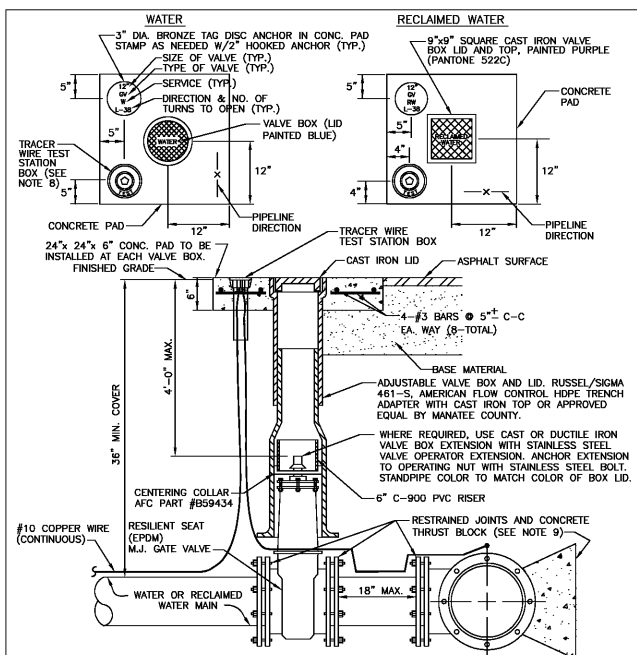


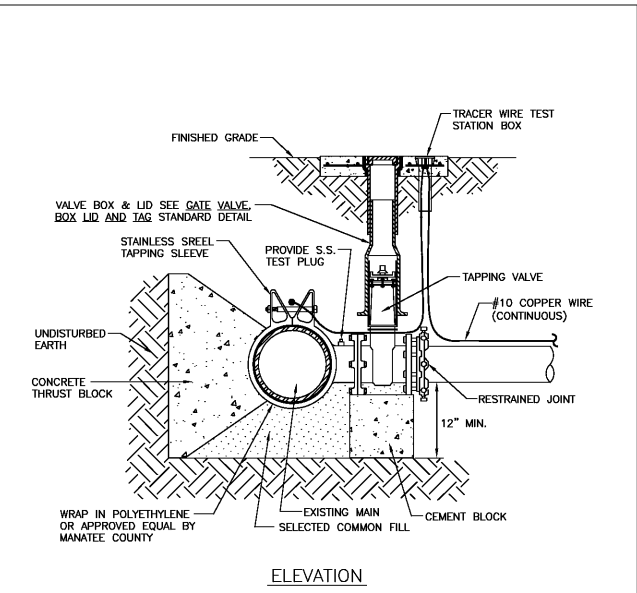
WATER & SEWER CONSTRUCTION NOTES:

