

## FDEP SEPARATION REQUIREMENTS

under 62-555.314 Effective 8-28-2003

HAZARD	HORIZONTAL SEPARATION	VERTICAL SEPARATION	
		WATER ABOVE	WATER BELOW
STORM SEWER	3FT MIN	12" PREF, 6" MIN	12" MIN
STORM FORCE MAIN	3FT MIN	12" MIN	12" MIN
RECLAIMED WATER (REQ'D UNDER 62-610)	3FT MIN	12" MIN	12" MIN
RECLAIMED WATER (NOT UNDER 62-610)	10FT PREF, 6FT MIN	12" MIN	12" MIN
VACUUM SANITARY SEWER	10FT PREF, 3FT MIN	12" PREF, 6" MIN	12" MIN
GRAVITY SANITARY SEWER	10FT PREF, 6FT MIN*	12" PREF, 6" MIN	12" MIN
SANITARY SEWER FORCE MAIN	10FT PREF, 6FT MIN	12" MIN	12" MIN

- ON-SITE SEWAGE TREATMENT & DISPOSAL SYSTEM 10FT MIN (NO ALTERNATIVES)
- 3FT MINIMUM IF BOTTOM OF WATER MAIN IS 6" ABOVE THE SANITARY SEWER MAIN
- THESE TABLES ARE NOT COMPREHENSIVE AND ARE NOT A SUBSTITUTE FOR THE TEXT IN 62-555.314. (SEE TEXT BELOW)
- THIS TABLE WAS CREATED BY A PRIVATE INDIVIDUAL AND IS NOT AN OFFICIAL FDEP TABLE.
- ALL DISTANCES ARE MEASURED OUTSIDE TO OUTSIDE.
- IT IS PREFERABLE TO LAY THE WATER PIPE ABOVE THE HAZARD PIPE.
- WATER MAINS CANNOT COME INTO CONTACT WITH ANY HAZARD STRUCTURES WITHOUT PRIOR APPROVAL BY FDEP.
- EXCEPTIONS ARE ONLY ALLOWED ON A CASE-BY-CASE BASIS WITH JUSTIFICATION TO FDEP BEFORE INSTALLATION.

"AT CROSSINGS, CENTER WATER PIPE ON CROSSING OR MAINTAIN THE FOLLOWING JOINT SPACING:"

HAZARD	ALTERNATIVE JOINT SPACING
STORM SEWER	3FT MIN
STORM FORCE MAIN	3FT MIN
RECLAIMED WATER (REQ'D UNDER 62-610)	6FT MIN
RECLAIMED WATER (NOT UNDER 62-610)	3FT MIN
VACUUM SANITARY SEWER	3FT MIN
GRAVITY SANITARY SEWER	6FT MIN
SANITARY SEWER FORCE MAIN	6FT MIN
ON-SITE SEWAGE TREATMENT & DISPOSAL SYSTEM N/A	

### 62-555.314 LOCATION OF PUBLIC WATER SYSTEM MAINS TEXT.

FOR THE PURPOSE OF THIS SECTION, THE PHRASE WATER MAINS SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER; FIRE HYDRANT LEADS; AND SERVICE LINES THAT ARE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE AN INSIDE DIAMETER OF THREE INCHES OR GREATER.

(1) HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.

(C) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST 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 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.

(D) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

(2) VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, AND RECLAIMED WATER PIPELINES.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY-OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(B) 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. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(C) AT THE UTILITY CROSSINGS DESCRIBED IN PARAGRAPHS (A) AND (B) 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 VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, 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 GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

(3) SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES.

(A) NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.

