCLUDING HOLIDAYS OR WEEKENDS) PRIOR TO BEGINNING ANY POTABLE WATER SYSTEM CONSTRUCTION.
2. ALL DEWATERING ACTIVITIES EITHER DIRECTLY DISCHARGED OR THAT SUBSEQUENTLY USE THE CITY'S STORMWATER SYSTEM TO CONVEY GROUND OR SURFACE WATER FROM A SITE SHALL REQUIRE A STANDARD OR GENERAL USE PERMIT AS PER ARTICLE 7 SECTION 7 OF THE LAND DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING ACTIVITIES, OR IN ANY CONSTRUCTION ACTIVITIES. DEWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES ALLOWING CONSTRUCTION OR MAINTENANCE TO BE DONE IN THE DRY, OR ANY ACTIVITY WHICH CHANGES THE IMPERVIOUS AREA OF LAND. SITE SPECIFIC PERMITS SHALL REQUIRE THE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON ROUTINE SCHEDULE OF MAINTENANCE ACTIVITIES DISCHARGING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S MS4. DEWATERING PERMIT APPLICATIONS MAY BE FOUND AT http://www.ci.daytona-beach.fl.us/. FEES ARE SUBJECT TO ARTICLE 20 SECTION 3.1 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT 125 BASIN STREET SUITE 100, DAYTONA BEACH FL 32114 BEFORE ANY USE OF THE MS4 WILL BE ALLOWED. FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S MS4 SYSTEM.
3. ALL WORK PERFORMED UPON POTABLE WATER FACILITIES OWNED OR PROPOSED TO BE OWNED BY THE CITY SHALL BE CONSTRUCTED BY AN UNDERGROUND UTILITY CONTRACTOR OR GENERAL CONTRACTOR LICENSED IN THE STATE OF FLORIDA AND REGISTERED WITH THE CITY.
4. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE DEPARTMENT OF HEALTH, AND THAT AS-BUILTS DRAWINGS (MEETING THE CITY'S AS-BUILT DRAWING REQUIREMENTS) ARE PROVIDED TO THE CITY PRIOR TO ANY USE OF THIS SYSTEM.
5. WATER DISTRIBUTION SYSTEM SHALL BE DESIGNED TO COMPLY WITH THE CITY'S FIRE (WATER) FLOW CODE.
6. ALL WATER SERVICE ENDINGS SHALL BE MARKED WITH A 2" X 4" LUMBER (PRESSURE TREATED) EXTENDING 4 FEET ABOVE GRADE, WITH 2' OF ENDOTRACE CAPPED WITH AN ELSTER HYDROSERT CAP.
7. ALL WATER SERVICES SHALL BE MARKED WITH AN "/\" SAW CUT INTO THE CURB.
8. ALL WATER VALVES SHALL BE MARKED WITH AN "X" SAW CUT INTO THE CURB.
9. ALL TAPPING OF MAINS SHALL BE PERFORMED WITH A UTILITY REPRESENTATIVE PRESENT. SCHEDULING OF THESE CONNECTIONS SHALL BE REQUIRE A MINIMUM OF THREE BUSINESS DAYS FOR NOTIFICATION AND SHALL BE COORDINATED WITH THE WATER DISTRIBUTION DIVISION (386) 671-8530.
10. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION STATIONING & OFFSETS FROM THE CENTER LINE OF CONSTRUCTION AND RIGHT-OF-WAY LINES THE PROPOSED LOCATIONS OF ALL WATER MAINS.
11. DEWATERING SHALL BE PROVIDED TO KEEP GROUNDWATER ELEVATION A MINIMUM OF 6 INCHES BELOW MAIN BEING LAID.
12. ALL WATER MAINS SHALL BE LAID ON A FIRM UNYIELDING FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
13. TRENCHES SHALL BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE CITY WITH A MINIMUM COMPACTION OF 98% IN PAVED AREAS AND 95% IN UNPAVED AREAS IN ACCORDANCE WITH AASHTO T-180 MODIFIED PROCTOR TEST.
14. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS BE PROVIDED AT POINTS 12 INCHES ABOVE THE PIPE AND AT 12 INCH VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | WATER CONSTRUCTION & DESIGN STANDARDS W-1A

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POTABLE WATER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

