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UTILITIES

GENERAL:

- THE UTILITY DATA SHOWN ON THESE PLANS WAS LOCATED SOLELY BY OR IN COMBINATION WITH THE SURVEYOR, RESPECTIVE UTILITY PROVIDER, HISTORIC UTILITY DRAWINGS, MAPS, OR FIELD RECONNAISSANCE.
- THE LOCATIONS 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. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE VARIOUS UTILITIES AND TO COORDINATE PROTECTION AND ANY RELOCATIONS OF THESE UTILITIES. THE CONTRACTOR ASSUMES ALL COSTS ASSOCIATED WITH PROTECTION OR RELOCATION OF THE UTILITIES.
- THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THE PLANS OR LOCATED BY THE UTILITY COMPANY. ANY UTILITIES, WHETHER SHOWN ON THESE PLANS OR NOT, THAT INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE CLOSELY COORDINATED WITH THE ENGINEER AND THE RESPECTIVE UTILITY OWNER FOR PROPER PROTECTION.
- A UTILITY IDENTIFICATION SERVICE HAS BEEN CREATED FOR EXISTING UTILITIES. THE CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL OF FLORIDA AT (800-432-4770) OR 811 AT LEAST TWO (2) AND NO MORE THAN FIVE (5) WORKING DAYS PRIOR TO THE SPECIFIC CONSTRUCTION ACTIVITY FOR FIELD LOCATION. NOTE THAT NOT ALL UTILITIES PARTICIPATE IN THIS PROGRAM. THE CONTRACTOR SHALL ALSO CONTACT ALL NON-PARTICIPATING UTILITIES FOR FIELD LOCATION OF THEIR FACILITIES AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION. PER FLORIDA STATUTE 353.851, THE CONTRACTOR OR EXCAVATOR IS REQUIRED TO NOTIFY THE GAS COMPANY TWO (2) WORKING DAYS PRIOR TO STARTING EXCAVATION.
- REFER TO THE COVER SHEET OF THE CONSTRUCTION PLANS SET FOR UTILITIES THAT HAVE INDICATED THEIR FACILITIES MAY EXIST IN THE VICINITY OF THE CONSTRUCTION AREA.
- THE CONTRACTOR SHALL KEEP LOCATE TICKETS CURRENT AT ALL TIMES.
- ALL EXISTING PIPING ENCOUNTERED DURING CONSTRUCTION SHALL BE MAINTAINED IN SERVICE UNLESS OTHERWISE INDICATED ON THE DRAWINGS. IF PIPE WORK REQUIRES INTERRUPTION OF SERVICE, THE CONTRACTOR SHALL FIRST COORDINATE WITH UTILITY OWNER, REGULATORY AGENCY, AND ANY AFFECTED USER OF THE UTILITY, AS APPROPRIATE.
- TYPICAL DETAILS AND SPECIFICATIONS ARE SHOWN TO ILLUSTRATE THE ENGINEER'S INTENT AND ARE NOT PRESENTED AS A SOLUTION TO ALL CONSTRUCTION PROBLEMS ENCOUNTERED IN THE FIELD. THE CONTRACTOR MAY ALTER THE METHOD OF CONSTRUCTION TO SUIT FIELD CONDITIONS, PROVIDED THE CONTRACTOR OBTAINS FROM THE ENGINEER AND THE REGULATORY AGENCY, IF APPLICABLE, APPROVAL FOR AN ALTERNATE METHOD.
- FOR EACH RESPECTIVE PIPELINE CONSTRUCTION REQUIRED, THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION, DEPTH, AND ALIGNMENT OF ALL EXISTING PIPES, CABLES, ETC., TO BE CROSSED OR CONNECTED. IF THE CONTRACTOR DEEMS NECESSARY (A) A CHANGE IN ALIGNMENT OR DEPTH, OR THE NEED FOR ADDITIONAL FITTINGS, BENDS, OR COUPLINGS, WHICH REPRESENT A DEPARTURE FROM THE APPROVED DRAWINGS, OR (B) A NEED FOR RELOCATION OF EXISTING UTILITIES, THEN DETAILS OF SUCH DEPARTURES AND RELOCATIONS, INCLUDING CHANGES IN RELATED PORTIONS OF THE PROJECT, SHALL BE SUBMITTED WITH SHOP DRAWINGS. APPROVED DEPARTURES FOR THE CONTRACTOR'S CONVENIENCE SHALL BE MADE AT NO ADDITIONAL COST TO THE DEVELOPER.
- THE CONTRACTOR SHALL PROVIDE AT HIS OWN EXPENSE ALL NECESSARY TEST PUMPING EQUIPMENT, WATER, WATER METERS, PRESSURE GAUGES, AND OTHER EQUIPMENT, MATERIAL AND FACILITIES REQUIRED FOR ALL HYDROSTATIC, LEAKAGE, AND PRESSURE TESTING. THE CONTRACTOR SHALL CONTACT THE ENGINEER AND DEVELOPER IN WRITING AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF PROPOSED TESTING. THE CONTRACTOR SHALL PERFORM SATISFACTORY PRE-TESTING PRIOR TO NOTIFICATION.

SANITARY SEWER SYSTEMS:

- PVC SEWER PIPE SHALL BE TYPE PSM PVC PIPE CONFORMING TO ASTM D3034 AND SHALL BE SDR 35 FOR 4 INCHES THROUGH 16 INCHES, AND ASTM F 679, WALL THICKNESS T-1, FOR PIPE 18 INCHES THROUGH 27 INCHES.
- JOINTS SHALL MEET THE REQUIREMENTS OF ASTM D3212 USING RUBBER GASKETS CONFORMING TO ASTM F477.
- FITTINGS SHALL CONFORM TO THE SAME REQUIREMENTS AS THE PIPE. PROVIDE ADAPTERS AS REQUIRED TO JOIN PVC PIPE TO PIPE, FITTINGS AND EQUIPMENT OF OTHER MATERIALS. SOLVENT CEMENT SHALL BE AS RECOMMENDED BY THE PIPE MANUFACTURER.
- PVC SEWER PIPE SHALL BE COLOR CODED GREEN AND STENCILED "SEWER LINE" (2-INCH LETTERING ON TWO (2) SIDES OF THE PIPE IN AT LEAST THREE (3) AREAS PER PIPE SECTION).
- INSTALL ADHESIVE IDENTIFICATION TAPE ALONG PIPELINE. TAPE SHALL BE MINIMUM THICKNESS 4 MILS, 6-INCH WIDTH, 1-INCH LETTER SIZE. TAPE COLOR AND LETTERING SHALL BE "SEWER LINE" BLACK PRINTING ON GREEN BACKGROUND. PLACE TAPE AS FOLLOWS: 2 INCHES TO 8 INCHES DIAMETER PIPE - CENTER ALONG TOP HALF OF PIPE, 10 INCHES TO 18 INCHES DIAMETER PIPE - PLACE ALONG BOTH SIDES OF THE TOP HALF OF PIPE; 20 INCHES PIPE AND LARGER - PLACE ON BOTH SIDES OF TOP HALF OF PIPE WITH A THIRD STRIP CENTERED ALONG TOP HALF OF PIPE.
- INSTALL WARNING TAPE ALONG ALL SEWER PIPELINES. TAPE SHALL BE 6-INCH WIDE VINYL CONTINUOUS TAPE, COLORED GREEN WITH BLACK LETTERING CODED AND WORDED "CAUTION: SEWER BURIED BELOW." INSTALL ALONG PIPELINE, TWO (2) FEET ABOVE PIPE, MINIMUM OF ONE (1) FOOT BELOW GRADE.
- PRIOR TO INSPECTIONS AND TESTING, CLEAN ALL INSTALLED LINES AND MANHOLES. TEST PROCEDURES SHALL BE APPROVED BY THE ENGINEER. ALL TESTS SHALL BE MADE IN THE PRESENCE OF THE ENGINEER AND UTILITY. NOTIFY THE ENGINEER AND THE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY WORK IS TO BE INSPECTED OR TESTED.
- PROVIDE ALL EQUIPMENT FOR TESTING. INCREMENTS ON GAGES USED FOR LOW PRESSURE AIR TESTING SHALL BE OF SCALED TO THE NEAREST 0.1 PSI. GAGES, PUMPS, AND HOSES SHALL BE IN GOOD WORKING ORDER WITH NO NOTICEABLE LEAKS.
- ALL SERVICE LATERALS SHALL BE COMPLETED PRIOR TO TESTING, AND ARE SUBJECT TO THE SAME TESTING REQUIREMENTS AS THE MAIN LINE.
- PROVIDE LIGHT SOURCE AND MIRRORS FOR LAMP TESTING OF SEWER. ANY SEWER IN WHICH THE DIRECT LIGHT OF A LAMP CANNOT BE VIEWED IN EITHER DIRECTION, FULL CIRCLE, AND BETWEEN ADJACENT MANHOLES SHALL BE CONSIDERED UNSATISFACTORY UNLESS THE LINE IS DESIGNED WITH HORIZONTAL DEFLECTIONS. SAID LINE SHALL BE REPAIRED BY THE CONTRACTOR WITHOUT ADDITIONAL COMPENSATION.
- CONDUCT LOW PRESSURE AIR TESTING (4.0 PSI INITIAL PRESSURE) OF INSTALLED SEWER PIPING IN ACCORDANCE WITH ASTM F1417. MAXIMUM ALLOWABLE LEAKAGE IS 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNAL SURFACE AREA BEING TESTED. ALLOWABLE AIR PRESSURE DROP DURING THE TEST IS 0.5 PSIG. MINIMUM REQUIRED TEST TIME (DURATION): (S) 4-INCH PIPE = 1 MIN 53 SEC; (6) 6-INCH PIPE = 2 MIN 50 SEC; (8) 8-INCH PIPE = 4 MIN 43 SEC, OR 1.187 X LENGTH OF PIPE TESTED, WHICHEVER IS GREATER; (C) 8-INCH PIPE = 3 MIN 47 SEC, OR 1.760 X LENGTH OF PIPE TESTED, WHICHEVER IS GREATER; (D) 10-INCH PIPE = 4 MIN 50 SEC, OR 1.187 X LENGTH OF PIPE TESTED, WHICHEVER IS GREATER; (E) 12-INCH PIPE = 5 MIN 40 SEC, OR 1.709 X LENGTH OF PIPE TESTED, WHICHEVER IS GREATER.
- CONDUCT LEAKAGE TESTING OF MANHOLES. LOOP INVERTS AND FILL MANHOLE WITH WATER. ALLOWABLE WATER DROP IN MANHOLE TO BE FIELD DETERMINED BY UTILITY AND ENGINEER. MINIMUM TEST DURATION IS ONE (1) HOUR.
- CONDUCT DEFLECTION TESTING OF PIPELINE AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. MAXIMUM ALLOWABLE PIPE DEFLECTION IS 5%. MEASURE DEFLECTION BY MANUALLY PULLING A MANDREL THROUGH THE PIPE. THE MINIMUM MANDREL OUTER DIAMETER SHALL BE IN ACCORDANCE WITH THE FOLLOWING: 6-INCH SEWER = 5.45-INCH MANDREL; 8-INCH SEWER = 7.28-INCH MANDREL; 10-INCH SEWER = 9.08-INCH MANDREL; 12-INCH SEWER = 10.79-INCH MANDREL; 14-INCH SEWER = 13.20-INCH MANDREL; 16-INCH SEWER = 16.13-INCH MANDREL; 18-INCH SEWER = 18.06-INCH MANDREL; 21-INCH SEWER = 21.36-INCH MANDREL; 24-INCH SEWER = 24.06-INCH MANDREL.
- DEFLECTION TESTING IS CONSIDERED SATISFACTORY IF THE MANDREL CAN BE PULLED BY HAND THROUGH THE PIPE BEING TESTED. IF THE MANDREL CANNOT BE PULLED THROUGH THE PIPE, REPEACE OR CORRECT THE PIPE AND RE-TEST UNTIL TESTING IS SATISFACTORY. ANY PIPE REMOVED OR CORRECTED DUE TO FAILING DEFLECTION TESTING SHALL ALSO BE RE-TESTED FOR LEAKAGE.

SEPARATION REQUIREMENTS:

- THE MINIMUM HORIZONTAL AND VERTICAL SEPARATION BETWEEN WATER MAINS AND SANITARY SEWER, STORM SEWER, WASTEWATER FORCE MAINS, STORMWATER FORCE MAINS, RECLAIMED WATER MAINS AND ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS SHALL BE IN ACCORDANCE WITH CURRENT REGULATORY STANDARDS. THE FOLLOWING SUMMARIZES MINIMUM SEPARATION REQUIREMENTS, WHICH SHALL BE VERIFIED BY THE CONTRACTOR FOR APPLICABILITY BY THE AGENCIES THAT HAVE REGULATORY AUTHORITY WHERE CONSTRUCTION OCCURS.