(B) EFFECTIVE AUGUST 28, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THIS REQUIREMENT (I.E., WHERE THERE IS A CONFLICT IN THE ROUTING OF A WATER MAIN AND A STORM SEWER AND WHERE ALTERNATIVE ROUTING OF THE WATER MAIN OR THE STORM SEWER IS NOT TECHNICALLY FEASIBLE OR IS NOT ECONOMICALLY SENSIBLE), THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THIS REQUIREMENT (I.E., THE DEPARTMENT SHALL ALLOW CONSTRUCTION OF CONFLICT MANHOLES), BUT SUPPLIERS OF WATER OR PERSONS PROPOSING TO CONSTRUCT CONFLICT MANHOLES MUST FIRST OBTAIN A SPECIFIC PERMIT FROM THE DEPARTMENT IN ACCORDANCE WITH PART V OF THIS CHAPTER AND MUST PROVIDE IN THE PRELIMINARY DESIGN REPORT OR DRAWINGS, SPECIFICATIONS, AND DESIGN DATA ACCOMPANYING THEIR PERMIT APPLICATION THE FOLLOWING INFORMATION:

1. TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH CONFLICT MANHOLE.
2. A STATEMENT IDENTIFYING THE PARTY RESPONSIBLE FOR MAINTAINING EACH CONFLICT MANHOLE.
3. ASSURANCE OF COMPLIANCE WITH THE DESIGN AND CONSTRUCTION REQUIREMENTS IN SUB-SUBPARAGRAPHS A. THROUGH D. BELOW.
  - A. EACH WATER MAIN PASSING THROUGH A CONFLICT MANHOLE SHALL HAVE A FLEXIBLE, WATERTIGHT JOINT ON EACH SIDE OF THE MANHOLE TO ACCOMMODATE DIFFERENTIAL SETTLING BETWEEN THE MAIN AND THE MANHOLE.
  - B. WITHIN EACH CONFLICT MANHOLE, THE WATER MAIN PASSING THROUGH THE MANHOLE SHALL BE INSTALLED IN A WATERTIGHT CASING PIPE HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE).
  - C. EACH CONFLICT MANHOLE SHALL HAVE AN ACCESS OPENING, AND SHALL BE SIZED, TO ALLOW FOR EASY CLEANING OF THE MANHOLE.
  - D. GRATINGS SHALL BE INSTALLED AT ALL STORM SEWER INLETS UPSTREAM OF EACH CONFLICT MANHOLE TO PREVENT LARGE OBJECTS FROM ENTERING THE MANHOLE.

(4) SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS. NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX FEET, AND PREFERABLY TEN FEET, FROM 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., AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.005, F.A.C. (UPDATED 6-15-04)

## UTILITY NOTES

1. SHOULD ANY DISCREPANCIES BE DISCOVERED THAT WOULD PREVENT CONSTRUCTION OF NEW IMPROVEMENTS AS SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER WITHIN 48 HOURS FOR A DETERMINATION AS TO THE DISPOSITION OF THE DISCREPANCIES. NO CLAIM WILL BE ALLOWED BY THE CONTRACTOR SHOULD HE FAIL TO PROVIDE THE REQUIRED NOTIFICATION PRIOR TO CONSTRUCTION.
2. THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE, AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITIES AND TO MAKE THE NECESSARY ARRANGEMENTS FOR FIELD VERIFICATION OF THE EXISTING UTILITIES. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING ANY UNDERGROUND UTILITY TO ENSURE THE LOCATION AND INTEGRITY OF THE SYSTEM.
3. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION ACTIVITY FOR DIG PERMITS, ELECTRICAL PERMITS OR OTHER PERMITS AS APPLICABLE. CONTRACTOR IS TO COORDINATE FULLY WITH UTILITY COMPANIES ON EXACT LOCATION OF UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
4. ALL PIPING TO HAVE A MINIMUM OF 3' COVER UNLESS OTHERWISE NOTED ON THE PLANS.
5. WHERE PAVEMENT IS REMOVED, THE SURFACING MATERIAL SHALL BE MECHANICAL SAW-CUT PRIOR TO TRENCH EXCAVATION, LEAVING A UNIFORM AND STRAIGHT EDGE, WITH THE MINIMUM DISTURBANCE TO THE REMAINING ADJACENT SURFACING. IMMEDIATELY FOLLOWING THE SPECIFIED BACKFILLING AND COMPACTION, A TEMPORARY SAND SEAL COAT SURFACE SHALL BE APPLIED TO THE CUT AREAS AND CONTINUED TO PROVIDE A SMOOTH TRAFFIC SURFACE WITH THE EXISTING ROADWAY AND SHALL BE MAINTAINED UNTIL FINAL RESTORATION.
6. DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL TAKE SPECIAL CARE AND PROVIDE ADEQUATE PROTECTION IN ORDER TO MINIMIZE DAMAGE TO VEGETATION, SURFACED AREAS, AND STRUCTURES WITHIN RIGHT-OF-WAY EASEMENT ON SITE, AND TAKE FULL RESPONSIBILITY FOR THE REPLACEMENT OR REPAIR THEREOF.

