Polk County Utilities, Florida

UTILITIES STANDARDS AND SPECIFICATIONS MANUAL

Utilities Code Reference Document 6(B)



Polk County Board of County Commissioners

Authorization #2 - Amendments Effective December 15, 2012

Table of Contents	Section Name	Amendment Description
USSM	Chapter 2 Development Coordination	Part 1 - Part 6 - inserted title names for specific parts of Chapter 2
USSM	Chapter 6 Reclaimed Water	450-D - Inserted cross-reference information for Approved Meters List
Standard Drawings	Water	WA-10 - Inserted reference for new Hydraulically Operated Control Valve detail
Standard Drawings	Reclaimed Water	RW-03 Inserted reference for Reclaimed Water Master Meter Assembly

Authorization #4 - Amendments Effective November 17, 2013

Table of Contents	Section Name	Amendment Description
USSM	Chapter 4 Water, Section 413 and Standard Screens	Added Reference to Chapter 4 - for NEW Sections, 413 Potable Water Production Facility SCADA Specifications and Standard Screens (WA-S-01 through WA-S-08)
USSM	Chapter 5, Wastewater, Section 519 and Standard Screens	Added Reference to Chapter 5 - for NEW Sections, 519 Wastewater Treatment Facility SCADA Specifications and Standard Screens (WW-S-01 through WA-S-12)
USSM	Chapter 6, Reclaimed Water, Section 611 and Standard Screens	Added Reference to Chapter 6 - for NEW Sections, 611 Reclaimed Water Facility SCADA Specifications and Standard Screens (RW-S-01 through RW-S-03)

Authorization #5 - Amendments Effective September 10, 2014

Table of Contents	Section Name	Amendment Description
USSM	Chapter 5, Wastewater, Section 517	Title changed from SCADA RTU Panel Specifications to SCADA and Control Panel Specifications
	Chapter 5, Wastewater,	
USSM	Section 550-K	Added section for SCADA Panel I/O Listing
Standard Drawings	GR-14-1 Pipe Locating Wire	Title changed from Pipe Tracer Wire to Pipe Locating Wire

Table of Contents	Section Name	Amendment Description
Standard Drawings	WW-12-3 Duplex Lift Station	Title changed from Triplex Lift Station - Dimensions and Elevations Table to Duplex Lift Station - Dimensions and Elevations Table
Standard Drawings	WW-12-4 Float Type Level Switch	Added NEW Detail Float Type Level Switch Installation (Typical)

Authorization #6 - Amendments Effective October 3, 2015

Table of Contents	Section Name	Amendment Description
Standard Drawings	WW-12-5 Typical Lift Station HDPE Pipe Bracing	NEW Detail Drawing for Typical Lift Station HDPE Pipe Bracing

Authorization #8 - Amendments Effective November 5, 2017

Table of Contents	Section Name	Amendment Description
USSM	Chapter 7, Supervisory Control and Data Acquisition (SCADA)	NEW Section 710: SCADA Specifications
Standard Drawings	WA-04-1 Fire Service Master Meter Assembly (Single Cross Connection Control Assembly)	Addition of spool piece, tee/restrained joint fittings, gate valve
Standard Drawings	WA-04-2 Fire Service Master Meter Assembly (Double Cross Connection Control Assembly)	Addition of spool piece, tee/restrained joint fittings, gate valve
Standard Drawings	WA-09-1 Master Meter Assembly (3" and larger) (Single Cross Connection Control Assembly)	Addition of spool piece, tee/restrained joint fittings, gate valve
Standard Drawings	WA-09-2 Master Meter Assembly (3" and larger) (Double Cross Connection Control Assembly)	Addition of spool piece, tee/restrained joint fittings, gate valve
Standard Drawings	WW-11 Duplex Lift Station (Typical) Site Plan	Adjust point of connection from master manhole to wetwell; include odor control system
Standard Drawings	WW-12-1 Duplex Lift Station Plan View	Odor control, emergency female quick disconnect coupling
Standard Drawings	WW-12-2 Duplex Lift Station Section View	Odor control system
Standard Drawings	WW-20-1 Duplex Pump Control Panel Site Layout	Site layout instead of front view of panel