HORIZONTAL SEPARATION:

- THE OUTSIDE OF WATER MAINS SHALL BE A MINIMUM OF THREE (3) FEET FROM THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORM WATER FORCE MAIN, VACUUM TYPE SANITARY SEWER, AND RECLAIMED WATER MAIN.
- THE OUTSIDE OF WATER MAINS SHALL BE A MINIMUM OF SIX (6) FEET FROM THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY SANITARY SEWER AND WASTEWATER FORCE MAIN. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN THE OUTSIDE OF WATER MAINS AND THE OUTSIDE OF GRAVITY SANITARY SEWERS CAN BE REDUCED TO THREE (3) FEET WHERE THE BOTTOM OF THE WATER MAIN IS AT LEAST SIX (6) INCHES ABOVE THE TOP OF THE SEWER.
- THE OUTSIDE OF WATER MAINS SHALL BE A MINIMUM OF TEN (10) FEET FROM ALL PARTS OF ANY EXISTING OR PROPOSED ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM SUCH AS SEPTIC TANKS, DRAINFIELDS, AND GREASE TRAPS. ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS DO NOT INCLUDE PACKAGE SEWAGE TREATMENT FACILITIES AND PUBLIC WASTEWATER TREATMENT FACILITIES.

VERTICAL SEPARATION:

- WHEREVER POSSIBLE, WATER MAINS SHALL CROSS OVER EXISTING OR PROPOSED GRAVITY SANITARY SEWER, VACUUM TYPE SANITARY SEWER, ANY STORM SEWER, THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX (6) INCHES ABOVE THE OUTSIDE OF THE SEWER. WHEREVER NOT FEASIBLE, THE WATER MAIN TO CROSS OVER SAID UTILITY, THEN THE WATER MAIN MAY CROSS UNDER SAID PIPE SYSTEMS PROVIDED THE OUTSIDE OF THE WATER MAIN IS AT LEAST FIVE (5) INCHES BELOW THE OUTSIDE OF CROSSING PIPELINE. AT THE CROSSING, THE PROPOSED PIPE JOINTS SHALL BE ARRANGED SUCH THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE (3) FEET FROM VACUUM TYPE SANITARY SEWER OR STORM SEWER JOINTS, AND AT LEAST SIX (6) FEET FROM GRAVITY SANITARY SEWER JOINTS.
- WHEREVER POSSIBLE, WATER MAINS SHALL CROSS OVER EXISTING OR PROPOSED RECLAIMED WATER MAINS, WASTEWATER FORCE MAINS, AND STORMWATER FORCE MAINS. WHEREVER NOT FEASIBLE, WATER MAINS SHALL CROSS UNDER THESE TYPES OF PIPELINES. THE OUTSIDE OF THE WATER MAIN SHALL BE AT LEAST TWELVE (12) INCHES FROM THE OUTSIDE OF SAID UTILITY. AT THE CROSSING, THE PROPOSED PIPE JOINTS SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE (3) FEET FROM RECLAIMED WATER MAIN JOINTS AND STORMWATER FORCE MAIN JOINTS, AND AT LEAST SIX (6) FEET FROM THE JOINTS OF WASTEWATER FORCE MAINS.
- NO WATER MAIN SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SANITARY SEWER MANHOLE.
- NEW OR RELOCATED FIRE HYDRANTS SHALL BE LOCATED SUCH THAT THE UNDERGROUND MAIN (WEEP HOLE) IS AT LEAST:
 - THREE (3) FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORM WATER FORCE MAIN, RECLAIMED WATER MAIN, OR VACUUM TYPE SANITARY SEWER.
 - SIX (6) FEET FROM ANY EXISTING OR PROPOSED GRAVITY SANITARY SEWER AND WASTEWATER FORCE MAIN.
 - TEN (10) FEET FROM ANY ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS SUCH AS SEPTIC TANKS, DRAINFIELDS, AND GREASE TRAPS. ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS DO NOT INCLUDE PACKAGE SEWAGE TREATMENT FACILITIES AND PUBLIC WASTEWATER TREATMENT FACILITIES.
- THE FOLLOWING ARE ACCEPTABLE ALTERNATIVE CONSTRUCTION VARIANCES WHERE IT IS NOT POSSIBLE TO MEET THE MINIMUM SEPARATION REQUIREMENTS, AND ARE ONLY TO BE IMPLEMENTED UPON RECEIPT OF WRITTEN CONSENT FROM THE ENGINEER AND REGULATORY AGENCY. IMPLEMENTATION OF THESE VARIANCES WITHOUT WRITTEN CONSENT MAY RESULT IN REMOVAL AND REPLACEMENT OF THE INSTALLED ITEM BY THE CONTRACTOR AT NO COST TO THE DEVELOPER OR ENGINEER.
 - WHERE A WATER MAIN IS LESS THAN THE MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE, OR WHERE A WATER MAIN CROSSES ANOTHER PIPELINE PLACING DISTANCE BETWEEN THE MINIMUM REQUIRED DISTANCE BETWEEN THE JOINTS IN THE OTHER PIPELINE:
 - USE PRESSURE-RESISTANT PIPE CONFORMING TO ALL STANDARDS FOR A GRAVITY OR VACUUM TYPE PIPELINE.
 - USE WELDED, FUSED, OR OTHER RESTRAINED JOINTS FOR EITHER PIPELINE.
 - USE OF WATERTIGHT CASING PIPE OR CONCRETE ENCASEMENT AT LEAST FOUR (4) INCHES THICK FOR EITHER PIPE.
 - WHERE A WATER MAIN IS LESS THAN THREE (3) FEET HORIZONTAL FROM ANOTHER PIPELINE OR WHERE A WATER MAIN CROSSES ANOTHER PIPELINE WITH LESS THAN THE REQUIRED MINIMUM SEPARATION:
 - USE CASING PIPE OR CASING PIPE HAVING HIGH IMPACT STRENGTH (AT LEAST EQUAL TO 0.25 INCH THICK DUCTILE IRON PIPE), OR CONCRETE ENCASEMENT AT LEAST FOUR (4) INCHES THICK FOR THE WATER MAIN AND FOR THE OTHER PIPELINE IF THE OTHER PIPELINE CONVEYS WASTEWATER OR RECLAIMED WATER.

POTABLE AND RECLAIMED (REUSE/GRAY) WATER DISTRIBUTION SYSTEMS:

- ALL WATER AND RECLAIMED MAIN PIPE SHALL BE EITHER DUCTILE IRON OR PVC UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- BURIED DUCTILE IRON PIPE SHALL CONFORM WITH ANSI/AWWA C150/A21.50 AND C151/A21.51, AND SHALL HAVE A MINIMUM WORKING PRESSURE OF 150 PSI. BURIED PIPE SHALL COMPLY WITH THE FOLLOWING PRESSURE CLASS (PC) DESIGNATIONS UNLESS OTHERWISE INDICATED ON THE DRAWINGS: A) 12-INCH DIAMETER AND SMALLER - PC 350; B) 14-INCH THROUGH 24-INCH DIAMETER - PC 250; C) 30-INCH THROUGH 64-INCH DIAMETER - PC 200.
- EXPOSED PIPE FOUR (4) INCHES AND LARGER SHALL BE DUCTILE IRON FLANGED AND SHALL CONFORM WITH AWWA/C151/A21.15, AND SHALL HAVE A MINIMUM WORKING PRESSURE OF 150 PSI. FLANGED PIPE SHALL COMPLY WITH THE FOLLOWING THICKNESS CLASS (TC) DESIGNATIONS UNLESS OTHERWISE INDICATED ON THE DRAWINGS: A) 4-INCH DIAMETER - TC 54; B) 6-INCH THROUGH 24-INCH DIAMETER - TC 53.
- DUCTILE IRON PIPE AND FITTINGS WITHIN TEN (10) FEET OF GAS MAINS SHALL HAVE AN 8-MIL POLYETHYLENE WRAP IN ACCORDANCE WITH ANSI/ASTM D1248.
- PVC PIPE 4-INCH TO 12-INCH SHALL CONFORM TO AWWA C900. PIPE 14-INCH TO 36-INCH SHALL CONFORM TO ASTM D1774, TYPE I, GRADE 1, 4000 PSI DESIGN STRESS, AND SHALL BE NATIONAL SANITATION FEDERATION (NSF) APPROVED. PIPE SHALL BE CLASS 150 (DR18) WITH MARKINGS ON EACH SECTION SHOWING CONFORMANCE TO THE ABOVE SPECIFICATIONS. JOINTS SHALL HAVE RUBBER GASKETS CONFORMING TO AWWA C900 OR C905. THE BELT SHALL BE INTEGRAL WITH THE PIPE AND OF EQUAL OR GREATER PRESSURE RATING. THE BELT OF PIPE AND FITTINGS USING PUSH-ON JOINTS SHALL HAVE AN INTEGRAL GROOVE TO RETAIN THE GASKET IN PLACE.
- ALL FITTINGS SHALL BE MANUFACTURED OF DUCTILE IRON, CONFORMING TO ANSI/AWWA C110/A21.10 OR ANSI/AWWA C153/A21.53. ALL FULL-BODY (C110/A21.10) FITTINGS SHALL BE PRESSURE RATED TO MINIMUM 250 PSI. ALL COMPACT FITTINGS (C153/A21.53) SHALL BE PRESSURE RATED TO MINIMUM 350 PSI.
- ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE UNED AND COATED. INTERIOR LINING SHALL BE STANDARD THICKNESS ANSI A21.4 CEMENT MORTAR LINING AND BITUMINOUS SEAL COAT. EXTERIOR COATING FOR BURIED PIPE AND FITTINGS SHALL HAVE AN ANSI A21.51 OR A21.10 BITUMINOUS COATING. EXTERIOR COATING OF EXPOSED PIPE AND FITTINGS SHALL BE FACTORY-APPLIED, RUST-INHIBITING, EPOXY PRIMER, MINIMUM 3MILS DRY-FILM THICKNESS. AFTER INSTALLATION, EXTERIOR SURFACES SHALL BE PAINTED WITH TWO (2) COATS TME-GLOSS SERIES 2 TME-GLOSS, GLEDDEN LIFE MASTER PRO HIGH PERFORMANCE ACRYLIC NO. 9900 SERIES, OR EQUAL, AT MINIMUM 4 MILS DRY-FILM THICKNESS PER COAT. PAINT COLOR TO BE IN ACCORDANCE WITH LOCAL UTILITY REQUIREMENTS.
- MECHANICAL AND PUSH-ON JOINTS FOR DUCTILE IRON PIPE AND FITTINGS SHALL HAVE RUBBER GASKETS, CONFORMING TO ANSI/AWWA C111/A21.11. LUBRICANTS OTHER THAN THAT FURNISHED BY THE PIPE MANUFACTURER WITH THE PIPE SHALL NOT BE USED.
- ALL FITTINGS SHALL BE RESTRAINED IN ACCORDANCE WITH DIPA "THRUST RESTRAINT DESIGNED FOR DUCTILE IRON PIPE". PIPE JOINTS SHALL BE RESTRAINED UPSTREAM AND DOWNSTREAM OF FITTINGS IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS OR AS SHOWN ON THE DRAWINGS, WHICHEVER IS GREATER. DUCTILE IRON RESTRAINED JOINTS SHALL BE AMERICAN FAST GRIP GASKET, FLEX-RING, FIELD FLEX RING, LOCK-RING, US PIPE TR-FLEX, EBA MEGALUG, OR EQUAL. PVC PIPE JOINTS SHALL BE RESTRAINED USING MECHANICAL DEVICES, UNI-FLANGE BLOCK BUSTER SERIES 1550 OR ENGINEER-APPROVED EQUAL.
- ALL SERVICE PIPING 1/4-INCH TO 3-INCH SHALL BE POLYETHYLENE SDR-PR PIPE SHALL BE MANUFACTURED FROM PE3408 AND SHALL CONFORM TO AWWA C901. ALL PIPE SHALL BE DR7, PRESSURE CLASS 200 PSI. PIPE AND FITTINGS SHALL BE NSF APPROVED FOR THE USAGE TO WHICH THEY ARE TO BE APPLIED. JOINTS IN SDR-PR PIPE SHALL BE BUTT HEAT FUSION OR SOCKET HEAT FUSION TYPE. FITTINGS SHALL BE MANUFACTURED OF THE SAME MATERIAL AS THE PIPE AND SHALL BE OF THE SAME SDR OR LESS. PROVIDE ADAPTERS AS REQUIRED TO JOIN PE PIPE TO PIPE, FITTINGS AND EQUIPMENT OF OTHER MATERIALS.
- ALL SERVICE SADDLES SHALL CONSIST OF DUCTILE IRON BODIES IN ACCORDANCE WITH ASTM A536, WITH DOUBLE STAINLESS STEEL STRAPS, BOLTS, WASHERS AND NUTS. STAINLESS STEEL SHALL BE TYPE 304. NUTS SHALL BE TEFLON COATED. DUCTILE IRON BODY SHALL BE FUSION-BONDED NYLON COATING, MINIMUM THICKNESS 12 MILS. OUTLET OF SADDLE SHALL HAVE NPT THREADS.