15. WHERE POTABLE WATER AND SANITARY SEWER MAINS CROSS WITH LESS THAN TWELVE (12) INCHES OF VERTICAL CLEARANCE OR WHERE THE SEWER MAIN IS ABOVE THE WATER MAIN, THE SEWER MAIN SHALL BE ENCASED WITH CONCRETE, OR UPGRADED TO C-900 PVC PIPE FOR A MINIMUM LENGTH OF TWENTY (20) FEET, CENTERED ON THE POINT OF CROSSING. A MINIMUM HORIZONTAL SEPARATION OF SIX (6) FEET (SIDE TO SIDE) BETWEEN POTABLE WATER MAINS AND SEWER MAINS SHALL BE MAINTAINED WHEN AT ALL POSSIBLE. WHEN THE SIX (6) FOOT HORIZONTAL SEPARATION CANNOT BE MAINTAINED, THE WATER MAIN SHALL BE INSTALLED IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF AT LEAST 18" ABOVE THE SEWAGE MAIN. ALTERNATIVELY, THE SEWER MAIN SHALL BE ENCASED WITH CONCRETE OR ENCLOSED IN A WATER TIGHT CARRIER PIPE, OR UPGRADED TO PRESSURE RATED PVC PIPE (MEETING THE AWWA C-900 OR C-905 SPECIFICATION) AND PRESSURE TESTED. **SEE PIPE SEPARATION DETAIL.(W-2) AND SANITARY SEWER ENCASEMENT DETAIL (S-7)
16. WATER MAINS ARE TO BE CONSTRUCTED A MINIMUM OF FOUR FEET MEASURED FROM THE OUTSIDE WALL OF THE WATER MAIN, BEHIND THE BACK OF CURB OR OUTSIDE OF THE EDGE OF ROADWAY PAVEMENT, WHICHEVER IS GREATER.
17. A THREE INCH WIDE METALIZED LOCATOR TAPE SHALL BE USED FOR ALL PRESURIZED MAINS INSTALLED. THE LOCATOR TAPE SHALL BE NON-CORRODIBLE CONSISTING OF POLYETHYLENE FILM WITH METALLIC FILM AND SHALL BE CONTINUOUSLY MARKED TO IDENTIFY THE REFERENCED PIPELINE. THE TAPE SHALL BE INSTALLED EIGHTEEN INCHES DIRECTLY ABOVE THE PIPE.
18. ALL NON-METALIC WATERLINES SHALL HAVE #12 SINGLE STRAND UF RATED INSULATED COPPER WIRE ATTACHED. THE ENDS NEED TO BE SEALED WITH LIQUID TAPE.
19. SINGLE RESIDENTIAL WATER SERVICES SHALL BE A COPPER 1" MINIMUM, OR ENDOT, ENDOTRACE POLY-TUBE (MEETS THE SPECIFICATIONS OF NSF-14, AND AWWA C901.)
20. ALL WATER MAINS SHALL BE NSF-APPROVED FOR POTABLE WATER USE, AND SHALL HAVE A MINIMUM COVER OF 36 INCHES.
21. WATER MAINS SHALL BE DUCTILE IRON PIPE (D.I.P.), CLASS 350, CEMENT LINED UNLESS OTHER-WISE APPROVED BY THE CITY. ALL NON DUCTILE IRON PIPE HORIZONTAL DIRECTIONAL DRILL WATER MAINS SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 160 PSI. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING DEPENDENT ON SITE CONDITIONS.
22. ALL POTABLE WATER MAINS SHALL USE A THRUST RESTRAINT JOINT METHOD IN COMPLIANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) GUIDELINES.
23. MEGALUGS, BOLTLESS RESTRAINED JOINTS, GRIPPER GASKETS, OR STAR GRIPS SHALL BE USED ON ALL RESTRAINED JOINT INSTALLATIONS. MINIMUM DEPTH OF BURY ON PIPES NOT MEETING REQUIRED COVER REQUIREMENTS SHALL FOLLOW THE MOST RECENT DIPRA THRUST RESTRAINT DESIGN GUIDELINES.
24. GRIPPER RING GASKETS SHALL BE USED AS APPROPRIATE FOR RESTRAINING PRESSURE PIPE TO FITTINGS, VALVES, ETC.
25. WATER VALVES SHALL BE PLACED AT ALL STREET INTERSECTIONS AND AT MAXIMUM SPACING OF 750 FEET. SPACING OF VALVES ON PRIMARY TRANSMISSION MAINS WILL BE DETERMINED BY THE CITY.
26. AT ALL WATER MAIN TEES AND CROSSES, VALVES SHALL BE INSTALLED ON ALL LEGS EXCEPT ONE.
27. APPROVED WATER VALVE TYPES ARE THE FOLLOWING:
    A. RESILIENT SEAT GATE VALVES (AWWA C-509)
    B. TAPPING VALVES WITH MECHANICAL TAPPING SLEEVE.
28. ALL WATER VALVES, INCLUDING CONCRETE COLLAR (WITH DEBRIS CAP), SHALL BE ADJUSTED TO FINISHED GRADE AND THE VALVE BOX LID, PRIMED PAINTED BLUE TO MAKE THEM PLAINLY VISIBLE.
29. UPON FINAL ACCEPTANCE OF NEW WATER SYSTEMS, WATER VALVES SHALL BE COMPLETELY OPENED BY PUBLIC UTILITIES PERSONNEL. AT NO TIME SHALL CONTRACTOR OPERATE ANY EXISTING VALVES WITHOUT A CITY INSPECTOR PRESENT.
30. ALL VALVES 2" AND SMALLER SHALL BE CURB STOPS. LARGER THAN 2" SHALL BE GATE VALVES.
31. TYPICALLY, A MINIMUM OF ONE FIRE HYDRANT SHALL BE LOCATED AT EVERY INTERSECTION. OTHER FIRE HYDRANTS SHALL BE LOCATED SO AS TO PRODUCE A MAXIMUM 500 FOOT RADIUS OF COVERAGE. ALL FIRE HYDRANTS SHALL BE CONSTRUCTED TO MAKE THEM EASILY ACCESSIBLE TO FIRE PERSONNEL. THE PRIMARY HYDRANT PORT IS TO FACE THE STREET.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | WATER CONSTRUCTION & DESIGN STANDARDS (CONT'D) W-1B