Table of Contents	Section Name	Amendment Description
Standard Drawings	WW-20-2 Duplex Pump Junction Box Details	New Detail Drawing
Standard Drawings	WW-20-3 Duplex Pump Conduit Schedules Block Diagram	New Detail Drawing
Standard Drawings	WW-22-1 Duplex Pump Electrical Legend	New Detail Drawing
Standard Drawings	WW-22-2 Duplex Pump Panel Enclosure Layout	New Detail Drawing
Standard Drawings	WW-22-3 Duplex Pump Electrical Panel Interior Layout	New Detail Drawing
Standard Drawings	WW-22-4 Duplex Pump Enclosure Deadfront Layout	New Detail Drawing
Standard Drawings	WW-22-5 Duplex Pump Enclosure Deadfront Layout Details	New Detail Drawing
Standard Drawings	WW-22-6 Duplex Pump Enclosure Bill of Materials	New Detail Drawing
Standard Drawings	WW-22-7 Duplex Pump Nameplate Schedules	New Detail Drawing
Standard Drawings	WW-22-8 Duplex Pump Electrical Power Schematics 230VAC, 3PH	New Detail Drawing
Standard Drawings	WW-22-9 Duplex Pump Electrical Power Schematics 460VAC, 3PH	New Detail Drawing
Standard Drawings	WW-22-10 Duplex Pump Electrical Schematics AC Control Wiring	New Detail Drawing
Standard Drawings	WW-22-11 Duplex Pump Electrical Schematics AC Control Wiring	New Detail Drawing
Standard Drawings	WW-22-12 Duplex Pump Electrical Schematics DC Control Wiring	New Detail Drawing
Standard Drawings	WW-22-13 Duplex Pump Electrical Schematics PLC Digital Inputs	New Detail Drawing
Standard Drawings	WW-22-14 Duplex Pump Electrical Schematics PLC Digital Outputs	New Detail Drawing

Table of Contents	Section Name	Amendment Description
Standard Drawings	WW-22-15 Duplex Pump Electrical Schematics PLC Analog Inputs	New Detail Drawing
Standard Drawings	WW-22-16 Duplex Pump Network Communication Diagram	New Detail Drawing

Authorization #10 - Amendments Effective October 21, 2020

Table of Contents	Section Name	Amendment Description
Standard Drawings	GR-29 Bollard (Typical)	New Detail Drawing
Standard Drawings	WA-01-3 Blow Off Valve (Above Ground) – Automatic	New Detail Drawing/configuration
Standard Drawings	WW-01-1 Doghouse Concrete Manhole	Deleted "Connection"
Standard Drawings	WW-14-2 Triplex Lift Station – Section View	Deleted "Duplex or" and "Above Ground Piping"
Standard Drawings	WW-20-1 Duplex Pump Control Panel Site Layout	Retitled to Lift Station Control Panel Installation
Standard Drawings	WW-20-2 Duplex Pump Junction Box Details	Deleted
Standard Drawings	WW-20-3 Duplex Pump Conduit Schedules Block Diagram	Deleted
Standard Drawings	WW-22-1 Duplex Pump Electrical Legend	Deleted
Standard Drawings	WW-22-2 Duplex Pump Panel Enclosure Layout	Deleted
Standard Drawings	WW-22-3 Duplex Pump Electrical Panel Interior Layout	Deleted
Standard Drawings	WW-22-4 Duplex Pump Enclosure Deadfront Layout	Deleted
Standard Drawings	WW-22-5 Duplex Pump Enclosure Deadfront Layout Details	Deleted
Standard Drawings	WW-22-6 Duplex Pump Enclosure Bill of Materials	Deleted
Standard Drawings	WW-22-7 Duplex Pump Nameplate Schedules	Deleted
Standard Drawings	WW-22-8 Duplex Pump Electrical Power Schematics 230VAC, 3PH	Deleted