- ALL SERVICES SHALL INCLUDE CURB STOPS, UNIONS AS REQUIRED, CORPORATION STOPS, AND SHALL CONFORM TO AWWA C805 AND C901. THE CONTRACTOR SHALL STAMP "W" IN THE TOP CURB OF EACH WATER SERVICE AND A "C" AT ALL VALVE LOCATIONS. STAMP W'S AND V'S SHALL BE NEATLY HIGHLIGHTED WITH BLUE PAINT.
- UNLESS OTHERWISE NOTED IN THE PLANS, THE UTILITY COMPANY SHALL PROVIDE AND INSTALL WATER METERS AND RECLAIMED WATER METERS. CONTRACTOR SHALL CONSTRUCT WATER SERVICE AND RECLAIMED WATER SERVICE TO THE CORPORATION STOP.
- UNLESS OTHERWISE INDICATED OR SPECIFIED, ALL VALVES TWO (2) INCHES AND SMALLER SHALL BE ALL BRASS OR BRONZE; VALVES LARGER THAN TWO (2) INCHES SHALL BE IRON BODY, FULLY BRONZE OR BRONZE MOUNTED.
- VALVES FOUR (4) INCHES AND LARGER SHALL BE UNED AND COATED. INTERIOR OF VALVES SHALL BE COATED WITH A RUST-INHIBITING EPOXY PRIMER, FOLLOWED BY A COAL-TAR EPOXY, WITH TOTAL MINIMUM DRY FILM THICKNESS OF 16 MILS APPLIED AT THE FACTORY. EXTERIOR COATING ON BURIED VALVES SHALL BE RUST-INHIBITING EPOXY PRIMER, FOLLOWED BY A COAL-TAR EPOXY, WITH TOTAL MINIMUM DRY FILM THICKNESS OF 16 MILS APPLIED AT THE FACTORY. EXTERIOR COATING OF EXPOSED VALVES SHALL BE FACTORY-APPLIED RUST-INHIBITING EPOXY PRIMER WITH MINIMUM 3 MILS DRY FILM THICKNESS. AFTER INSTALLATION, EXTERIOR SURFACES SHALL BE PAINTED WITH TWO (2) COATS TME-GLOSS SERIES 2 TME-GLOSS, GLEDDEN LIFE MASTER PRO HIGH PERFORMANCE ACRYLIC NO. 9900 SERIES, OR EQUAL, AT A MINIMUM DRY FILM THICKNESS PER COAT. PAINT COLOR TO BE IN ACCORDANCE WITH LOCAL UTILITY REQUIREMENTS.
- ALL VALVES TWELVE (12) INCHES AND SMALLER SHALL BE GATE VALVES UNLESS OTHERWISE INDICATED ON THE DRAWINGS. GATE VALVES THREE (3) INCHES TO TWELVE (12) INCHES SHALL CONFORM TO AWWA C509. THE VALVES SHALL BE IRON BODY, CAST IRON FULLY ENCAPSULATED MOLDED RUBBER WEDGE CUT WITH ASTM A500, WITH NON-RAISING STEM WITH O-RING SEALS. VALVES SHALL OPEN COUNTERCLOCKWISE.
- TAPPING VALVES AND SLEEVES SHALL CONFORM TO THE REQUIREMENTS OF AWWA C509 FOR SIZE REQUIRED.
- VALVES FOURTEEN (14) INCHES AND LARGER SHALL BE BUTTERFLY VALVES. BUTTERFLY VALVES SHALL MEET OR EXCEED THE DESIGN STRENGTH, TESTING AND PERFORMANCE REQUIREMENTS OF AWWA C504, CLASS 150. VALVE BODY SHALL BE MECHANICAL JOINT END TYPE VALVE. CONSTRUCTION SHALL BE CAST IRON OR DUCTILE IRON. DISC SHALL BE ONE PIECE CAST DESIGN WITH NO EXTERNAL RIBS TRANSVERSE TO FLOW. DISC SHALL BE CAST IRON OR DUCTILE IRON. THE DISC SHALL BEAT SHALL BE WITH A 304 OR 316 STAINLESS STEEL SURFACE.
- VALVE SEATS SHALL BE MECHANICALLY RESTRAINED, AND MAY BE INSTALLED ON EITHER THE BODY OR DISC. SEATING SEATS IN VALVE DISCS SHALL BE ACCEPTED. SEATS FOR VALVES FOURTEEN (14) INCHES DIAMETER AND LARGER SHALL BE FULLY FIELD REPLACEABLE WITH THE USE OF SPECIAL TOOLS. OPERATORS FOR THE ENCLOSED TRAVELING-NUT TYPE SHALL BE PROVIDED UNLESS OTHERWISE INDICATED.
- ALL BURIED VALVES SHALL BE PROVIDED WITH ADJUSTABLE VALVE BOXES APPROXIMATELY FIVE (5) FEET IN DIAMETER, WITH MINIMUM THICKNESS OF 3/16-INCH CAST IRON. BOXES SHALL BE OF SUFFICIENT LENGTH TO OPERATE ALL VALVES BURIED IN THE GROUND. THEY SHALL CONSIST OF BASE AND TOP SECTION, AND TOP SECTION WITH COVER. VALVE BOXES LOCATED IN UNPAVED AREAS SHALL BE SLIP TYPE DESIGN TO PERMIT MOVEMENT OF THE SECTION WITHOUT TRANSMITTING FORCES ONTO THE VALVE BODY. VALVE BOXES CAST INTO CONCRETE OR ASPHALT SURFACES SHALL HAVE BRASS COVERS. VALVE BOX COVERS SHALL BE INTERNALLY CHAINED TO VALVE BOXES WITH APPROXIMATELY EIGHTEEN (18) INCH GALVANIZED STEEL CHAINS. VALVE BOX COVERS SHALL BE CAST WITH THE INSCRIPTION "WATER" OR "RECLAIMED WATER".
- PVC PIPE SHALL BE COLOR-CODED BLUE (WATER MAINS) OR PURPLE (RECLAIMED WATER MAINS). STENCIL "WATER LINE" OR "RECLAIMED WATER LINE" AS APPLICABLE (2-INCH LETTERING ON TWO (2) SIDES OF THE PIPE IN AT LEAST THREE (3) AREAS PER PIPE SECTION).
- INSTALL IDENTIFICATION TAPE ALONG ALL DUCTILE IRON PIPE, PVC PIPE, AND FITTINGS. TAPE SHALL BE MINIMUM THICKNESS 4 MILS, WIDTH SIX (6) INCHES, LETTER SIZE ONE (1) INCH. APPLY TAPE TO SURFACE OF PIPE CONTINUOUSLY EXTENDING FROM JOINT TO JOINT. TAPE COLOR AND LETTERING SHALL BE BLACK PRINTING ON BLUE BACKGROUND (WATER MAINS) OR BLACK PRINTING ON PURPLE BACKGROUND (RECLAIMED WATER MAINS). TAPE AS FOLLOWS: 2-INCH TO 8-INCH PIPE: CENTER ALONG TOP HALF OF PIPE; 10-INCH TO 18-INCH PIPE: PLACE ALONG BOTH SIDES OF THE TOP HALF OF PIPE; 20-INCH AND LARGER: PLACE ON BOTH SIDES OF TOP HALF OF PIPE WITH A THIRD STRIP CENTERED ALONG TOP HALF OF PIPE.
