

INTRODUCTION

This Manual has been established by action of the Board of County Commissioners and is authorized by County Ordinance 2004-31, as amended.

This Utilities Standards Manual has been prepared to guide the design, construction, and asset management of potable water, non-potable irrigation water, and wastewater system extensions to Collier County Water-Sewer District (COUNTY) utilities; the Manual applies to utilities in new developments in the County, as well as County Projects involving utilities.

The following standards shall be included in the design and preparation of plans and specifications for all utilities construction projects for Collier County, including utilities and services connected to the COUNTY's utilities systems or constructed for future transfer of ownership to the COUNTY. These standards are provided for uniformity in utilities construction within Collier County, and represent MINIMUM standards acceptable to the COUNTY.

Not all specification details may apply to an individual project; however, approval of utilities construction within Collier County will require conformance to applicable requirements of these specifications. Approval of any deviation from the specifications must be obtained utilizing the appropriate form included in Appendix A, Utility Deviation Form.

NOTE: Go to <https://www.colliercountyfl.gov/your-government/divisions-f-r/public-utilities-planning-and-project-management/utilities-standards-manual> for the latest revisions to the Utilities Standards Manual.

Item	Sub-Section / Detail	Revision Summary	Fiscal Impact to Developer (Approx.)
Section 1 - Design Criteria			
1	Part 1 General	The document was reorganized to group all general requirements in Part 1, followed by water and non-potable irrigation water in Part 2, wastewater in Part 3, and electrical and control systems in Part 4.	None
2	1.1 Pipeline Separation Requirements	Clarified the last sentence of the first paragraph to indicate that 57 stone is required only where vertical separation is less than 18 inches.	None (already required by detail)
3	1.1 Pipeline Separation Requirements	Deleted the clause concerning ductile iron pipe from the second sentence of the third paragraph for consistency with an earlier revision eliminating DIP as an option for force mains and to eliminate the ambiguity regarding water mains.	None
4	1.2 Horizontal Directional Drilling	Introduced new requirements for detailed construction drawings to be prepared by a licensed Florida P.E. for any capital improvement project using HDD.	Staff CIP projects only
5	2.1 Pipe and Fitting Material	Add requirement that potable water mains 16" and larger be DIP or HDPE (i.e. eliminate PVC option).	\$10 to \$50 per LF, depending on size
6	2.2.1 [1.2.1] Water Pipeline Sizing Criteria	Condensed hydraulic design analysis to fire flow under peak hour conditions rather than separate analyses for peak hour and maximum day with fire flow conditions, simplified all water design demands to be 1.4 times the corresponding wastewater design flows, and revised chloramine dissipation modeling criteria for consistency with the hydraulic design criteria.	None
7	2.2.1 [1.2.1] Water Pipeline Sizing Criteria	Replaced paragraph A to require a source pressure assumption based upon a recent fire flow test and provided an equation for converting test results into a design source pressure.	Potential savings on smaller dia. pipe
8	2.2.1 Water Pipeline Sizing Criteria	Revised mg/l to PPM	None

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9	2.2.2 [1.2.2] Distribution System Layout	Clarified requirements for water main looping and automatic flushing devices.	None
10	2.6.1 [1.6.1] Service Pipelines	Clarified requirements for water service conduits.	None
11	2.6.2 [1.6.2] Water Meters	Delete separate meter requirement for cooling towers	\$1500 to \$5000 per each, depending on size
12	2.7 [1.7] Air Release Assemblies	Extend ARV requirement to all County owned water mains and not just transmission (16" and larger) water mains.	\$2500 per each
13	2.10 Laboratory Testing and Sample Collection	Allowed for 60 day bacteriological tests on mains 8 inches and smaller.	None
14	Part 3 [2] Wastewater Collection and Transmission Systems	Clarified peak hour factor calculation for residential and non-residential uses.	None
15	3.1.3 [2.1.3] Gravity Sewer Main Extension Stubs	Allow a gravity sewer main stub-out to end with a manhole.	None
16	3.1.4 [2.1.4] Gravity Sewer Laterals	Require concrete collars on all County-owned sewer cleanouts.	\$250 per each
17	3.1.5 [2.1.5] Manholes	Allow manholes to be located in any stabilized surface.	Potential cost savings will vary by project.
18	3.1.5 [2.1.5] Manholes	Require the angle between the inlet and outlet pipe within manholes to be no less than 90 degrees.	Potential cost increase will vary by project.
19	3.2.1 [2.2.1] Pipe and Fitting Materials	Restrict the use of DIP for force mains to aerial crossings and aboveground flanged pipe only.	None
20	3.2.1 [2.2.1] Pipe and Fitting Materials	Revised delineation of ownership between private and public ownership to a plug valve instead of a check valve	None