Table of Contents	Section Name	Amendment Description
Standard Drawings	WW-22-9 Duplex Pump Electrical Power Schematics 460VAC, 3PH	Deleted
Standard Drawings	WW-22-10 Duplex Pump Electrical Schematics AC Control Wiring	Deleted
Standard Drawings	WW-22-11 Duplex Pump Electrical Schematics AC Control Wiring	Deleted
Standard Drawings	WW-22-12 Duplex Pump Electrical Schematics DC Control Wiring	Deleted
Standard Drawings	WW-22-13 Duplex Pump Electrical Schematics PLC Digital Inputs	Deleted
Standard Drawings	WW-22-14 Duplex Pump Electrical Schematics PLC Digital Outputs	Deleted
Standard Drawings	WW-22-15 Duplex Pump Electrical Schematics PLC Analog Inputs	Deleted
Standard Drawings	WW-22-16 Duplex Pump Network Communication Diagram	Deleted
Standard Drawings	WW-23 Duplex Pump Control Schematic	Replaced with "This page is intentionally blank."
Standard Drawings	WW-24 Duplex Pump Enclosure	Replaced with "This page is intentionally blank."

Authorization #12 - Amendments Effective November 27, 2022

Table of Contents	Section Name	Amendment Description
Standard Drawings	WA-01-02 Blow Off Valve (Above Ground) Automatic	Deleted

PREFACE

TABLE OF CONTENTS

TABLE OF STANDARD DRAWINGS

CLIABTED 4	CENIEDAL	THEODIAATIO	
CHAPTER 1	GENERAL	INFORMATIO	N

110	Introduction
111	Abbreviations
112	Definitions
113	Approval Process for New Products

CHAPTER 2 DEVELOPMENT COORDINATION

210	Development Coordination
	Part 1 Introduction
	Part 2 Submittal Process
	Part 3 Project Acceptance Documentation (i.e Record Drawings, Surveys GPS Coordinate Data)
	Part 4 Acceptance Documents (Construction Costs, Engineer's Certification Test Reports, Operation and Maintenance Manuals, etc.)
	Part 5 Construction Coordination Meetings
	Part 6 Construction Plan Time Limitation
211	Project Design Documents and Submittals
250	Standard Drawings – Development Coordination
250-A	Request for Restricted Information
250-B	Records Distribution Tracking Form
250-C	Request for Utilities Bond Form
250-D	Developer's Letter of Dedication and Statement of Warranty Form
250-E	Engineer of Record's Letter of Certification Form
250-F	Contractor's Letter of Certification Form
250-G	THIS SECTION IS INTENTIONALLY BLANK
250-H	THIS SECTION IS INTENTIONALLY BLANK
250-I	THIS SECTION IS INTENTIONALLY BLANK
250-J	Request to Connect to Existing Utility Main Form
250-K	Polk County Utilities Easement Form (Corporate)
250-L	Polk County Utilities Easement Form (Individual)

CHAPTER 3 GENERAL REQUIREMENTS

310	General Standards and Specifications
311	Site Preparations, Surface Removal, and Restoration Specifications
312	Excavations, Backfill, Compaction, and Grading Specifications