- INSTALL WARNING TAPE ALONG ALL PIPELINES. PLACED TWO (2) FEET ABOVE PIPE. TAPE SHALL BE SIX (6) INCHES WIDE VINYL, CONTINUOUS TAPE. TAPE SHALL BE COLORED BLUE (WATER MAIN) OR PURPLE (RECLAIMED WATER MAINS) WITH BLACK LETTERING, CODED AND WORDED "CAUTION: WATER MAIN BURIED BELOW," OR "CAUTION: RECLAIMED WATER MAIN BURIED BELOW," AS APPLICABLE.
- INSTALL LOCATING WIRE ALONG ALL PIPELINES. WIRE SHALL BE COLOR-CODED 14 GAUGE CONTINUOUS INSULATED WIRE. COLOR CODING SHALL BE SIMILAR TO WARNING TAPE COLORS. INSTALL LOCATING WIRE ALONG ALL PRESSURIZED PIPELINES TWO (2) INCHES AND LARGER. LOOP WIRE INTO ALL VALVE BOXES. LOOPING TO OCCUR EVERY FIVE HUNDRED (500) FEET MINIMUM. WHERE THERE ARE NO VALVE BOXES TO ALLOW LOOPING, PROVIDE ACCESS BOXES PER JURISDICTIONAL REQUIREMENTS. CHECK WIRE FOR ELECTRICAL CONTINUITY.
- ALL CHANGES IN DIRECTION SHALL BE MADE WITH FITTINGS OR APPROVED JOINT DEFLECTION. BENDING OF PIPE, EXCEPT COPPER AND POLYETHYLENE AS SPECIFIED BY MANUFACTURER, IS PROHIBITED. JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURER'S RECOMMENDED MAXIMUM DEFLECTION.
- TEST PROCEDURES SHALL BE APPROVED BY THE JURISDICTIONAL AGENCY AND ENGINEER. ALL TESTS SHALL BE MADE IN THE PRESENCE OF THE ENGINEER, JURISDICTIONAL AGENCY, AND UTILITY COMPANY, AS APPROPRIATE. ENGINEER AND UTILITY COMPANIES SHALL BE NOTIFIED AT LEAST FORTY-EIGHT (48) HOURS BEFORE WORK IS TO BE INSPECTED OR TESTED.
- PROVIDE ALL EQUIPMENT FOR TESTING. INCREMENTS ON GAGES USED FOR LOW PRESSURE AIR TESTING SHALL BE OF SCALED TO THE NEAREST 0.1 PSI. GAGES, PUMPS, AND HOSES SHALL BE IN GOOD WORKING ORDER WITH NO NOTICEABLE LEAKS.
- ALL SERVICE LINES SHALL BE COMPLETED PRIOR TO TESTING, AND ARE SUBJECT TO THE SAME TESTING REQUIREMENTS AS THE MAIN LINE.
- APPLY HYDROSTATIC TEST PRESSURE OF 150 PSI (WATER MAINS), 200 PSI (FIRE MAINS), OR 100 PSI (RECLAIMED WATER MAINS) FOR TEN (10) MINUTES AND FOR ANY ADDITIONAL PERIOD NECESSARY FOR THE ENGINEER TO COMPLETE THE INSPECTION OF THE LINE BEING TESTED. DO NOT EXCEED PIPE MANUFACTURER'S SUGGESTED TIME DURATION AT THE TEST PRESSURE. IF DEFECTS ARE NOTED, REPAIRS SHALL BE MADE AND THE TEST REPEATED UNTIL ALL PARTS OF THE LINE SATISFACTORYLY WITHSTAND THE TEST PRESSURE.
- APPLY LEAKAGE TEST PRESSURE OF 150 PSI (WATER MAINS), 200 PSI (FIRE MAINS) OR 100 PSI (RECLAIMED WATER MAINS). MAINTAIN PRESSURE AT A MAXIMUM VARIATION OF 5% DURING THE ENTIRE LEAKAGE TEST. THE DURATION OF THE LEAKAGE TEST SHALL BE TWO (2) HOURS MINIMUM, AND FOR ANY ADDITIONAL TIME NECESSARY FOR THE ENGINEER TO COMPLETE INSPECTION OF THE SECTION OF LINE BEING TESTED. LEAKAGE MEASUREMENTS SHALL NOT COMMENCE UNTIL A CONSTANT TEST PRESSURE HAS BEEN ESTABLISHED. THE LINE LEAKAGE SHALL BE MEASURED BY MEANS OF A WATER METER INSTALLED ON THE SUPPLY SIDE OF THE PRESSURE PUMP.
- NO LEAKAGE IS ALLOWED IN EXPOSED PIPING, BURIED PIPING WITH FLANGED, THREADED, OR WELDED JOINTS, OR BURIED NON-POTABLE PIPING IN CONFLICT WITH POTABLE WATER LINES.
- TESTED SECTIONS OF BURIED PIPING WITH SLIP-TYPE OR MECHANICAL JOINTS WILL NOT BE ACCEPTED IF IT HAS A LEAKAGE RATE IN EXCESS OF THAT RATE DETERMINED BY THE FORMULA L = SDP/132200 (AWWA C-600 DUCTILE IRON MAINS), OR L = NDP/7400 (AWWAC-605 -PVC MAIN); WHERE L = MAXIMUM PERMISSIBLE LEAKAGE RATE, IN GALLONS PER HOUR, THROUGHOUT THE ENTIRE LENGTH OF LINE BEING TESTED; S = LENGTH OF LINE TESTED (IN FEET); D = NOMINAL INTERNAL DIAMETER (IN INCHES) OF THE PIPE; N = NUMBER OF JOINTS ALONG LINE BEING TESTED; AND P = THE SQUARE ROOT OF THE ACTUAL PRESSURE IN PSIG ON ALL JOINTS IN THE TESTED PORTION OF THE LINE. THIS ACTUAL PRESSURE SHALL BE DETERMINED BY FINDING THE DIFFERENCE BETWEEN THE AVERAGE ELEVATION OF ALL TESTED PIPE JOINTS AND THE ELEVATION OF THE PRESSURE GAUGE AND ADDING THE DIFFERENCE IN ELEVATION HEAD TO THE AUTHORIZED TEST PRESSURE.
- ALL APPARENT LEAKS DISCOVERED WITHIN ONE (1) YEAR FROM THE DATE OF THE DEVELOPER'S FINAL ACCEPTANCE OF THE CONTRACTOR'S WORK SHALL BE LOCATED AND REPAIRED BY CONTRACTOR, REGARDLESS OF THE TOTAL LINE LEAKAGE RATE.
- DISINFECT ALL POTABLE WATER LINES, FIRE LINES, VALVES, FITTINGS, HYDRANTS.
- ALL DISINFECTION WORK SHALL BE ACCEPTABLE TO THE STATE HEALTH AUTHORITY. IF ANY REQUIREMENTS OF THIS SECTION ARE IN CONFLICT WITH REQUIREMENTS OF THE AUTHORITY FOR DISINFECTION, THOSE OF THE AUTHORITY SHALL GOVERN. THE WATER MAIN DISINFECTION AND BACTERIOLOGICAL SAMPLING, AND METHODS OF DISINFECTION FOR ALL WATER CONTAINMENT DEVICES AND PIPING SYSTEMS SHALL CONFORM TO AWWA C651.