- ALL PROPOSED IMPROVEMENTS TO THE SITE TO BE STAKED IN THE FIELD BY OR UNDER THE SUPERVISION OF A FLORIDA REGISTERED LAND SURVEYOR.
- PRIOR TO THE SCHEDULING OF ANY UNDERGROUND UTILITY PRESSURE TESTS, CONTRACTOR SHALL HAVE OBTAINED ALL NECESSARY FIELD DATA REQUIRED FOR THE PRODUCTION OF RECORD DRAWINGS. RECORD DRAWINGS TO INCLUDE LOCATIONAL INFORMATION ON ADJACENT WATER AND SEWER SERVICES AS WELL AS FUNCTIONAL SERVICES.
- CONTRACTOR TO PROVIDE THE ENGINEER OF RECORD WITH REPRODUCIBLE AS-BUILT DRAWINGS SHOWING ALL IMPROVEMENT LOCATIONS AND ELEVATIONS AS REQUIRED BY M.C.P.W.D. CONTRACTOR TO LEAVE EXPOSED ALL PIPE BENDS OF 45 OR GREATER, TEES, CROSSES, REDUCERS AND PRESSURE PIPING EVERY 200' (OR ALTERNATE LOT LINES, WHICHEVER IS CLOSER). AS AN ALTERNATE TO LEAVING EXPOSED PIPING AND FITTINGS, THE CONTRACTOR, AT HIS OPTION, MAY PLACE A VERTICAL LENGTH OF 3/4" MINIMUM P.V.C. OVER THE PIPING OR FITTINGS SO THAT THESE LOCATIONS MAY BE VERIFIED BY SURVEY CREWS.
- ALL PROPOSED CONSTRUCTION IS TO EXCEED LATEST APPLICABLE MANATEE COUNTY CONSTRUCTION STANDARDS AND TO CONFORM TO ENGINEERS SPECIFICATIONS. ALL CONSTRUCTION IS TO BE PUBLICLY OWNED AND OPERATED.
- THE CONTRACTOR IS TO DETERMINE THE LOCATION AND ELEVATION OF ALL F.P.I. AND PROTECTIVE SERVICE SLEEVES WITH RESPECTIVE AGENCY PRIOR TO CONSTRUCTION.
- THE CONTRACTOR IS TO ASSURE HIMSELF THAT ALL UNDERGROUND PIPING AND STORAGE TANKS CONSTRUCTED, TESTED AND OPERATIONAL PRIOR TO ANY ROADWAY CONSTRUCTION.
- ALL PROPOSED ELECTRICAL AND COMMUNICATION SERVICES ARE TO BE LOCATED UNDERGROUND AS DIRECTED BY RESPECTIVE AGENCY. WATER MAINS WHERE LOCATED UNDER PAVEMENT TO BE ENCASED IN CLASS 150 SDR-26 PVC OR TO BE C-900 PVC AT CONTRACTOR'S OPTION. WATER SERVICES WHERE LOCATED UNDER PAVEMENT TO BE ENCASED IN CLASS 150 SDR-26 PVC (3" MIN.).
- ALL UTILITIES AND/OR DRAINAGE SHOWN AS EXISTING ARE TO BE FIELD VERIFIED FOR LOCATION AND ELEVATION PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY "SUNSHINE STATE ONE-CALL" (800) 432-4747, EXT. 1, 48 HOURS MINIMUM PRIOR TO START OF CONSTRUCTION FOR POSSIBLE UTILITY LOCATIONS NOT SHOWN.
- ALL BIDDERS ARE HEREBY ADVISED THAT ALL EXCAVATION ON THIS PROJECT MUST COMPLY WITH FLORIDA STATUTE 90-36 "TRENCH SAFETY ACT", AND THAT THE COSTS OF COMPLIANCE IS TO BE INCLUDED IN HIS BASE BID. THE BIDDER SHALL INDICATE ON THE BID FORM THE COST ASSOCIATED WITH COMPLIANCE.
- WATER SERVICES TO BE MARKED IN CURB WITH A BLUE DISC THAT HAS THE FOOTAGE FROM THE BACK OF CURB TO THE CENTER OF THE METER BOX OR IF NO CURB, A BLUE DISC IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE CENTER OF THE METER BOX.
- ALL PIPING SHALL BE COLOR CODED IN ACCORDANCE WITH MANATEE COUNTY PUBLIC WORKS DEPARTMENT STANDARDS:
GREEN: RAW SEWAGE
PURPLE: EFFLUENT
BLUE: POTABLE WATER
- AS-BUILT INFORMATION SHALL COMPLY WITH MANATEE COUNTY STANDARDS.
- ALL POTABLE WATER CONSTRUCTION SHALL MEET OR EXCEED MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS.
- MINIMUM 18" VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN EXISTING WATER MAIN AND EXISTING FORCE MAIN.
- MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS ARE THE MINIMUM ALLOWABLE WATER AND /OR WASTEWATER CONSTRUCTION STANDARDS. WHERE ANY NOTE OR DETAIL ON THESE PLANS CONFLICT WITH THE MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS THE MORE STRINGENT INTERPRETATION, AS DETERMINED BY THE COUNTY INFRASTRUCTURE INSPECTOR, SHALL BE APPLIED.
- IN ACCORDANCE WITH MANATEE COUNTY PUBLIC WORKS STANDARDS, UTILITY STANDARDS MANUAL (USM) SPECIFICATION 1.9.7.6 THE DEPTH OF BURY FOR POTABLE WATER MAINS, RECLAIMED WATER MAINS AND FORCE MAINS SHALL TYPICALLY BE NO LESS THAN 3 FEET AND NO MORE THAN 6 FEET OF COVER AT FINAL GRADE.