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## WATER DISTRIBUTION

EXCAVATED TRENCH BOTTOM(S) SHALL BE FREE OF STICKS, ROOTS, STUMPS, STONES, BOULDERS AND ALL DEBRIS, AND SHALL BE GRADED AND SHAPED FOR CONTINUOUS BEING AT THE BOTTOM OF THE PIPE SYSTEM WITH ALLOWANCE FOR VALVES, FITTINGS, AND COUPLINGS.

UNLESS OTHERWISE SHOWN ON THE PLANS, PIPE SHALL BE MANUFACTURED FROM POLYVINYL CHLORIDE RESIN CONFORMING TO ASTM DESIGNATION D 1784. THE PIPE SHALL BEAR THE NATIONAL SANITATION FOUNDATION (NSF) SEAL FOR POTABLE WATER PIPE. PIPE SHALL MEET THE REQUIREMENTS OF AWWA C900, (D.R. 18) "STANDARD FOR POLYVINYL CHLORIDE (PVC) PIPE FOR WATER" AND SHALL BE FURNISHED IN CAST IRON PIPE EQUIVALENT OUTSIDE DIAMETERS WITH RUBBER GASKETED JOINTS AS LISTED C900 STANDARD. DI PIPE SHALL CONFORM WITH AWWA C-150/C-151. POLYVINYL CHLORIDE PIPE LESS THAN 4 INCHES IN DIAMETER SHALL BE IN ACCORDANCE WITH ASTM 1784 (SCHEDULE 40, 80, 120) OR ASTM 2241 (SDR 21, PC 200). DR 14 SHALL BE USED FOR FIRE LINES AND INSTALLED IN ACCORDANCE W/ NFPA 24, 1995.

CONNECTIONS FOR PIPE 2" IN DIAMETER AND LARGER SHALL BE RUBBER COMPRESSION RING TYPE. PIPE SHALL BE EXTRUDED WITH INTEGRAL THICKENED WALL BELLS WITHOUT INCREASE IN SDR. RUBBER RING GASKETS SHALL CONSIST OF SYNTHETIC COMPOUNDS MEETING THE REQUIREMENTS OF ASTM DESIGNATION D1869, AND SUITABLE FOR THE DESIGNATED SERVICE. OTHER CONNECTIONS FOR PIPE, SOLVENT WELDED SLEEVE TYPE JOINT. FITTINGS FOR 2 INCH AND SMALLER PIPE SHALL BE P.V.C. SOLVENT WELDED JOINTS. FITTINGS FOR USE WITH P.V.C. PIPE WILL BE CAST IRON OR DUCTILE IRON WITH MECHANICAL JOINT RUBBER COMPRESSION RING TYPE JOINTS, WHERE MECHANICAL JOINT IRON FITTINGS OR DUCTILE IRON PIPE ARE TO INTERFACE WITH PVC PIPE. A TRANSITION GASKET, CLOW F-6340 OR EQUAL, SHALL BE USED. NO P.V.C. FITTINGS WILL BE ALLOWED EXCEPT ON PIPE AND FITTINGS SMALLER THAN 3 INCHES.

PVC PIPE CONNECTED TO HEAVY FITTINGS AND/OR RIGID STRUCTURES SHALL BE SUPPORTED SO THAT NO SUBSEQUENT RELATIVE MOVEMENT BETWEEN THE PVC PIPE AT THE JOINT AND THE RIGID STRUCTURE IS POSSIBLE.