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POTABLE WATER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

32. IN AREAS WHERE RECLAIMED WATER IS NOT AVAILABLE THE CONTRACTOR SHALL BE REQUIRED TO TRANSFER THE WATER FROM THE POTABLE WATER LINES WITH NECESSARY BACKFLOW PREVENTION DEVICES TO THE NON-POTABLE WATER LINES FOR UTILIZATION IN THEIR PRESSURE TEST.
33. WATER MAINS SHALL BE PRESSURE TESTED AT 150 PSI STATIC PRESSURE FOR A PERIOD OF 4 HOURS.
34. ALL POTABLE WATER MAINS SHALL BE FLUSHED, DISINFECTED, PRESSURE TESTED AND BAC-TERIOLOGICALLY CLEARED FOR SERVICE WHEN APPROPRIATE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED INSPECTOR WHO SHALL COORDINATE WITH CITY PERSONNEL AT THE WATER TREATMENT PLANT AT LEAST THREE BUSINESS DAYS PRIOR TO BEGINNING FLUSH OF THE MAINS PRIOR TO THE COMMENCEMENT OF PRESSURE TESTING. NO HOSE OR FIRE HYDRANT SHALL BE USED IN THE COLLECTION OF BACTERIOLOGICAL SAMPLES. THE SAMPLING TAP MUST BE DEDICATED AND CLEAN, AND DISINFECTED AND FLUSHED PRIOR TO SAMPLING. SAMPLING TAP SHALL BE SMOOTH, UNTHREADED 1/2" HOSE BIB. DISINFECTION & SAMPLING SHALL BE SCHEDULED AT THE CITY'S CONVENIENCE.
35. THE CONTRACTOR SHALL BE REQUIRED TO PIG ALL POTABLE MAINS 6" OR GREATER IN DIAMETER. LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CONTRACTOR.
36. WITH RESPECT, TO FLUSHING, PIGGING, TESTING, AND TIE-IN CONNECTIONS, THE CITY RESERVES THE RIGHT TO REQUIRE WORK TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 6:00 A.M.) IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.
37. THE CITY RESERVES THE RIGHT TO PERFORM THE SAMPLING AND ANALYSIS FOR BACTERIOLOGICAL CLEARANCE OF THE WATER MAIN. ANY RETESTING WILL BE AT THE CONTRACTORS EXPENSE.
38. POTABLE WATER SYSTEM EXTENSIONS MAY NOT BE USED PRIOR TO FINAL TESTING, UNTIL CLEARANCE IS ACCEPTED BY THE CITY OF DAYTONA BEACH AND THE VOLUSIA COUNTY HEALTH DEPARTMENT.
39. A BACK FLOW PREVENTER (BFP) SHALL BE PLACED ON ALL POTABLE AND FIRELINES SERVING COMMERCIAL PROPERTIES AND RESIDENTIAL WHERE RECLAIMED WATER IS AVAILABLE. THE TYPE OF BACKFLOW PREVENTERS REQUIRED ARE AS FOLLOWS:
    POTABLE WATER SERVICE; REDUCED PRESSURE ZONE BFP
    FIRELINE SERVICING A FIRE SPRINKLER SYSTEM AND/OR PRIVATE FIRE HYDRANT; DOUBLE CHECK VALVE SYSTEM
    FIRELINE; DOUBLE CHECK VALVE SYSTEM
    IN CASES WHERE A WATER LINE SERVES BOTH DOMESTIC AND FIRE SERVICES, A REDUCED PRESSURE ZONE BFP SHALL BE REQUIRED.
40. ALL JACK & BORES REQUIRED WITH COMMERCIAL DEVELOPMENTS SHALL BE AT THE SOLE COST OF THE OWNER \ DEVELOPER.
41. ALL C-900 PVC PIPE REQUIREMENTS ARE REFERENCED TO THE C-900-07 STANDARDS. DR UPGRADES FOR BURST PROTECTION MAY BE REQUIRED WHEN USING THE C-900-07 STANDARDS.
42. CHLORINATED WATER MUST BE DE-CHLORINATED PRIOR TO DISCHARGE INTO ANY WATER BODY AS PER AWWA STANDARD, ANSI/AWWA C655-09.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | WATER CONSTRUCTION & DESIGN STANDARDS (CONT'D) W-1C

