



**DEVELOPMENT DESIGN REVIEW CHECKLIST**

This checklist serves as a guide for the consultant and the County in the preparation and review of development utility submittals for County acceptance. This checklist does not purport to contain all requirements for acceptance of development utility design documents. Any questions regarding items contained herein should be referred to St. Lucie County Utilities for clarification. Applicable page number or detail number in the St. Lucie County Utilities *Water, Wastewater & Reclaimed Water Design Criteria and Technical Specifications* and *Water, Wastewater & Reclaimed Water Construction Details* are included for reference.

**NOTE: PLANS SUBMITTED WITHOUT A COMPLETED CHECKLIST MAY BE RETURNED WITHOUT REVIEW**

Site/Project Name: \_\_\_\_\_ Date: \_\_\_\_\_

Submittal No.: \_\_\_\_\_ Utilities to be Privately Owned: \_\_\_\_\_

Consultant: \_\_\_\_\_ Applicant: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_ Email Address: \_\_\_\_\_

Consultant: Please complete the checklist below by indicating the following:  
 C or ✓ = Complete or checked; X = Not Applicable; O = Outstanding, need to address  
 Please place the appropriate symbol in the CONSULT column.

Item #	Design Checklist Item	Reference	CONSULT	SLCU
<b>A</b>	<b>GENERAL INFORMATION</b>			
A-1	Plan sheet size is 22" x34" or 24" x36"	01100-1.4-A-1		
A-2	All applicable plan sheets are to scale with the scale clearly noted and a graphic scale provided on each drawing	01100-1.4-A-3		
A-3	All applicable plan sheets have an arrow indicating north (pointing up or to the right)	01100-1.4-A-4		
A-4	A cover sheet is provided that includes project title, name of developer, name of engineering firm, a project location map with nearby and/or adjacent streets labeled.	01100-1.4-A-5		
A-5	A Utility Master Site Plan is provided that clearly depicts water, wastewater, and reclaimed water systems. All phases of construction shall be clearly shown. The Utility Master Site Plan shall be a 1" = 40' scale. If the entire project area does not fit on one sheet multiple sheets shall be used and a separate Key Map provided. Each Utility Master Site Plan sheet shall contain the key map in a corner (if applicable) with the particular sheet identified.	01100-1.4-A-6		

A-6	Plan and profile sheets are provided for all utilities.	01100-1.4-A-7		
A-7	Plan and Profile Sheets shall be drawn at 1" = 20' or 1" = 30' horizontal scale, and 1" = 2' to 1" = 5' vertical scale.	01100-1.4-A-7		
A-8	Each Plan and Profile Sheet displays the plan view above the profile view, and depicts the same length of utility installation. The plan is aligned vertically with the profile.	01100-1.4-A-7		
A-9	The Plan and Profile Sheet plan view show all water mains, valves, fittings, fire hydrants, services, meters, blow-off assemblies, wastewater mains, manholes, wyes, laterals, cleanouts, reclaimed water mains, storm water lines, electric lines, gas lines, paving, curbs and gutters, ROW lines, property lines, and all existing and proposed features.	01100-1.4-A-8		
A-10	The Plan and Profile Sheet profile views show the existing and proposed finished grade over proposed and existing gravity wastewater mains.	01100-1.4-A-9		
A-11	All wastewater gravity lines and wastewater force mains are shown in profile view.	01100-1.4-A-9		
A-12	All stormwater lines in close proximity to depicted wastewater, water, and reclaimed water mains are shown in profile view.	01100-1.4-A-9		
A-13	All crossings (stormwater, wastewater, reclaimed water, and water mains) and all additional relevant utility information shall	01100-1.4-A-9		
A-14	A Master Drainage Plan showing the stormwater facilities, including the 100-year floodplain elevation, wetlands, creeks and adjacent floodplains, with elevations is included. Wetlands, creeks, ponds, and any other water body are clearly delineated.	01100-1.4-A-10		
A-15	Landscape Plans show existing and proposed tree locations and species, and shall include all potable water, reclaimed water, and wastewater utilities, shown clearly, without labeling.	01100-1.4-A-11		
A-16	Irrigation Plans are provided including pumping facilities, storage reservoirs, mains, valves, controllers, individual lot irrigation systems, and irrigation schedules.	01100-1.4-A-12		
A-17	Utility Space Allocation Cross-sections for each different roadway section and utility easement are included.	01100-1.4-A-13		
A-18	Wastewater clean-outs, potable and reclaimed water meters are shown.	01100-1.4-A-13		
A-19	Proposed trees shall be depicted on the utility allocations, including those within 20 feet of all ROW lines.	01100-1.4-A-13		
A-20	All materials shown on the plans are clearly labeled (i.e. pipe, valves, fire hydrants, fire sprinkler lines, water meters, backflow preventers, fittings, manholes, services, and clean outs) with associated elevations, sizes, types, material, slopes, and appurtenances.	01100-1.4-A-14		
A-21	Materials are labeled on each sheet on which the materials are shown.	01100-1.4-A-14		
A-22	All wastewater design information (pipe sizes, lengths, materials, slopes, manhole top and invert elevations, and cleanout top and invert elevations) are shown.	01100-1.4-A-15		
A-23	All existing wastewater service stub-outs to subject parcels are to be included in the drawings.	01100-1.4-A-15		