RESTRAINED JOINTS SHALL BE USED AT ALL BENDS & TEES.

BACKFILLING OF THE TRENCH FROM THE BOTTOM UP TO TWELVE (12) INCHES OVER THE TOP OF THE PIPE SHALL BE COMPACTED IN SIX (6) INCH LAYERS USING DRY FRAGILE SOIL (MAXIMUM PARTICLE OR FRAGMENT DIMENSION 1") TO NINETY-FIVE (95) PERCENT MAXIMUM DENSITY. THE REMAINDER OF THE TRENCH SHALL BE BACKFILLED WITH EXCAVATED EARTH MATERIAL (MAXIMUM ROCK OR FRAGMENT DIMENSION 6") IN NINE (9) INCH LAYERS COMPACTED TO NINETY FIVE (95) PERCENT MAXIMUM DENSITY. NINETY-EIGHT (98) PERCENT UNDER AREAS TO BE PAVED. DENSITY DETERMINATIONS SHALL BE MADE IN ACCORDANCE WITH AASHTO SPECIFICATION T-180. MINIMUM COVER OVER THE TOP OF THE PIPE SHALL BE THIRTY-SIX (36) INCHES UNLESS OTHERWISE SHOWN. IF POSSIBLE, JOINTS SHOULD BE LEFT UNCOVERED UNTIL AFTER TESTING HAS BEEN SATISFACTORILY COMPLETED.

THE PIPE SYSTEM SHALL BE TESTED AND EXAMINED FOR LEAKAGE IN SECTIONS NOT EXCEEDING 1,000 FEET, AT NOT LESS THAN 150 PSI STATIC PRESSURE, IN ACCORDANCE WITH AWWA C 600 (DIP) C 605 (PVC).

AFTER COMPLETION OF CONSTRUCTION AND TESTING, THE WATER SYSTEM SHALL BE DISINFECTED WITH CHLORINE SOLUTION BEFORE ACCEPTANCE FOR DOMESTIC OPERATION. THE AMOUNT OF CHLORINE APPLIED SHALL BE SUFFICIENT TO PROVIDE A DOSAGE SOLUTION OF NOT LESS THAN FIFTY (50) PARTS PER MILLION. PRIOR TO INTRODUCING THE CHLORINE SOLUTION, THE LINE SHALL BE THOROUGHLY FLUSHED WITH CLEAN POTABLE WATER. CHLORINE SOLUTION SHALL BE INTRODUCED IN ACCORDANCE WITH AWWA STANDARD C-651-92 AND SHALL REMAIN IN THE SYSTEM FOR A CONTACT PERIOD OF AT LEAST TWENTY-FOUR (24) HOURS, DURING WHICH TIME EVERY VALVE IN THE SYSTEM SHALL BE OPENED AND CLOSED SEVERAL TIMES TO ASSURE CONTACT WITH EVERY SURFACE OF THE SYSTEM. AFTER COMPLETION OF THE DISINFECTION PROCEDURE, THE SYSTEM SHALL BE FLUSHED USING CHLORINATED WATER FROM THE CENTRAL WATER SUPPLY. SAMPLES SHALL BE TAKEN FROM THE NEW SYSTEM FOR TESTING BY A D.H.R.S. CERTIFIED LAB AND SUBMITTED TO THE ENGINEER FOR SUBMITTAL TO THE DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR CLEARANCE BEFORE IT IS PLACED INTO ACTIVE SERVICE.

GATE VALVES SHALL BE MUELLER CLASS 200 RESILIENT SEATED VALVES, OR APPROVED EQUAL, WITH MECHANICAL JOINT ENDS, MANUFACTURED TO MEET OR EXCEED REQUIREMENTS OF AWWA C509, LATEST REVISION. EACH VALVE SHALL BE FITTED WITH A CAST IRON BOX AND COVER.

FIRE HYDRANT(S) SHALL BE MUELLER STANDARD OR APPROVED EQUAL 3-WAY WITH TWO (2) 2-1/2 INCH HOSE CONNECTIONS AND ONE (1) 4-1/2 INCH PUMPER NOZZLE. MAIN BARREL VALVE SIZE SHALL BE 5-1/4 INCHES. AFTER INSTALLATION THE HYDRANT SHALL BE PAINTED IN ACCORDANCE WITH THE LOCAL FIRE DEPARTMENT REQUIREMENTS.