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21	3.3 [2.3] Wastewater Pump Stations	Augmented the sixth paragraph to reinforce an FDEP requirement to provide uninterrupted pumping capability to any pump station that receives flow from one or more upstream pump stations or discharges through a force main 12 inches or larger.	None - Already required by FDEP rules.
22	3.3 [2.3] Wastewater Pump Stations	Added the seventh paragraph to require conveyance of all new pump stations to the CCWSD, except for grinder pump stations, which must be approved by Deviation and must include a standard generator receptacle.	Small projects will incur conveyance costs, but Deviation already req'd for GPS.
23	3.3 [2.3] Wastewater Pump Stations	Clarified that landscaping is allowed around wastewater pump stations but must be maintained by the developer.	None
Section 2 - Technical Specifications			
24	012000 Measurement and Payment	This section of the USM was deleted in its entirety. The reason for this deletion was due to the fact that the section was not applicable to private industry (developer projects) and was not sufficiently detailed or flexible to be used on County/capital projects.	None
25	022200 Preconstruction Video	Revised requirements to indicate DVD's instead of VHS's	None
26	022501 Leakage Tests	Clarification on testing requirements for Force Mains	None
27	025400 Disinfection	Added language (3.3) exempting fire service pipelines less than 20 feet in length from installing a gap configuration.	-\$4,000 per occurrence (savings)
28	034100 Precast Concrete Structures	This revision allows for additional options (polymer concrete) for industry to utilize instead of various approved coating systems.	None
29	099723 Concrete Coatings	This revision updated the list of approved coating systems and manufacturers to meet current needs.	None

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30	221336 Standby Diesel Pumps	This specification was created to clarify what diesel pumps are required at wastewater pump stations.	None (Diesel pumps were already required)
31	263213.13 Standby Diesel Generators	This specification was created to clarify what generators are required at wastewater pump stations.	None (Generators were already required)
32	312316 Excavation Earth and Rock	Removed language regarding payment for rock removal.	None
33	323133 Chain Link Fencing and Gates	Various revisions to make the specification consistent with Detail WW-7C	None
34	330502 HDPE Pipe and Fittings	Revision to "mechanical joining of pipe". Simple clarification / revision.	None
35	330503 PVC Pipe and Fittings	Revision to the requirement for ductile iron pipe beneath roadways, replaced with DR-14 PVC	None
36	330504 Ductile Iron Pipe and Fittings	Various revisions to the requirement of ductile iron pipe. These updates were the result of the County working directly with industry professionals in order to update the existing specification to meet current industry standards for ductile iron pipe.	None
37	330518 Laying and Jointing of Buried Pipe	Removed reference to bituminous coating on bolts and threads.	-\$20 per fitting (savings)
38	330523.13 Horizontal Directional Drilling	Revisions to the requirements for tracer wire. Simple clarification / revision.	None
39	331200 Water Valves and Appurtenances	Clarified valves smaller than 2" to be cast iron per AWWA C509, valves 2" and larger to be ductile iron per AWWA C515, and all stainless steel components and hardware to be a minimum of Type 304.	None
40	331619 Hydrants	An additional valve was added to hydrant leads crossing a roadway to facilitate maintenance and repairs. Private systems are exempt.	\$1250 per occurrence

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41	331619 Hydrants	Increased the maximum distance between the nearest valve and the hydrant from 5 feet to 20 feet.	-\$1250 per valve not req'd (savings)
42	333200 Pump Stations	Clarified all stainless steel components and hardware to be a minimum of Type 304, but require Type 316 stainless steel bolting for aboveground valves and piping.	\$150 per PS
43	333200 Pump Stations	Removed requirement for mix flush system to be installed, revised to require a bolted cover for future system.	-\$1,500 per occurrence (savings)
44	333313 Wastewater Valves	Clarified all stainless steel components and hardware to be a minimum of Type 304; corrected material for exposed nuts, bolts, and washers on eccentric plug valves from zinc or cadmium plated to stainless steel; require exposed nuts, bolts, and washers on check valves to be Type 316 stainless steel; and corrected material for bolting on buried mechanical joints from stainless steel to COR-TEN. Except for the change related to check valves, all other changes reflect standard practice and therefore have no fiscal impact.	\$100 per CV; none for clarification and corrections
45	333913 Sewer Manholes	This revision allows for additional options (polymer concrete) for industry to utilize instead of various approved coating systems.	None
Section 3 - Utilities Detail Drawings			
46	G-2 Paved Area Trench Restoration Detail	This detail was revised to remove the notes regarding pavement repairs and instead reference the Collier County right-of-way handbook to ensure the two sources of information do not conflict. Clarifications of text and labels.	None
47	G-2A State Road, Major Road, and Numbered County Road Flowable Fill Road and Trench Restoration	This detail was revised to remove the notes regarding pavement repairs and instead reference the Collier County right-of-way handbook to ensure the two sources of information do not conflict. Clarifications of text and labels.	None