**ST. LUCIE COUNTY UTILITIES**  
**2300 Virginia Avenue, Ft. Pierce, FL 34982**  
**(772) 462-1150**

A-24	Presentation of manhole information is recommended to be in a "Sanitary Sewer Structures Schedule" format, but in any case, must be shown on all sheets where manhole is drawn.	01100-1.4-A-15		
A-25	Elevations (manhole and cleanout tops and inverts) and pipe sizes of all existing wastewater facilities that cross and/or are adjacent to the property are shown.	01100-1.4-A-16		
A-26	The design drawings indicate any required grease, oil, sand, or lint separators and/or other pre-treatment systems required as part of the wastewater system.	01100-1.4-A-17		
A-27	All existing and proposed utility easements are shown with dimensions.	01100-1.4-A-18		
A-28	All applicable Utility Construction Notes identified in the Construction Standards are included.	01100-1.4-A-20		
A-29	Boundary/Topographic Survey is provided that contains all required information.	01100-1.4-A-21		
A-30	All applicable standard details are provided.	01100-1.4-A-22		
A-31	Details for connections to existing utilities are provided.	01100-1.4-A-23		
A-32	Project phase lines are shown if applicable.	01100-1.4-A-24		
A-33	Interferences with conflicting pipes with indication of "over" or "under" are called out as appropriate.	01100-1.4-A-25		
A-34	All road crossing and pavement cuttings and restorations are detailed and are in accordance with requirements of the particular authority governing the area.	01100-1.4-A-26		
<b>B</b>	<b>POTABLE WATER</b>			
B-1	Signed and sealed hydraulic analysis of transmission and distribution system completed using WaterCAD Version 8i or	01100-1.3-A-3		
B-2	Potable water design single family residential average daily flow of 100 gpcd or 350 gpd/ERC used.	01100-2.1-A-1		
B-3	Historical or comparable facility flows provided for Multi-Family Residential, Commercial, and Industrial Flows.	01100-2.1-A-1		
B-4	Hydraulic analysis includes the following scenarios: 1) MDD + FF while maintaining 20 psi minimum through the distribution system. 2) PHD while maintaining 30 psi throughout the distribution system.	01100-2.1-A-2		
B-5	Minimum pipe diameter is 6 inches within looped systems and 8 inches on dead-ends.	01100-2.1-A-3		
B-6	Fire flow requirements are identified and meet the requirements of 01100-2.1-B.	01100-2.1-B		
B-7	Water mains are no less than five feet from the edge of roadway improvements, such as edge of pavement or back of curb/gutter.	01100-2.1-C-1		
B-8	Where practical and consistent with other main locations in the area, water mains are located on the north side of east-west streets and on the east side of north-south streets.	01100-2.1-C-1		