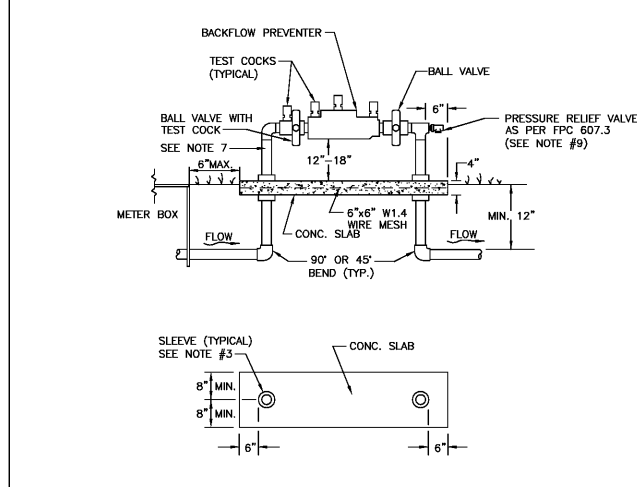
- NOTES:**
- "WM" OR "RW" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "WM" OR PURPLE DISC WITH "RW" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
 - ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD. WATER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
 - PRECAST CONCRETE PADS & THRUST BLOCKS SHALL NOT BE USED.
 - ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
 - FOR VALVES 16" AND LARGER, USE BUTTERFLY VALVES.
 - PIPELINE DIRECTION TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD.
 - TRACER WIRE TEST STATION BOX IS NOT REQUIRED IN VALVE BOX PAD IF THE GATE VALVE IS LOCATED WITHIN 200 FEET OF A WATER SERVICE, BLOW-OFF, BACKFLOW PREVENTER OR FIRE HYDRANT THAT HAS A TRACER WIRE BOX.
 - WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES." BINGHAM & TAYLOR P2000S FOR NORMAL YARD SERVICE, WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE P2000 CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		GATE VALVE, BOX, LID AND TAG	UW-2
REV. BY CLB/KE	DATE 11/10		
MAY 10, 2011		DATE OF APPROVAL	
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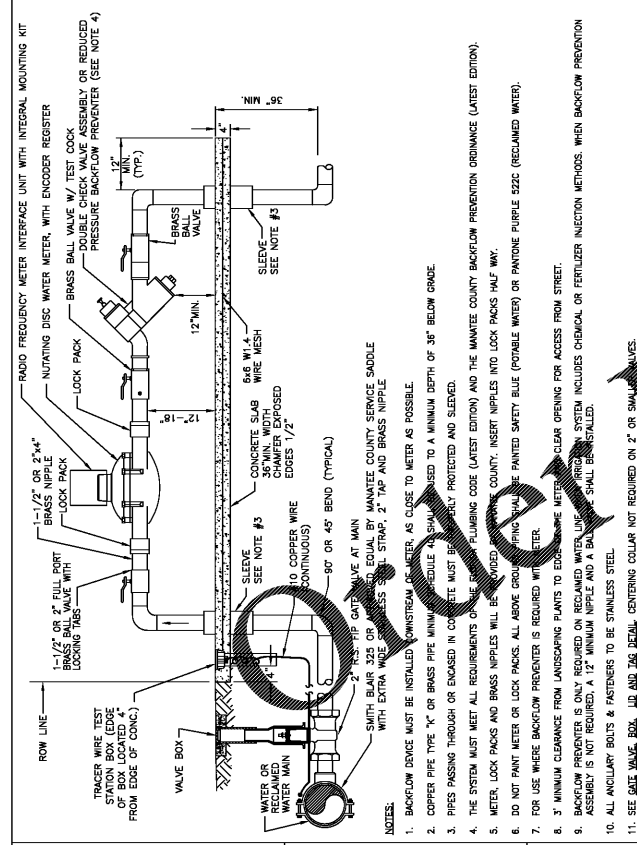
- NOTES:**
- PRIOR TO TAPPING, CONTRACTOR TO DEMONSTRATE 60 MINUTE HYDROSTATIC TEST OF THE TAPPING SLEEVE AND VALVE WITH NO LOSS OF 180 PSI PRESSURE FOR WATER AND RECLAIMED WATER OR 150 PSI FOR FORCE MAIN.
 - ALL FITTINGS TO BE WRAPPED WITH 20 MIL VISQUEEN AT THRUST BLOCK.
 - ALL TAPS ON CONCRETE WATER MAINS AND LARGER THAN 12" ARE TO BE MADE BY A MANATEE COUNTY APPROVED TAPPING COMPANY. ALL MATERIALS BE SUPPLIED BY THE CONTRACTOR.
 - ALL TAPS MUST BE OF A SMALLER SIZE THAN THE MAIN BEING TAPPED & PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS GREATER) FROM A JOINT OR FITTING.
 - CONTRACTOR TO SUPPLY A DRY HOLE FOR TAPPING CREW TO WORK IN AND A BACK-HOE TO LOWER TAPPING MACHINE INTO THE HOLE.
 - WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
 - TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TAPPING SLEEVE AND VALVE	UW-4
REV. BY CLB/KE	DATE 11/10		
MAY 10, 2011		DATE OF APPROVAL	
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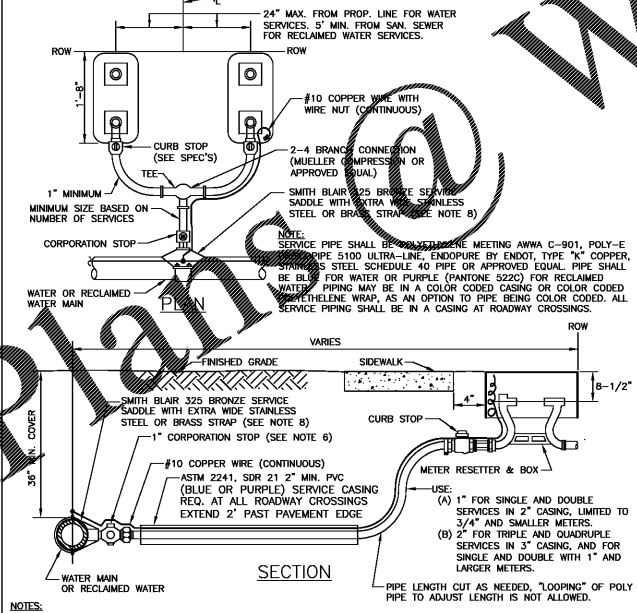
- NOTES:**
- BACKFLOW DEVICE MUST BE INSTALLED IMMEDIATELY DOWNSTREAM OF METER, AS SHOWN ABOVE.
 - COPPER PIPE TYPE "K" OR BRASS PIPE MINIMUM SCHEDULE 40 SHALL BE USED TO A MINIMUM DEPTH OF 12" BELOW GRADE.
 - PIPES PASSING THROUGH OR ENCASED IN CONCRETE MUST BE PROPERLY PROTECTED AND SLEEVES.
 - THE SYSTEM MUST MEET ALL REQUIREMENTS OF THE FLORIDA PLUMBING CODE (LATEST EDITION) AND THE MANATEE COUNTY BACKFLOW PREVENTION ORDINANCE (LATEST EDITION).
 - ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
 - BACKFLOW PREVENTER SHALL BE TESTED AT THE TIME OF INSTALLATION.
 - PRESSURE REDUCING VALVE REQUIRED UPSTREAM OF BACKFLOW IF SYSTEM PRESSURE EXCEEDS 80 PSI.
 - 3" MINIMUM CLEARANCE FROM LANDSCAPING PLANTS TO EDGE OF CONCRETE SLAB AND CLEAR OPENING FOR ACCESS FROM STREET.
 - IN ADDITION TO THE PRV, THE BUILDING DEPT. MAY REQUIRE AN APPROVED DEVICE FOR THERMAL EXPANSION CONTROL.
 - REFER TO DETAIL WATER METER BACKFLOW PREVENTER FOR LIFT STATIONS FOR WATER SERVICE AT SEWAGE PUMPING STATION.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		3/4" & 1" BACKFLOW PREVENTER	UW-12
REV. BY CLB/KE	DATE 11/10		
MAY 10, 2011		DATE OF APPROVAL	
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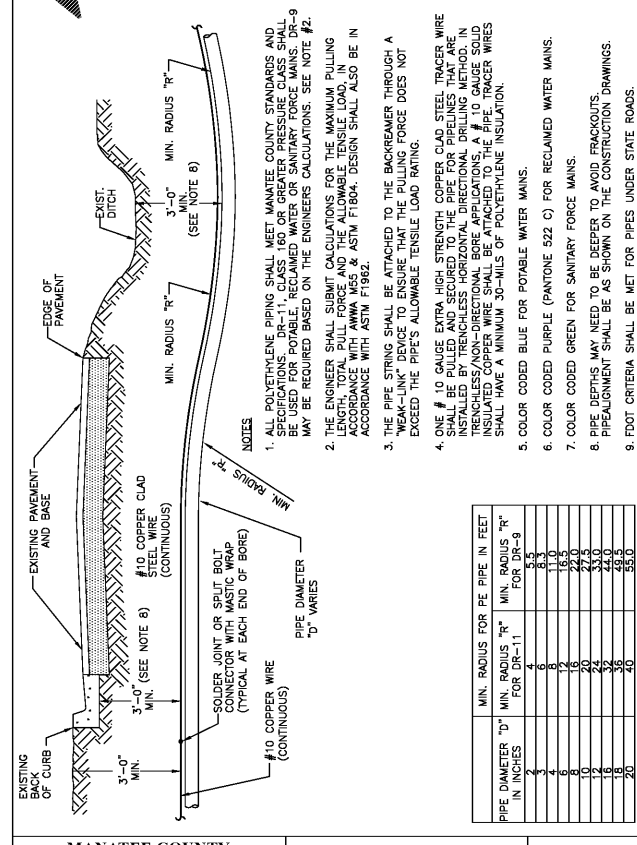
- NOTES:**
- BACKFLOW PREVENTER IS REQUIRED W/ WATER.
 - COPPER PIPE TYPE "K" OR BRASS PIPE MINIMUM SCHEDULE 40 SHALL BE USED TO A MINIMUM DEPTH OF 36" BELOW GRADE.
 - PIPES PASSING THROUGH OR ENCASED IN CONCRETE MUST BE PROPERLY PROTECTED AND SLEEVES.
 - THE SYSTEM MUST MEET ALL REQUIREMENTS OF THE FLORIDA PLUMBING CODE (LATEST EDITION) AND THE MANATEE COUNTY BACKFLOW PREVENTION ORDINANCE (LATEST EDITION).
 - METER, LOCK PADS AND BRASS NIPPLES WILL BE PROVIDED BY MANATEE COUNTY. INSERT NIPPLES INTO LOCK PADS 1/2" W/ W/.
 - DO NOT PAINT METER OR LOCK PADS. ALL ABOVE GROUND PIPING SHALL BE PAINTED PURPLE 522C (RECLAIMED WATER).
 - FOR USE WHERE BACKFLOW PREVENTER IS REQUIRED W/ WATER.
 - 3" MINIMUM CLEARANCE FROM LANDSCAPING PLANTS TO EDGE OF CONCRETE PAD. CLEAR OPENING FOR ACCESS FROM STREET.
 - BACKFLOW PREVENTER IS ONLY REQUIRED ON RECLAIMED WATER LINES. RECLAIMED WATER LINES SHALL BE INSTALLED IN THE EDGE OF PAVEMENT WITH THE DISTANCE (IN FEET) FROM THE DISC TO THE METER.
 - ALL ANCHORAGE BOLTS & FASTENERS TO BE STAINLESS STEEL.
 - SEE METER VALUE BOX. LID AND TAG SHALL BE INSTALLED. CONTAINS COLLAR NOT REQUIRED ON 2" OR SMALLER SIZES.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		1 1/2" & 2" METER AND BACKFLOW PREVENTER	UW-13
REV. BY CLB/BR	DATE 11/10		
MAY 10, 2011		DATE OF APPROVAL	
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- NOTES:**
- ALL SERVICE TAPS TO BE LOCATED IN THE FIELD. TAPS SHALL BE NO CLOSER THAN 2'-0" STAGGERED INTERVALS OR WITHIN 2'-0" FROM BELL OR SPOUT ENDS.
 - METER BOXES & RESETTERS ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND SHALL NOT BE SET IN DRAINAGE SWALES, SIDEWALKS OR DRIVEWAYS.