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48	G-2B Road and Trench Restoration for Local Roads	This detail was revised to remove the notes regarding pavement repairs and instead reference the Collier County right-of-way handbook to ensure the two sources of information do not conflict. Clarifications of text and labels.	None
49	G-3 Pipe Separation Detail	Revised note 2 for consistency with 1.1 of the Design Criteria and Section 330518 3.2 P.2 of the Technical Specifications.	None
50	G-7 Typical Valve Setting Detail	Added a PVC stub out in the concrete valve pad to accommodate for termination of tracer wires (normally used in directional drills).	\$500 per valve box (on HDD's only)
51	G-8 Typical Horizontal Directional Drill (HDD) Under a Roadway	Removed the requirement to install casing pipes, clarified the graphical image to match the notes.	>-\$5,000 (savings) on most drills, depending on size
52	G-9 Typical Subaqueous Horizontal Directional Drill (HDD)	Removed the requirement to install casing pipes, added a warning sign (shown on both side of the waterbody now), clarified the depth requirements for the water body crossing.	>-\$5,000 (savings) on most drills, depending on size
53	G-9A Subaqueous Water Main Valve Detail	Removed the concrete vault from the detail and replaced it with a water meter box for testing/sampling purposes.	-\$2500 (savings)
54	G-11 Vehicular Guard Post Detail	Addition of a yellow plastic sleeve over the bollard for aesthetic purposes.	\$250 per bollard
55	W-3 Fire Hydrant Detail	Miscellaneous changes for more accurate depiction, to eliminate redundancy with detail G-7, and to specify a range for the height of the nozzle above finished grade.	None
56	W-3 Fire Hydrant Detail	Increased the maximum distance between the nearest valve and the hydrant from 5 feet to 20 feet.	-\$1250 per valve not req'd (savings)

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57	W-4 Connection to Existing Water Main Detail	Added note 11, exempting fire service pipelines less than 20 feet in length from installing a gap configuration.	-\$4,000 per occurrence (savings)
58	W-8 2-1/2" and Smaller Fire System Detector Check Assembly Detail	Detail previously was for 3" and smaller assemblies, allowing for brass or ductile iron components. Detail was revised to apply to 2.5" and smaller assemblies, allowing only brass (ductile iron is not available in sizes smaller than 3"). Removed a wye strainer. Revised delineation of ownership location.	-\$250 per assembly (savings)
59	W-11 3" and Larger Fire System Detector Check Assembly Detail	Revised detail to apply to 3" and larger assemblies (previously 4" and larger). Removed an air release valve, removed a strainer, removed a gate valve, changed from 45 to 90 degree bends. Revised delineation of ownership location.	-\$1,500 per assembly (savings)
60	W-12 Typical Short and Long Side Water Service Meter Setting Detail	This detail was modified to accommodate the new detail W-12A which was created to clarify meter sizing requirements.	None
61	W-12A Service Connection Sizing Chart and Notes	Newly created detail which clarifies meter sizing in relation to service connection piping. Revised landscape setback requirements from 1.5' to 3'.	None
62	W-13 3" and Over Potable Water Meter Assembly Detail	Revised the order of components on the above ground assembly (moved the air release valve after the gate valve), revised the graphical image to match the text (showing a full size bypass being installed).	None
63	W-14 4" and Over Potable-Water Fire and Domestic Meter Assembly Detail	This detail has been deleted and combined with detail W-13.	None