B-9	Mains are not placed on or adjacent to interior property lines or on private property. Exceptions to this will only be approved when unavoidable or when necessary for looping and when sufficient easements are provided to the operation and maintenance entity	01100-2.1-C-1		
B-10	Water mains are located a minimum of 10 feet horizontal separation, edge-of-main to edge-of-main, from existing and proposed sewers.	01100-2.1-C-2		
B-11	For water mains crossing sewers, a minimum of 18 inches shall be maintained from the outside of the water main to outside of the sewer main. At the crossing, one full-length joint of water main shall be laid in such a way that both joints will be as far from the sewer as possible. Sanitary sewers, force mains and storm sewers should cross under water mains, wherever possible.	01100-2.1-C-2		
B-12	Horizontal separations of 15 feet to buildings, trees, top-of-banks of lakes and canals and other structures are maintained.	01100-2.1-C-2		
B-13	Dead-ends are equipped with a blow-off device or fire hydrant for flushing purposes	01100-2.1-C-3		
B-14	All mains that dead end and that are intended for future expansion include a line size valve and blow-off. The gate valve shall be mechanically restrained in accordance with applicable construction standards. The blow-off must be designed to be removed without interruption to service.	01100-2.1-C-3		
B-15	Blow-off devices are sized to provide a minimum of 2.5 feet per second flushing velocity in the water main.	01100-2.1-C-3		
B-16	Pipelines are restrained at all valves, bends, tees, crosses and dead-ends. This distance shall be determined by the Design Engineer in accordance with specific conditions/circumstances on each pipeline design project but in no case shall be less than the restrained length distance specified in the Construction Standards.	01100-2.1-C-4		
B-17	All distribution systems are valved to facilitate the isolation of each section of pipeline between intersections of the grid system. Generally, the number of valves at an intersection shall be one less than the number of pipes forming the intersection. It is the intent of this criteria to provide for the isolation of mains that serve areas containing more than twenty-five service connections.	01100-2.2-A		
B-18	Valves are spaced no more than 800 feet apart. In high-density areas, valves shall be installed as necessary to minimize the number of persons affected by a break.	01100-2.2-B		
B-19	Fire hydrants are provided at each street intersection within the distribution system and at intermediate points that will provide a maximum 600 foot spacing between each hydrant in all water mains, transmission and distribution systems.	01100-2.3-A-1		
B-20	Location of fire hydrants are at least one foot from ROW/property line and within 15 feet from edge of pavement, face of curb, etc. (except as required by FDOT), no less than five feet from driveways and/or back of curb and not within the swale/ditch or sidewalk area.	01100-2.3-A-2		

B-21	Hydrants are located so as to minimize vulnerability to traffic. When placed within five feet of the edge of the street or paved area without raised curbs, the hydrant are protected from damage by the installation of 4" X 6' concrete filled steel posts set three feet in to 12 inch diameter concrete filled holes.	01100-2.3-A-2		
B-22	Air relief valves are located at points in the water main profile where entrapped air can accumulate.	01100-2.4-A		
B-23	Water services do not exceed 100 feet in length to the meter with the meter generally placed at the property line, at an accessible location.	01100-2.5-B		
B-24	All services crossing under roadways are installed in a casing with not less than 36 inches between the pavement and the top of the casing.	01100-2.5-B		
B-25	Meters identified in grassy unobstructed areas generally at property lines, clear from buildings, fences, shrubs, trees, fire hydrants, cable boxes, etc. Meter boxes are out of pedestrian walkways and out of driveway areas or other concrete/paved surface,	01100-2.5-C		
B-26	Service lines are provided from the main to property line at vacant lots with a magnetic marker identifying the location of the end of the service.	01100-2.5-D		
B-27	Signed and sealed foundation/support designs are provided when aerial crossings are required.	01100-2.6-B		
B-28	Sub-aqueous pipe crossings are made of DIP.	01100-2.6-C		
B-29	There shall be no physical connection between a safe water supply and a questionable water supply, a reclaimed water supply, or a sanitary or storm sewage system that would allow unsafe water to enter the safe water system by direct pressure, vacuum gravity or any other means.	01100-2.7-A		
B-30	Connections to existing system are made by tapping sleeves, cut-in tees, or existing stub-outs. Each connection to an existing system shall include an isolation valve.	01100-2.8-A		
<b>C</b>	<b>WASTEWATER</b>			
C-1	Signed and sealed hydraulic analysis of transmission and collection system completed using SewerCAD Version 8i or approved equivalent.	01100-1.3-A-3		
C-2	Wastewater design is based on an average daily flow of 100 gpcd.	01100-3.1-A		
C-3	Historical or comparable facility flows provided for institutional, commercial, industrial parks, etc.	01100-3.1-A		
C-4	All developments where foods will be prepared, processed or served shall have a grease trap of adequate capacity with solids retention device installed through which the wastewater from the preparation area shall pass prior to entering the sanitary sewer system.	01100-3.1-B-1		
C-5	All developments producing industrial wastes included an appropriate onsite pre-treatment systems approved by the District and subject to the St. Lucie County Industrial Pretreatment Program.	01100-3.1-B-2		