ALL WATER SERVICE LINES TWO (2) INCHES AND UNDER SHALL BE POLYETHYLENE, IDR 9 OR SDR-26 WITH A PRESSURE RATING OF 160 PSI. ASTM D-2239.

ALL PVC WATER MAINS SHALL BE LAID WITH METALIC LOCATING TAPE PLACED 18" ABOVE THE CENTER OF THE WATERLINE. FOR FUTURE LOCATING PURPOSES, #14 COPPER ARMORED POLYQUARD WIRE SHALL BE TAPPED TO THE TOP OF THE PIPE AND TERMINATE WITH 12" EXTENDING ABOVE THE TOP OF THE VALVE BOX IN SUCH A MANNER SO AS NOT TO INTERFERE WITH THE VALVE OPERATION.

SURVEY AS-BUILT DRAWING IS REQUIRED.

DEDICATED FIRE MAINS SHALL BE INSTALLED BY A STATE CERTIFIED FIRE PROTECTION CONTRACTOR PER F.S. 633.021(5)

AN APPROVED REDUCED PRESSURE BACKFLOW PREVENTION DEVICE IS REQUIRED FOR THE DOMESTIC WATERLINE (A.S.S.E. 1013). IT WILL BE INSTALLED AT THE POINT OF DELIVERY FROM THE LOCAL CITY OR COUNTY WATER SYSTEM. THE INSTALLER IS RESPONSIBLE FOR TESTING THE DEVICE UPON INSTALLATION BY A CERTIFIED BACKFLOW TESTER WITH THE RESULTS BEING FORWARDED TO THE LOCAL CITY OR COUNTY UTILITY DEPARTMENT.

THE IRRIGATION AND FIRE SYSTEMS ARE REQUIRED TO HAVE AN APPROVED DOUBLE CHECK VALVE ASSEMBLY (A.S.S.E. 1015). IT WILL BE INSTALLED AT THE POINT OF DELIVERY FROM THE LOCAL UTILITIES WATER SYSTEM, IN THE HORIZONTAL POSITION. THE INSTALLER IS RESPONSIBLE FOR TESTING THE DEVICE UPON INSTALLATION BY A CERTIFIED BACKFLOW TESTER WITH THE RESULTS BEING FORWARDED TO THE LOCAL UTILITY DEPARTMENT.

ALL WATER MAIN MATERIALS AND APPURTENANCES SHALL CONFORM TO AND SHALL BE INSTALLED, TESTED AND CLEARED FOR SERVICE IN ACCORDANCE WITH THE STANDARDS OF THE LOCAL JURISDICTION AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AGENCY.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN A COPY OF THE FDEP WATER AND SEWER PERMITS ON SITE AT ALL TIMES AND PERFORM BACTERIOLOGICAL TESTING (B.T.) AFTER DISINFECTION IN ACCORDANCE WITH THE FDEP WATER PERMITS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR CONTRACTOR TO SUBMIT A SET OF AS-BUILT WATER AND SEWER DRAWINGS TO THE ENGINEER. THE AS-BUILT WATER DRAWING WILL NEED TO BE PREPARED PER CITY OR COUNTY REQUIREMENTS. THE AS-BUILT SURVEY/ DRAWINGS WILL NEED TO BE PREPARED, SIGNED AND SEALED BY A FLORIDA REGISTERED SURVEYOR.

THE CONTRACTOR SHALL PROTECT THE EXISTING ACTIVE WATER MAIN FROM BACKFLOW CONTAMINATION DURING FILLING, FLUSHING, TESTING AND MAINTAIN A MINIMUM PRESSURE OF 20 PSI IN THE NEW MAINS DURING CONSTRUCTION. ALL PROTECTION METHODS SHALL CONFORM TO THE LOCAL UTILITY COMPANIES, FDEP, AND AWWA STANDARD SPECIFICATIONS.