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64	W-14A Maintenance Driveway for Water Meters 3" and Larger	Removed a non-applicable reference to a former detail.	None
65	NP-1 Standard Irrigation Water Meter Non- Telemetry Meter Assembly 3" and Larger	Revisions to the above ground meter assemblies including the removal of the back-pressure sustaining valve, relocation of the ARV after the gate valve, removed the motor operated butterfly valve, etc.	-\$6200 per assembly, depending on size (savings)
66	NP-E2 Standard Irrigation Water Meter Assembly 3" and Larger - Telemetry	Added a new pressure transmitter, moved the location of the air release valve, removed the backpressure sustaining valve, added a flow control valve, misc. electrical revisions.	\$2500 per assembly, depending on size
67	WW-2 Private Force Main Connection to County Force Main Detail	Clarification for delineation of ownership (at the terminus plug valve), added a second plug valve at the ROW/CUE line.	\$1,200
68	WW-3 Precast Reinforced Concrete Manhole Detail	Clarified the location of manholes to be in pavement "or equivalently stabilized surface"	Potential savings in paving costs
69	WW-7 Pump Station Detail - Profile	Clarified the "Pump Off" float elevation and set a minimum submergence of 18 inches.	≤ 7" add'l wetwell depth
70	WW-7 Pump Station Detail - Profile	Changed the drop pipe adjacent to the wetwell from ductile iron to HDPE, deleted the HDPE flange adapter on the bottom side of the corresponding tee, and removed the expansion fitting on the above ground pipe.	-\$500 (savings) per station
71	WW-7 Pump Station Detail - Profile	Added volute opening with bolted cover for future installation of a mix-flush system.	-\$1,500 per occurrence (savings)

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72	WW-7 Pump Station Detail - Profile	Clarified the minimum requirements for size and shape of the footing.	None
73	WW-7C Pump Station and Wastewater Details	Changed the type of gate to be used at wastewater pump stations: switched from a roller style to a cantilever style gate to facilitate maintenance and access.	\$1,500
74	WW-7C Pump Station and Wastewater Details	Added a note to the chain link fence and gate details requiring all components to be vinyl coated.	None - Already required by Section 323113.
75	WW-7C Pump Station and Wastewater Details	Clarified that vinyl coatings may be green or black and that the color of the slats shall match.	None
76	WW-8 & -8A Pump Station Plan Details	Depicted an acceptable site configuration with the wetwell centrally located, adequate access into the site, and accessible locations of equipment, valves, and appurtenances.	None
77	WW-8B Community Pump Station with Diesel Pump Detail – Plan	The bend on the suction side of the diesel pump was changed to a tee w/blind flange.	
78	WW-8,-8A, & -8B Pump Station Plan Details	Revised key notes to require field location of the generator receptacle with Wastewater Collection staff, and revised the details to show the rack-mounted option.	Nominal cost increase for add'l conduit & wiring vs. panel mount
79	WW-8,-8A, & -8B Pump Station Plan Details	Noted that both the suction pipe/wetwell vent and the pump-out connection shall be field located with Wastewater Collection staff.	Potential cost increase will vary by project.
80	WW-8,-8A, & -8B Pump Station Plan Details	Added a reference to detail WW-7C for the fence and gate details.	None
81	WW-8,-8A, & -8B Pump Station Plan Details	Added a sentence to the site configuration note requiring orientation of the control panel to avoid an eastern or western exposure.	None

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82	WW-8, -8A, & -8B Pump Station Plan Details	The right-of-way lines and callouts were deleted.	None
83	WW-8, -8A, & -8B Pump Station Plan Details	Eliminated the grass covered porous pavement option for the 12' access drive.	None
84	WW-9 Pump Station Control Panel Detail	Revised detail to allow either rack-mounted or pedestal-mounted installation of the generator receptacle in a location approved by Wastewater Collection staff based on a review of field conditions.	Varies by site. (\$2,500 max.)
85	WW-11 Sewer Clean-Out Detail Paved Areas	An electronic marker ball was added to the detail to be consistent with outer clean-out installations.	\$100 per clean-out
Section 4 - Appendices			
86	Appendix A Utilities Deviation Form	Appendix A was updated to include the corrected contact information to submit requests, an option for grease trap deviations was added, and language was clarified.	N/A
87	Appendix B Water Meter Sizing Form	Appendix B was updated to match the utility ordinance with regards to meter sizing and also included a clarification regarding upsizing potable water meters to accommodate fire flow.	N/A
88	Appendix D Utilities Conveyance Checklist	Appendix D was updated to reflect the current conveyance process and remove items that are no longer required.	N/A
89	Appendix E Vendor and Manufacturer Approval Application Forms	Appendix E was updated to include the correct contact information for submittals.	N/A
90	Appendix F Approved Products List	Appendix F was revised to update the document and remove companies that are no longer in business, remove items that are no longer used by the Utilities Department, add additional products, correct errors, etc.	Reference "Standard Supplier Change Summary"