C-6	Minimum gravity sewer size is 8 inches.	01100-3.1-C-1		
C-7	Design information is provided demonstrating that gravity sewer mains maintain hydraulic slopes sufficient to maintain a minimum velocity of 2.0 feet per second, based on Manning's formula using an "N" value of 0.013, when flowing full or half full.	01100-3.1-C-2		
C-8	Gravity sewer slopes are no less than minimum slopes detailed in 01100-3.1-C-2.	01100-3.1-C-2		
C-9	Design information is provided demonstrating that new sewer mains 15 inches and smaller in diameter are sized to carry the projected peak wet weather flow at a depth not greater than half of the inside diameter of the pipe (dn/D not to exceed 0.5). New sewer mains 18 inches and larger are sized to carry the projected peak wet weather flow at a depth of flow not greater than 3/4 of the inside diameter of the pipe (dn/D not to exceed 0.75).	01100-3.1-D		
C-10	Gravity sewer mains are designed in straight alignments with uniform slope.	01100-3.1-E-1		
C-11	Gravity sewer mains of different diameters shall connect at a sewer manhole. The invert of the larger main shall be lowered sufficiently below the smaller main to maintain the same energy gradient.	01100-3.1-E-2		
C-12	Gravity sewer main direction changes, within a sewer manhole, do not exceed 90 degrees. Flow direction changes in excess of 45 degrees include an extra 0.1 feet of drop across the inflow and outflow of the manhole.	01100-3.1-E-3		
C-13	Drop manholes are installed when the invert of the influent pipe is greater than 2.0 feet above the outgoing invert of the manhole. Where the difference in inverts is equal to or less than 2.0 feet, the invert across the manholes shall be grouted to prevent deposition of solids.	01100-3.1-E-4		
C-14	All gravity sewer mains terminate at sewer manholes.	01100-3.1-E-5		
C-15	Separation from reclaimed water mains is at least five feet.	01100-3.1-E-6		
C-16	Vertical separation from a water main is a minimum of 18 inches between the outside of the pipes. Sanitary sewers and force mains cross under water mains.	01100-3.1-E-6		
C-17	All gravity sewer mains are designed to prevent damage from all anticipated live and dead loads. Where necessary, as determined by the Engineer, special bedding, haunching and initial backfill or other special construction methods are provided.	01100-3.1-F		
C-18	Manholes are installed at the termination of all gravity sewer mains, grade breaks, changes in the sewer main diameter, changes in alignment and at distances not exceeding 400 feet.	01100-3.2-A-1		
C-19	Manholes are placed in accessible paved areas flush with finished grade.	01100-3.2-A-2		



C-20	Manholes are only placed outside of hardened surfaces with written approval from the District and have a rim elevation a minimum of 6 inches above finished grade with a 10:1 slope back to finished grade.	01100-3.2-A-2		
C-21	Manholes shall not be placed in low lying areas where storm water infiltration may occur.	01100-3.2-A-3		
C-22	The minimum depth of manholes is no less than four feet from the finished grade to invert of the manhole.	01100-3.2-B		
C-23	Force mains shall not be less than four-inch diameter location.	01100-4.1-A		
C-24	Design information is provided demonstrating that the design velocity within force mains are 2 feet per second or greater at the ultimate minimum operational pumping flow.	01100-4.1-A		
C-25	All private force mains entering County or FDOT ROW include a valve at the ROW line to delineate the change in maintenance responsibilities.	01100-4.1-B		
C-26	Valves along subsidiary force mains are every 1,500 feet and at the point of connections to larger trunk mains. Where force mains are to be extended, a valve and restrained plug are installed at the future point of connection. In high density areas, valves are installed at closer intervals as necessary to minimize the number of persons affected by the break.	01100-4.2-A		
C-27	Force mains enter a termination wet wells at a point equivalent to the operating level of the wet well. At a termination gravity manhole, the force main shall enter no higher than two feet above the flow line of the receiving manhole. Force mains shall never enter a manhole from a direction contrary to the direction of flow out of the manhole.	01100-4.3		
<b>D</b>	<b>LIFT STATIONS</b>			
D-1	Pumping stations shall have a minimum of two, equal capacity, submersible pumps. When pumping rates exceed 1,000 gallons per minute (GPM), three or more pumps shall be required. Pumps shall be sized such that with any one pump off-line, then the remaining pump(s) can handle the design flow.	01100-5.1-B-1		
D-2	The pumping design flow (peak design flow) rate is the maximum contiguous three month average daily flow multiplied by the appropriate peak hourly factor, as established by the Design Engineer and approved by the District, based on established standard engineering practices. The maximum contiguous three months average daily flow shall be from all contributory areas within the individual pumping station service area based on existing flows within the service area and anticipated flows through the next five years.	01100-5.1-C-1		
D-3	Design information is provided demonstrating that the pump station operational volume meets or exceeds the minimum volume specified in	01100-5.1-D-1		
D-4	Low water level is set to provide complete submergence of pumps at shut-off. The high water alarm is set at the invert elevation of the lowest influent pipe.	01100-5.1-D-2		