313 314 315 316 317 318 350 350-A 350-B	Installation of Pipe Specifications Directional Drilling Standards and Specifications Jack and Bore Standards and Specifications Aerial Crossing Standards and Specifications System Connection Specifications Field Testing and Inspection Procedures Standard Drawings – General Requirements Utilities Inspection Report Form Inspector's Overtime Tracking Form
CHAPTER 4	WATER
410 411 412 413 450 450-A 450-B 450-C 450-D 450-E 450-F 450-G 450-H 450-I	Potable Water System Standards and Specifications Raw Water System Standards and Specifications Potable Water Production Facilities Standards Potable Water Production Facility SCADA Specifications Standard Screens (WA-S-01 through WA-S-08) Standard Drawings – Water Testing and Inspection for Acceptance of Water Systems Approved Materials Checklist – Potable Water Water Hydraulic Modeling Standards Approved Meters List Potable Water Main Pressure Test Report Form – PVC & DIP Potable Water Main Pressure Test Report Form – HDPE Potable Water Main Pigging Report Form Fire Hydrant Flow Test Form Potable Water Schedule of Values Form
CHAPTER 5	WASTEWATER
510 511 512 513 514 515 516 517 518 519 550 550-A	Gravity Wastewater System Standards and Specifications Wastewater Force Main Standards Wastewater Lift Station Standards and Specifications Wastewater Pipes, Valves, and Appurtenances Specifications Wastewater System Bypass Specifications Submersible Wastewater Pumps Specifications Wastewater Lift Station Electrical System Specifications SCADA and Control Panel Specifications Wastewater Treatment Facilities Standards Wastewater Treatment Facility SCADA Specifications Standard Screens (WW-S-01 through WW-S-12) Standard Drawings – Wastewater Testing and Inspection for Acceptance of Wastewater System

	550-B	Testing and Inspection for Acceptance of Wastewater Lift Stations
	550-C	Approved Materials Checklist – Wastewater
	550-D	Wastewater Hydraulic Standards
	550-E	Wastewater Force Main Pressure Test Form – PVC & DIP
	550-F	Wastewater Force Main Pressure Test Form – HDPE
	550-G	Wastewater Gravity Main CCTV and Mandrel Inspection Form
	550-H	Wastewater Force Main Pigging Report Form
	550-I	Wastewater Lift Station Start Up Completion Form
	550-J	Wastewater Schedule of Values Form
	550-K	SCADA Panel I/O Listing
~ į	HAPTER 6	RECLAIMED WATER
	IAI ILIK O	RECEATIVE WATER
	610	Reclaimed Water System Standards and Specifications
	611	Reclaimed Water SCADA Specifications
		Standard Screens (RW-S-01 through RW-S-03)
		450-D Refer to Chapter 4, Section 450-D for Approved Meters List
	650	Standard Drawings – Reclaimed Water
	650-A	Testing and Inspection for Acceptance of Reclaimed Water Systems
	650-B	Approved Materials Checklist – Reclaimed Water
	650-C	Reclaimed Water Main Pressure Test Report Form – PVC & DIP
	650-D	Reclaimed Water Main Pressure Test Report Form – HDPE
	650-E	Reclaimed Water Pigging Report Form
	650-F	Reclaimed Water Schedule of Values Form
CH	HAPTER 7	SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)
	710	CCADA Considerations

710 SCADA Specifications

TABLE OF CONTENTS STANDARD DRAWINGS

DEVELOPMENT COORDINATION250		
DC-01	Private Development Project Cover Sheet (Sample of Recommended Format)	
DC-02	Community Investment Project Cover Sheet (Required Format)	
GENERAL REC	QUIREMENTS350	
GR-01	Bedding and Trenching - Type A	
GR-02	Bedding and Trenching - Type B	
GR-03	Subaqueous Crossing (Typical)	
GR-04	Restrained Pipe Table	
GR-05	Thrust Collar	
GR-06	Bore and Jack	
GR-07	Gate Valve and Box (Shallow)	
GR-08	Butterfly Valve and Box (Shallow) (For Storage Tank Isolation Use Only)	
GR-09	Plug Valve (Shallow) (For Wastewater Treatment Facility Use Only)	
GR-10	Typical Valve Box Cover	
GR-11	Valve Box Assembly (Deep)	
GR-12	Valve Collar	
GR-13	Pipe Line Marker (Typical)	
GR-14-1	Pipe Locating Wire	
GR-14-2	Pipe Identification - Potable Water Mains	
GR-14-3	Pipe Identification - Wastewater Force and Gravity Mains	
GR-14-4	Pipe Identification - Reclaimed Water Mains	
GR-14-5	Pipe Identification - Raw Water Mains	
GR-15-1	Automatic Air Release Valve (Above Ground)	
GR-15-2	Automatic Air Release Valve (In Ground)	
GR-16	Minimum Separation Requirements	
GR-17-1	Aerial Crossing and Access Barrier (Typical): Potable Water and Reclaimed Water Mains	
GR-17-2	Sign for Aerial Crossing and Access Barrier: Potable Water and Reclaimed Water Mains	
GR-18	Residential Service Locations (Typical)	
GR-19-1	Single Family Residential Utility Plan (Typical): Potable Water	
GR-19-2	Single Family Residential Utility Plan (Typical): Wastewater	
GR-19-3	Single Family Residential Utility Plan (Typical): Reclaimed Water	
GR-20-1	Potable Water and Reclaimed Water Services (Typical)	
GR-20-2	Standard Rectangular Meter Box Assembly: Potable Water and Reclaimed Water	
GR-21	MJ Tapping Sleeve and Gate Valve Assembly (Typical)	