 - "WM" OR "RW" TO BE IMPRESSED INTO THE NEWLY POURED CONCRETE CURB WITH DISTANCE IN FEET TO THE METER. IF NO CURB, INSTALL A BLUE DISC WITH "WM" OR A PURPLE DISC WITH "RW" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (IN FEET) FROM THE DISC TO THE METER.
 - #10 COPPER WIRE SHALL BE INSTALLED WITH WATER AND RECLAIMED MAIN AND ALL SERVICES. SERVICE WIRE SHALL BE CONNECTED TO THE TRACER WIRE ALONG THE MAIN.
 - WATER AND RECLAIMED WATER SERVICE LINES TO BE 5" MINIMUM FROM SEWER SERVICE PIPES.
 - FOR 2" SERVICES REPLACE CORPORATION STOP WITH 2" RESILIENT WEDGE FIP GATE VALVE W/ BOX, LID & TAG.
 - WHEN THE DISTANCE BETWEEN THE EDGE OF THE SIDEWALK AND THE ROW IS ONE FOOT (CU-DE-SAC W/MEDIAN) A 10'-FOOT-WIDE PUBLIC UTILITY EASEMENT SHALL BE LOCATED IN THE FRONT OF THE LOTS, ADJACENT TO THE ROW.
 - FOR HDPE MAINS, USE ROMAC 306H SS OR CENTRAL PLASTICS ELECTRO FUSION CORP SADDLE.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TYPICAL SERVICE CONNECTION	UW-19
REV. BY CLB/BR	DATE 11/10		
MAY 10, 2011		DATE OF APPROVAL	
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- NOTES:**
- ALL POLYETHYLENE PIPING SHALL MEET MANATEE COUNTY STANDARDS AND SPECIFICATIONS. DR-11, CLASS 100 OR GREATER PRESSURE CLASS SHALL BE USED FOR POTABLE, RECLAIMED WATER OR SANITARY FORCE MAINS. DR-9 MAY BE REQUIRED BASED ON THE ENGINEER'S CALCULATIONS. SEE NOTE #2.
 - THE ENGINEER SHALL SUBMIT CALCULATIONS FOR THE MAXIMUM PULLING LENGTH, TOTAL PULL FORCE AND THE ALLOWABLE TENSILE LOAD IN ACCORDANCE WITH ASTM F1960. DESIGN SHALL ALSO BE IN ACCORDANCE WITH ASTM F1962.
 - THE PIPE STRINGS SHALL BE ATTACHED TO THE BACKWATER THROUGH A "WEAK-LINK" DEVICE TO ENSURE THAT THE PULLING FORCE DOES NOT EXCEED THE PIPE'S ALLOWABLE TENSILE LOAD RATING.
 - ONE #10 GAUGE EXTRA HIGH STRENGTH COPPER PLAD STEEL TRACER WIRE SHALL BE PULLED AND SECURED TO THE PIPE FOR PIPELINES THAT ARE INSTALLED BY TRENCHLESS HORIZONTAL DRILLING METHOD. IN TRENCHLESS/NON-DIRECTIONAL BORE APPLICATIONS, #10 GAUGE SOLID COPPER WIRE SHALL HAVE A MINIMUM 30-MILS OF POLYETHYLENE INSULATION.
 - COLOR CODED BLUE FOR POTABLE WATER MAINS.
 - COLOR CODED PURPLE (PANTONE 522 C) FOR RECLAIMED WATER MAINS.
 - COLOR CODED GREEN FOR SANITARY FORCE MAINS.
 - PIPE DEPTHS MAY NEED TO BE DEEPER TO AVOID FRACKINGS.
 - PIPE/PLACEMENT SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS.
 - FOOT CRITERIA SHALL BE MET FOR PIPES UNDER STATE ROADS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		DIRECTIONAL BORE ROADWAY CROSSING	UG-4
REV. BY CLB/BR	DATE 11/10		
MAY 10, 2011		DATE OF APPROVAL	
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WATER DETAILS