D-5	Buoyancy calculations are provided that do not take into consideration the wet well interior fillets, top slab, pumps and piping. Ground water elevation shall be assumed at natural ground level, unless special circumstances dictate other assumptions.	01100-5.1-D-3		
D-6	Wet well top slab elevation and electrical components of the station are above the 100-year flood elevation.	01100-5.1-D-4		
D-7	All stations shall be designed for 230 volt or 460 volt, 3 phase electric service with emergency power feed hookup. A non-fused main disconnect shall be provided.	01100-5.1-E-1		
D-8	Electrical fixtures/components at the station are sized for expansion of the pump and load.	01100-5.1-E-2		
D-10	Pump control panel housing are NEMA type 4X, constructed of 316 stainless steel (14 gauge, minimum).	01100-5.1-E-2		
D-11	The panel shall be equipped with a hard wired phone line and autodialer.	01100-5.1-E-3		
D-12	Control circuitry within the control panel provides automatic alternation of each pump during each cycle.	01100-5.1-E-4		
D-13	Each control panel shall have a main and emergency circuit breaker.	01100-5.1-E-5		
D-14	Unless permanent standby power is provided a generator power receptacle is provided on the exterior of the pump control panel on the side facing the gate.	01100-5.1-E-6		
D-15	Lift stations serving more than 500 ERCs or receiving flow from one or more lift stations are equipped with permanent standby power generation and automatic transfer switch.	01100-5.1-F		
D-16	Isolation valves and check valves are provided on the discharge of each pump. A valve pit or vault are provided for access to the valves.	01100-5.1-G-1		
D-17	Discharge piping are a minimum of 4" in diameter.	01100-5.1-G-2		
D-18	Each pumping station is provided with a minimum 1 ½-inch potable water supply. Each supply has a hose bibb and reduced pressure zone, backflow preventer.	01100-5.1-H		
D-19	All pumping stations are enclosed by chainlink fencing.	01100-5.1-I-1		
D-20	Easements and/or ROW of sufficient size are provided for vehicle access to the station. An easement or deed for the lift station site will be required.	01100-5.1-I-2		
D-21	All pumping station sites are provided with minimum of 6-inch thick reinforced concrete slab within the fenced area and a minimum 6-inch reinforced concrete driveway and apron connected to a paved road that will allow routine access which will support all anticipated loads.	01100-5.1-I-3		
D-22	Hinges for access hatches on both the pumping station top slab and valve pit are configured to allow both hatches to open outward or away from the other and toward the panel.	01100-5.1-I-4		





E	RECLAIMED WATER			
E-1	Signed and sealed hydraulic analysis of reclaimed water transmission and distribution system completed using WaterCAD Version 8i or approved equivalent.	01100-6.2		
E-2	A scales drawing of the site irrigation plan including pump facilities, storage reservoirs, mains, valves, controllers, individual lot irrigation systems, and irrigation schedules is provided.	01100-6.1		
E-3	Locations for the installation of Public Notification Signage are sited on the drawings with details of the standard.	01100-6.1		
E-4	The system is designed to maintain a minimum pressure of 30 psi at ground level at all points in the distribution system under all conditions of flow. The normal working pressure in the distribution system should be approximately 65 psi and not less than 40 psi.	01100-6.2-B		
E-5	The minimum size of reclaimed water mains used as trunk systems is 6 inches.	01100-6.2-B		
E-6	Horizontal separation of 15 feet to buildings, trees, top of banks of lakes and canals, and other structures is maintained with reclaimed water mains.	01100-6.2-C-b		