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CITY APPROVAL STAMP (DEV2011-107)

POTABLE WATER CONSTRUCTION & DESIGN STANDARDS

TESTING REQUIREMENTS:

1. THE CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING LABORATORY AT HIS OWN EXPENSE TO INSURE THAT COMPACTION OF ALL FILL MATERIAL IS COMPLETED PROPERLY. TESTS SHALL BE DONE ONE FOOT ABOVE THE PIPE AND THEN AT ONE FOOT VERTICAL INTERVALS UNTIL FINAL GRADE IS REACHED.
   IDENTIFICATION OF TEST LOCATIONS SHALL BE CLEARLY INDICATED ON TEST REPORTS. TEST RESULTS SHALL BE FORWARDED PROMPTLY TO THE CITY'S DESIGNATED SITE INSPECTOR.
2. ALL TESTING REQUIRED BY THE CITY SHALL BE PAID FOR BY THE CONTRACTOR/DEVELOPER.
3. ALL PROPOSED WATERMAINS SHALL BE FLUSHED, PRESSURE TESTED AND CLEARED FOR SERVICE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED INSPECTOR WHO SHALL COORDINATE WITH CITY PERSONNEL AT THE WATER OR WASTEWATER TREATMENT PLANT (AS APPROPRIATE) AT LEAST THREE BUSINESS DAYS PRIOR TO BEGINNING A FULL-DIAMETER FLUSH OF THE MAINS PRIOR TO THE COMMENCEMENT OF PRESSURE TESTING (SUBJECT TO AVAILABILITY).
4. WATERMAINS SHALL BE PRESSURE TESTED TO 150 PSI FOR 4 HOURS. TESTING SHALL BE IN ACCORDANCE WITH AWWA C-600 AND AWWA C-605 AS APPLICABLE, WITH ALLOWABLE LEAKAGE TO BE X GAL/HR PER X" DIA. OF PIPE, PER X' OF MAIN TO BE TESTED.

ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE * -GPH

AVERAGE TEST PRESSURE (PSI)	NOMINAL PIPE DIAMETER - INCHES															AVERAGE TEST PRESSURE (PSI)
	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	54	60	64	
450	0.48	0.64	0.95	1.27	1.59	1.91	2.23	2.55	2.87	3.18	3.82	4.78	5.73	6.69	7.64	8.60	9.56	10.19	450
400	0.45	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.60	4.50	5.41	6.31	7.21	8.11	9.01	9.61	400
350	0.42	0.56	0.84	1.12	1.40	1.69	1.97	2.25	2.53	2.81	3.37	4.21	5.06	5.90	6.74	7.58	8.43	8.99	350
300	0.39	0.52	0.78	1.04	1.30	1.56	1.82	2.08	2.34	2.60	3.12	3.90	4.68	5.46	6.24	7.02	7.80	8.32	300
275	0.37	0.50	0.75	1.00	1.24	1.49	1.74	1.99	2.24	2.49	2.99	3.73	4.48	5.23	5.98	6.72	7.47	7.97	275
250	0.36	0.47	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.37	2.85	3.56	4.27	4.99	5.70	6.41	7.12	7.60	250
225	0.34	0.45	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.25	2.70	3.38	4.05	4.73	5.41	6.03	6.76	7.21	225
200	0.32	0.43	0.64	0.85	1.06	1.28	1.48	1.70	1.91	2.12	2.55	3.19	3.82	4.46	5.09	5.73	6.37	6.80	200
175	0.30	0.40	0.59	0.80	0.99	1.19	1.39	1.59	1.79	1.98	2.38	2.98	3.58	4.17	4.77	5.36	5.96	6.36	175
150	0.28	0.37	0.55	0.74	0.92	1.10	1.29	1.47	1.66	1.84	2.21	2.76	3.31	3.86	4.41	4.97	5.52	5.88	150
125	0.25	0.34	0.50	0.67	0.84	1.01	1.18	1.34	1.51	1.68	2.01	2.52	3.02	3.53	4.03	4.53	5.04	5.37	125
100	0.23	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	1.50	1.80	2.25	2.70	3.15	3.60	4.05	4.50	4.80	100

** IF THE PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE ALLOWABLE LEAKAGE WILL BE THE SUM OF THE COMPUTED LEAKAGE FOR EACH SIZE.*

$$L = \frac{SD\sqrt{P}}{133{,}200}$$

WHERE:
L = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR
S = LENGTH OF PIPE TESTED, IN FEET
D = NOMINAL DIAMETER OF PIPE, IN INCHES
P = AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH (GAUGE)

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | WATERMAIN TESTING REQUIREMENTS NOTES W-1D

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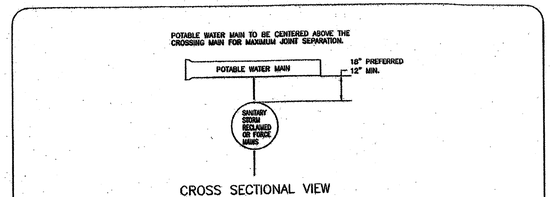

NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM HORIZONTAL DISTANCE OF SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST TWELVE INCHES, AND PREFERABLY EIGHTEEN INCHES, ABOVE OR AT LEAST TWELVE INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE POTABLE WATER MAIN ABOVE THE OTHER PIPELINE. NEW OR RELOCATED UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE AND CONDUIT. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610 F.A.C.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | PIPE SEPARATION DETAIL W-2

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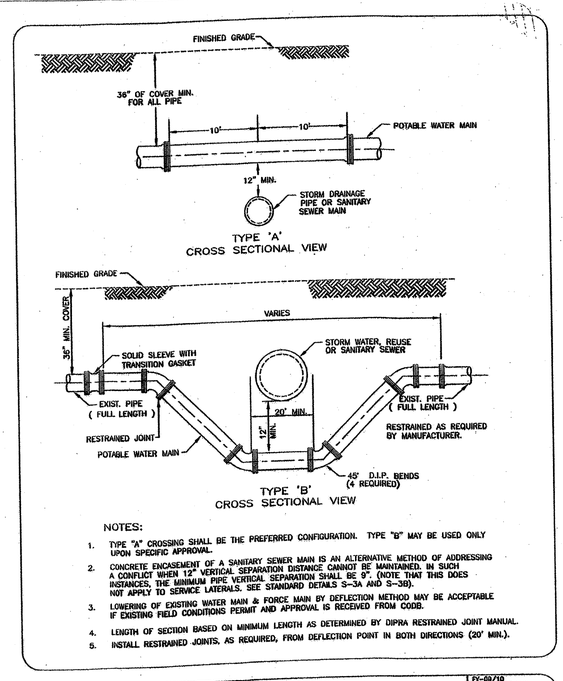