BID SET
7-1-2019

PIPE DIAMETER "D"	MIN. RADIUS "R"	MIN. RADIUS "R"	MIN. RADIUS "R"
IN INCHES	FOR DR-9	FOR DR-11	FOR DR-13
3.0	3.0	3.0	3.0
4.0	4.0	4.0	4.0
6.0	6.0	6.0	6.0
8.0	8.0	8.0	8.0
10.0	10.0	10.0	10.0
12.0	12.0	12.0	12.0
15.0	15.0	15.0	15.0
20.0	20.0	20.0	20.0
24.0	24.0	24.0	24.0
30.0	30.0	30.0	30.0
36.0	36.0	36.0	36.0
42.0	42.0	42.0	42.0
48.0	48.0	48.0	48.0
54.0	54.0	54.0	54.0
60.0	60.0	60.0	60.0

HOUGH ENGINEERING, INC.
CONSULTING ENGINEERS
1771 MANATEE AVE. W., BRADENTON FLORIDA 34205
PHONE : (941) 747-4838 • FAX : (941) 747-4072



DATE	06/26/2019
DESCRIPTION	
NO.	
DATE	
DESCRIPTION	
NO.	
DATE	
DESCRIPTION	
NO.	
DATE	
DESCRIPTION	
NO.	
DATE	
DESCRIPTION	
NO.	

TASK	DATE	STATUS
DESIGN	06/27/2019	COMPLETE
CHECKED	06/27/2019	COMPLETE
QUALITY		
TEST SCALE		

PROJECT NO. NTS
SEP-01

7-ELEVEN, PARRISH
Water Details

LOCATED IN SECTION 33, TOWNSHIP 33S, RANGE 19E
MANATEE COUNTY, FLORIDA
DATE
Marti M. Hough, P.E. # 38664
Certificate of Authorization # 1664
SHEET NO. 7