UPON COMPLETION OF THE WATER DISTRIBUTION SYSTEM INSTALLATION, CONTRACTOR SHALL FURNISH TO THE LOCAL FIRE DISTRICT AND ENGINEER CERTIFIED FIRE FLOW DATA FOR ALL FIRE HYDRANTS WITHIN THE PROJECT.

ALL WATER PIPE NEW OR RELOCATED SHALL BE COLOR CODED OR DETAIL MARKED USING BLUE AS PREDOMINANT COLOR TO DIFFERENTIATE DRINKING WATER FROM RECLAIMED OR OTHER WATER. RECLAIMED WATER PIPING SHALL BE PURPLE COLORED PIPE.

ALL WATER MAIN MATERIAL AND APPURTENANCES, PIPES, JOINTING AND PACKING MATERIAL, INTERNAL COATING, AND LININGS, FITTINGS, AND APPURTENANCES SHALL BE IN THE ACCORDANCE WITH THE CORRESPONDING AWWA STANDARDS AND BE CONFORMING TO NSF REQUIREMENTS IN COMPLIANCE WITH PARAGRAPH 62-555 FLORIDA ADMINISTRATIVE CODE.

ALL WATER MAIN MATERIALS AND APPURTENANCES SHALL COMPLY WITH THE LEAD USE PROHIBITION RULE IN 62-555.322 FLORIDA ADMINISTRATIVE CODE.

NO VALVES OR METERS ALLOWED IN ROADWAYS, CURBS OR SIDEWALKS.

## TEMPORARY JUMPER CONNECTION NOTES

1. A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS.
2. THE DETAILS TO BE USED FOR FILLING ANY WATER MAIN OF ANY SIZE FROM EXISTING ACTIVE WATER MAINS AND FOR FLUSHING OF NEW MAINS UP TO 8" DIAMETER (2.5 FPS MINIMUM VELOCITY) AND FOR PULLING BACTERIOLOGICAL SAMPLES FROM ANY NEW WATER MAIN OF ANY SIZE. THE JUMPER CONNECTION SHALL BE MAINTAINED UNTIL AFTER FILLING, FLUSHING, TESTING AND DISINFECTION OF THE NEW MAIN HAS BEEN SUCCESSFULLY COMPLETED AND CLEARANCE FOR USE FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AND OTHER PERTINENT AGENCIES HAS BEEN RECEIVED. THE JUMPER CONNECTION SHALL ALSO BE USED TO MAINTAIN A MINIMUM PRESSURE OF 20 psi IN THE NEW MAINS ALL THE TIME AFTER DISINFECTION AND UNTIL THE FDEP CLEARANCE LETTER IS OBTAINED. ADEQUATE THRUST BLOCKING AND/OR RESTRAINTS SHALL BE PROVIDED TEMPORARILY. AS REQUIRED, PIPE AND FITTINGS USED FOR CONNECTING THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651, 1992 EDITION. THIS TAPPING SLEEVE AND THE EXTERIOR OF THE MAIN TO BE TAPPED SHALL BE DISINFECTED BY SPRAYING OR SWABBING PER SECTION II OF AWWA C561-92.
3. FLUSHING OF 10" DIAMETER AND LARGE WATER MAINS MAY BE DONE THROUGH THE TIE-IN VALVE, IN THE PRESENCE OF THE UTILITY DEPART. THE UTILITY DEPARTMENT WILL NOTIFIED IN WRITING 48 HOURS PRIOR TO THE FLUSHING OF SAID MAINS.