PAVING, SIDEWALKS, AND CURBING

- MATERIALS AND CONSTRUCTION METHODS FOR THE ROADWAY AND PAVING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
- ROADWAY PAVING, BASE, AND SUBGRADE THICKNESSES, MATERIAL STABILITY, AND DENSITY REQUIREMENTS SHALL BE IN ACCORDANCE WITH DETAILS ON THESE DRAWINGS AND THE GEOTECHNICAL REPORT.
- SIDEWALKS ARE TO BE CONSTRUCTED IN THE AREAS AS SHOWN ON THE CONSTRUCTION PLANS. THE SIDEWALK SHALL BE CONSTRUCTED OF MINIMUM 4 INCHES OF CONCRETE WITH A 28-DAY COMPRESSION STRENGTH OF 2500 PSI. JOINTS SHALL BE EITHER TOOLED OR SAW CUT AT A MAXIMUM DISTANCE OF 5 FEET. ACCESSIBLE RAMPS SHALL BE PROVIDED AT ALL INTERSECTIONS AND SHALL BE IN ACCORDANCE WITH THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION, LATEST EDITION.
- CURBING SHALL BE CONSTRUCTED WHERE NOTED ON THE CONSTRUCTION PLANS. CONCRETE FOR CURBS SHALL BE FOOT CLASS "1" CONCRETE WITH A MINIMUM 28-DAY COMPRESSION STRENGTH OF 2500 PSI. ALL CURBS SHALL HAVE SAW CUT CONTRACTION JOINTS AND SHALL BE CONSTRUCTED AT INTERVALS NOT TO EXCEED 10 FEET ON CENTER. CONSTRUCTION OF CURBS SHALL BE IN CONFORMANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION) SECTION 520 AND DETAILS PROVIDED ON THE CONSTRUCTION PLANS.
- FIELD COMPACTION DENSITY, STABILITY, AND THICKNESS TESTING FREQUENCIES OF SUBGRADE, BASE, AND ASPHALT SHALL BE TESTED ONCE EVERY 300 LINEAR FEET OF PAVING PER 24-FEET WIDE STRIP, STAGGERED LEFT, CENTER AND RIGHT OF CENTERLINE, WHERE LESS THAN 300 LINEAR FEET OF SUBGRADE, BASE, AND ASPHALT IS PLACED IN ONE (1) DAY, PROVIDE MINIMUM OF ONE (1) TEST FOR EACH DAYS CONSTRUCTION AT A LOCATION DESIGNATED BY THE ENGINEER. ASPHALT EXTRACTION GRAVITY SHALL BE TESTED FROM GRAB SAMPLES COLLECTED ONCE EVERY 1800 SQUARE YARDS OF ASPHALT DELIVERED TO THE SITE (OR A MINIMUM OF ONE (1) DAY).
- PAVING TAMPING REQUIREMENTS ARE AS FOLLOWS:
 - INSTALL SUBGRADE AND BASE COURSE MATERIALS WITHIN 48 HOURS OF THE REMOVAL/OPEN CUTTING OF EXISTING PAVEMENT CONSISTING OF STREETS, DRIVEWAYS, SIDEWALK. INSTALL FINAL SURFACE COURSES WITHIN 14 DAYS AFTER REMOVAL OF EXISTING PAVEMENT.
 - AREAS TO RECEIVE ASPHALT SHALL RECEIVE EROSION CONTROL MEASURES NO LATER THAN 48 HOURS AFTER ACCEPTANCE OF BASE COURSE. TEMPORARY EROSION CONTROL CONSISTS OF PLACEMENT OF A BITUMINOUS PRIME COAT AND SANDING THE SURFACE. PERMANENT EROSION CONTROL CONSISTS OF INSTALLATION OF THE STRUCTURAL COURSE.
 - AREAS TO RECEIVE CONCRETE PAVING SHALL BE EITHER PROTECTED WITH A LAYER OF FDOT COARSE AGGREGATE MATERIAL OR SHALL BE PAVED WITHIN 48 HOURS OF ACCEPTANCE OF THE SUBGRADE.

SIGNS AND PAVEMENT MARKINGS

- ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND THE LATEST IMPLEMENTED EDITION OF FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS (INDEX NO. 9535, 11880, 11862, 11858, 11802, 17349, 17348, 17349 AP, 17349 AP). GENERALLY, ALL MARKINGS SHALL CONFORM TO THE FOLLOWING: 6-INCH EDGE LINES, 6-INCH LANE LINES, 6-INCH SINGLE CENTERLINES, AND 12-INCH DOUBLE LINE PATTERNS, UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL ROADWAY PAVEMENT MARKINGS IN RIGHT-OF-WAY SHALL BE PAINTED OR THERMOPLASTIC WITH RAISED PAVEMENT MARKERS (TYPE 911 - 4" X 4"), AS INDICATED ON PLANS. RAISED PAVEMENT MARKERS ARE TO BE INSTALLED IN ACCORDANCE WITH PLANS AND FDOT INDOT 17352.
- ON-SITE PAVEMENT MARKINGS SHALL BE PAINTED. PAINT SHALL MEET THE REQUIREMENTS OF SECTION 911, NON-REFLECTIVE WHITE TRAFFIC PAINT.
- ALL ROADWAY TRAFFIC SIGNS SHALL BE MANUFACTURED USING HIGH INTENSITY RETRO-REFLECTIVE MATERIALS. THE BACK OF ALL FINISHED PANS SHALL BE STENCILED WITH THE DATE OF FABRICATION, THE FABRICATOR'S INITIALS, AND THE NAME OF THE PROJECT MEETING IN 3-INCH LETTERS.
- INTERNAL SITE TRAFFIC SIGNS SHALL BE REQUIRED TO BE RETRO-REFLECTIVE.
- THE CONTRACTOR SHALL VERIFY THE REQUIRED LENGTH OF THE SIGN AND SUPPORTS IN THE FIELD PRIOR TO FABRICATION.
- PRIOR TO FINAL PAVEMENT MARKING INSTALLATION, A SHORT TIME OF THE ASPHALT PER THE MANUFACTURER'S SPECIFICATIONS IS REQUIRED.

ACCESSIBILITY

- SITE IMPROVEMENTS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT AND THE FLORIDA ACCESSIBILITY CODE. THE CONTRACTOR SHALL FURNISH THE OWNER AND ENGINEER WITH PLAN THAT ALL APPLICABLE FEATURES AND AREAS OF THE SITE ARE IN COMPLIANCE WITH THE AFOREMENTIONED CRITERIA.