NOTES:

1. TYPE "A" CROSSING SHALL BE THE PREFERRED CONFIGURATION. TYPE "B" MAY BE USED ONLY UPON SPECIFIC APPROVAL.
2. CONCRETE ENCASEMENT OF A SANITARY SEWER MAIN IS AN ALTERNATIVE METHOD OF ADDRESSING A CONFLICT WHEN 12" VERTICAL SEPARATION DISTANCE CANNOT BE MAINTAINED. IN SUCH INSTANCES, THE MINIMUM PIPE VERTICAL SEPARATION SHALL BE 9". (NOTE THAT THIS DOES NOT APPLY TO SERVICE LATERALS. SEE STANDARD DETAILS S-3A AND S-3B).
3. LOWERING OF EXISTING WATER MAIN & FORCE MAIN BY DEFLECTION METHOD MAY BE ACCEPTABLE IF EXISTING FIELD CONDITIONS PERMIT AND APPROVAL IS RECEIVED FROM CODB.
4. LENGTH OF SECTION BASED ON MINIMUM LENGTH AS DETERMINED BY DIPRA RESTRAINED JOINT MANUAL.
5. INSTALL RESTRAINED JOINTS, AS REQUIRED, FROM DEFLECTION POINT IN BOTH DIRECTIONS (20' MIN.).

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | TYPICAL PIPE CROSSING DETAIL W-3

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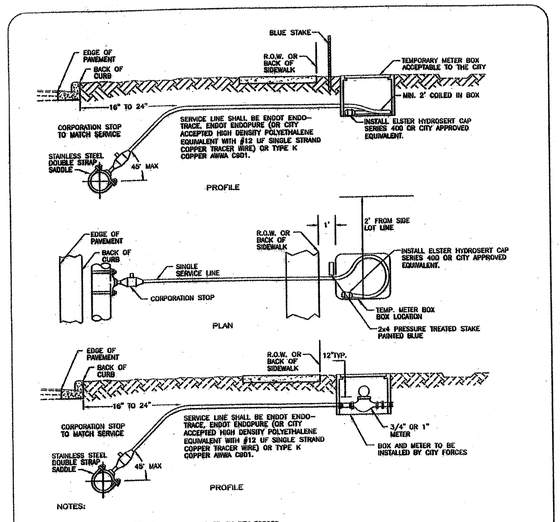

NOTES:

1. METER AND METER BOX SHALL BE FURNISHED BY CITY FORCES.
2. METER SHALL BE INSTALLED BEHIND SIDEWALK OR R.O.W. AS SHOWN.
3. BACKFLOW PREVENTION DEVICES (REDUCED PRESSURE ZONE) MAY BE REQUIRED ON WATER CONNECTIONS. THEY ARE TO BE SUPPLIED AND INSTALLED BY THE DEVELOPER/BUILDER, AT NO COST TO THE CITY. TO BE INSTALLED ON THE CUSTOMER'S SIDE OF THE METER.
4. IRRIGATION METERS REQUIRE AN APPROVED BACKFLOW PREVENTER.
5. ACCEPTABLE MANUFACTURERS: SEE CODB'S APPROVED PRODUCT LIST.
6. SERVICE SADDLES SHALL BE STAINLESS STEEL STRAPS-EPOXY COATED. ACCEPTABLE MANUFACTURERS INCLUDE: SMITH BLAIR (ROCKWELL), JCM, FORD OR APPROVED EQUAL.
7. ALL METER LOCATIONS ON COMMERCIAL SITES SHALL BE LOCATED AS SHOWN ON THE CITY APPROVED SITE PLAN AND FIELD VERIFIED HORIZONTALLY & VERTICALLY BY THE OWNER OR OWNER'S REPRESENTATIVE.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT | WATER SERVICE CONNECTION DETAIL W-6A

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10/04/11	CITY STAFF COMMENTS	NM/DJ

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POTABLE WATER DETAILS

FRATERNAL ORDER OF EAGLES #4401
324 Beville Road
Daytona Beach, Volusia County, Florida 32114

file: *	date: 06-15-11	scale: SHOWN	sheet: 8 of 19