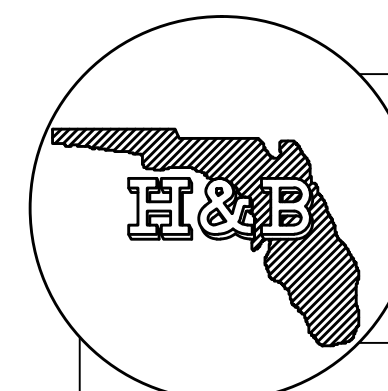
THE FOLLOWING PROCEDURES SHALL BE FOLLOWED:

- A. THE TIE-IN VALVES SHALL BE OPERATED AND PRESSURE TESTED IN THE PRESENCE OF THE UTILITY COMPANY AND ENGINEER TO VERIFY WATER TIGHTNESS PRIOR TO THE TIE-IN. VALVES WHICH ARE NOT WATERTIGHT SHALL BE REPLACED OR A NEW VALVE INSTALLED IMMEDIATELY ADJACENT TO THE LEAKING VALVE.
  - B. THE TEMPORARY JUMPER CONNECTION SHALL BE CONSTRUCTED AS DETAILED. THE JUMPER CONNECTION SHALL BE USED TO FILL THE NEW WATER MAIN AND FOR PROVIDING WATER FOR BACTERIOLOGICAL SAMPLING OF THE NEW MAIN AS REQUIRED BY THE FDEP PERMIT.
    - FLUSHING SHALL NOT BE ATTEMPTED DURING PEAK DEMAND HOURS OF THE EXISTING WATER MAIN.
    - ALL DOWNSTREAM VALVES IN THE NEW SYSTEM MUST BE OPEN PRIOR TO OPENING THE TIE-IN VALVE.
    - PROVIDE FOR AND MONITOR THE PRESSURE AT THE TIE-IN POINT, THE PRESSURE IN THE EXISTING MAIN MUST NOT DROP BELOW 35 psi.
    - TIE-IN VALVE SHALL BE OPENED A FEW TURNS ONLY, ENSURING A PRESSURE DROP ACROSS THE VALVE IS ALWAYS GREATER THAN 10 psi.
  - C. THE TIE-IN VALVE SHALL BE LOCKED CLOSED BY THE CITY UNTIL FLUSHING BEGINS.
  - D. THE TIE-IN VALVE SHALL BE OPENED ONLY A FEW TURNS FOR FLUSHING OF THE NEW MAIN. THE PROCEDURE SHALL BE DIRECTED BY THE CITY AND OBSERVED BY THE ENGINEER.
  - E. AFTER FLUSHING, THE TIE-IN VALVE SHALL BE CLOSED AND LOCKED IN THE CLOSED POSITION BY THE CITY.
4. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION DEMONSTRATING THAT THE RPZ BACKFLOW PREVENTION DEVICE HAS BEEN TESTED WITHIN ONE YEAR AT THE TIME OF INSTALLATION AND IS IN GOOD WORKING ORDER AT THE TIME OF INSTALLATION. THE TEST SHALL BE PERFORMED BY A QUALIFIED BACKFLOW PREVENTION TECHNICIAN.
  5. EXCEPT AS REQUIRED TO FLUSH LINES OF GREATER THAN 8" IN DIAMETER, THE TIE-IN VALVE SHALL REMAIN CLOSED AND SHALL BE LOCKED IN THE CLOSED POSITION BY THE CITY. THE TIE-IN VALVE SHALL REMAIN LOCKED CLOSED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY FDEP AND ALL OTHER PERTINENT AGENCIES.
  6. UPON RECEIPT OF CLEARANCE FOR USE FROM FDEP AND ALL OTHER PERTINENT AGENCIES, THE CONTRACTOR SHALL REMOVE THE JUMPER CONNECTION. THE CORPORATION STOPS ARE TO BE CLOSED AND PLUGGED WITH 2" BRASS PLUGS.
  7. ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACKFLOW PREVENTION DEVICE FITTINGS, VALVE, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

## GENERAL UTILITY NOTES

**H & B CONSULTING ENGINEERS, INC.**  
Certificate of Authorization # 4829  
P.O. Box 520  
218 N. Florida Street - Suite 3  
Bushnell, Florida 33513  
Phone : (352) 793-2113

*Lake Minneola Landings  
C.R. 561  
Groveland, FL 34711*



REVISIONS	
10/15	Added Turn Lanes CR 561A
10/15	Listed lot No's. per Lake Co.
4/16	Lake County comments from 4-11-16

Drawn: WSR	Checked: MZB
Date: 06/16	Scale: as shown