AS-BUILT DRAWINGS

- ALL AS-BUILT DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER AT LEAST THREE (3) WEEKS PRIOR TO FINAL INSPECTION, INCLUSIVE OF THE FILE FORMAT NECESSARY FOR PROJECT CLOSEOUT. ALL AS-BUILT DATA SHALL BE PROVIDED BY A STATE-LICENSED SURVEYOR, SIGNED, SEALED AND DATED BY THE RESPONSIBLE PARTY.
- UPON COMPLETION OF THE WORK, DELIVER THE DRAWINGS DOCUMENTING AS-BUILT INFORMATION, MEASURED BY A LICENSED SURVEYOR, TO THE ENGINEER, IN GOOD CONDITION AND FREE FROM ANY EXTRANEOUS NOTATION. THE AS-BUILT INFORMATION IS TO INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
 - ORIGINAL LOCATIONS AND VERTICAL ELEVATIONS FOR ALL UTILITY AND STORM STRUCTURES INCLUDING BUT NOT LIMITED TO MANHOLES, INLETS AND CLEANOUTS, INCLUDING STRUCTURE TOP AND INVERT ELEVATIONS.
 - DISTANCE ALONG PIPELINES BETWEEN STRUCTURES.
 - STORMWATER CONVEYANCE SYSTEMS INCLUDING DIMENSIONS, ELEVATIONS, CONTOURS, AND CROSS SECTIONS.
 - HORIZONTAL LOCATIONS AND VERTICAL ELEVATIONS OF ALL UTILITY VALVES, FITTINGS, CONNECTION POINTS, ETC.
 - VERTICAL ELEVATIONS OF ALL PIPELINES AT CROSSINGS OF POTABLE WATER MAINS (WHETHER THE WATER MAIN IS EXISTING OR NEW) IN ORDER TO DOCUMENT THAT THE MINIMUM REQUIRED VERTICAL SEPARATION HAS BEEN MET.
 - UTILITY PIPELINE TIED HORIZONTAL TO EDGE OF PAVEMENT AND RIGHT-OF-WAY LINES. LOCATED EVERY 200-FIT PLUS ALL CHANGES IN HORIZONTAL OFFSET.
 - PAVEMENT WIDTH AND ELEVATIONS AT THE CENTERLINE AND EDGE OF PAVEMENT EVERY 200 FEET PLUS AT ALL CHANGES IN LONGITUDINAL SLOPE, CROSS SLOPE, INLET LOCATIONS, AND AT ALL DRIVEWAY AND STREET INTERSECTIONS. FOR PARKING LOTS, RECORD CENTERLINE AND EDGE OF PAVEMENT ELEVATIONS ALONG ALL DRIVE AISLES AND ISLANDS.
 - ALL PARKING AREAS AND SIDEWALK RAMPS DESIGNATED FOR ADA ACCESS SHALL CONTAIN HORIZONTAL AND VERTICAL MEASUREMENTS IN ORDER TO VERIFY REQUIRED WIDTHS AND SLOPES HAVE BEEN MET.
 - HORIZONTAL AND VERTICAL DATA FOR ANY CONSTRUCTION THAT DEVIATES FROM THE APPROVED ENGINEERING DRAWINGS.
 - WHERE THE PLANS CONTAIN SPECIFIC HORIZONTAL LOCATION DATA, SUCH AS STATION AND OFFSET, THE AS-BUILT DRAWINGS ARE TO REFLECT THE ACTUAL HORIZONTAL LOCATION.
 - WHERE THE PLANS CONTAIN SPECIFIC VERTICAL ELEVATION DATA, THE AS-BUILT DRAWINGS ARE TO REFLECT THE ACTUAL MEASURED VERTICAL ELEVATION.
 - BENCHMARKS

CONSTRUCTION ABANDONMENT PROCEDURE

- IF CONSTRUCTION OF IMPROVEMENTS IS TERMINATED PRIOR TO COMPLETION PER THE APPROVED CONSTRUCTION DOCUMENTS, THE OWNER SHALL REMOVE ANY CONSTRUCTION AND STOCKPILED VEGETATIVE DEBRIS AND FILL AND DISPOSE OF SUCH MATERIALS AT A LEGALLY-APPROVED OFF-SITE LOCATION. DISTURBED LAND SHALL BE ROUGH GRADED, SEEDED AND MULCHED.

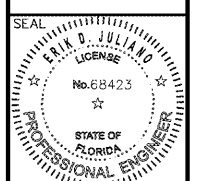
FORTUITOUS FINDS

- IF EVIDENCE OF THE EXISTENCE OF HISTORIC RESOURCES IS DISCOVERED OR OBSERVED AT THE SITE, ALL WORK SHALL CEASE IN THE AREA OF EFFECT, AND THE DEVELOPER, OWNER, CONTRACTOR, OR AGENT THEREOF SHALL NOTIFY THE APPROPRIATE AGENCY IMMEDIATELY. EXAMPLES OF SUCH EVIDENCE INCLUDE WHOLE OR FRAGMENTARY STONE TOOLS, SHELL TOOLS, ABORIGINAL OR HISTORIC POTTERY, HISTORIC GLASS, HISTORIC BOTTLES, BONE TOOLS, HISTORIC BUILDING FOUNDATIONS, SHELL MOUNDS, SHELL MIDDENS, OR SAND MOUNDS. UPON THE AGENCY'S TIMELY ASSESSMENT OF THE SIGNIFICANCE OF THE FINDS, NOTIFICATION TO MITIGATE ANY ADVERSE EFFECTS SHALL BE ISSUED SO AS TO MINIMIZE DELAYS TO DEVELOPMENT ACTIVITIES.
- IF ANY HUMAN SKELETAL REMAINS OR ASSOCIATED BURIAL ARTIFACTS ARE DISCOVERED AT THE SITE, ALL WORK IN THE AREA MUST CEASE, AND THE PERMITEE MUST IMMEDIATELY NOTIFY THE NEAREST LAW ENFORCEMENT OFFICE AND THE APPROPRIATE PERMITTING AGENCY. ACCORDING TO CHAPTER 872, FLORIDA STATUTES, IT IS UNLAWFUL TO DISTURB, VANDALIZE, OR DAMAGE A HUMAN BURIAL.

Bowman
CONSULTING

Bowman Consulting Group, Ltd.
One Urban Centre
4850 W. Kennedy Blvd.
Suite 600
Tampa, FL 33609
Phone: (813) 509-5403
www.bowmanconsulting.com
Certificate of Authorization License No. 30482

GENERAL NOTES
WAWA
COUNTRYSIDE BLVD & U.S. HWY 19
CLEARWATER, PINELLAS COUNTY
FLORIDA



ERIK D. JULIANO, P.E.
LICENSE NO. 68423
05/24/2017

PLAN STATUS	
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