TABLE OF CONTENTS STANDARD DRAWINGS GR-22 **General Notes** GR-23 THIS PAGE IS INTENTIONALLY BLANK **GR-24** Pig / Swab Launcher Port (Typical) **GR-25** Pig / Swab Receiving Port (Typical) **GR-26** Concrete Arch and Full Encasement Concrete Cradle and Half Encasement **GR-27 GR-28 Deflection of Pressure Mains** GR-29 Bollard (Typical) WATER450 WA-01-1 Blow Off Valve - Standard WA-01-2 THIS PAGE IS INTENTIONALLY BLANK WA-01-3 Blow Off Valve (Above Ground) - Automatic WA-02 Fire Line Double Check Detector Assembly (4 Inches to 12 Inches) WA-03 Fire Hydrant Assembly THIS PAGE IS INTENTIONALLY BLANK WA-04-1 WA-04-2 THIS PAGE IS INTENTIONALLY BLANK **WA-05** Meter and Reduced Pressure Zone Cross Connection Control Assembly (Up to 2 Inches) WA-06 Jumper Connection (Typical) Water System Interconnect - Site Plan WA-07-1 Water System Interconnect – Plan and Section Views WA-07-2 WA-08 Potable Water Irrigation Master Control Assembly (Four Inches and Larger) WA-09-1 Master Meter Assembly – 3 Inch and Larger (Single Cross Connection Control Assembly) WA-10 Hydraulically Operated Control Valve (Pressure Reducing/Sustaining) WASTEWATER550 WW-01-1 Precast Concrete Manhole (Typical) Doghouse Concrete Manhole WW-01-2 Manhole Connection WW-02 WW-03-1 Standard Manhole Frame and Cover Set WW-03-2 Large Manhole Frame and Cover Set WW-04 Manhole in Non-Paved Area Service Lateral (Standard) (Typical) WW-05-1 WW-05-2 Service Lateral (Deep) (Typical) WW-06-1 Force Main to Gravity Sewer Manhole Connection (Typical) WW-06-2 Force Main Manifold Connection (Typical) Grease Interceptor (Typical) WW-07 80-WW Lint / Hair Trap Interceptor (Typical)

WINGS

	WW-09	Lift Station Notes
	WW-10	Lift Station Notes (Continued)
	WW-11	Duplex Lift Station (Typical) - Site Plan
	WW-12-1	Duplex Lift Station - Plan View
	WW-12-2	Duplex Lift Station - Section View
	WW-12-3	Duplex Lift Station - Dimensions and Elevations Table
	WW-12-4	Float Type Level Switch Installation (Typical)
	WW-12-5	Typical Lift Station HDPE Pipe Bracing
	WW-13	Triplex Lift Station (Typical) - Site Plan
	WW-14-1	Triplex Lift Station - Plan View
	WW-14-2	Triplex Lift Station - Section View
	WW-14-3	Triplex Lift Station - Dimensions and Elevations Table
	WW-15	Pipe Support and Gauge/Diaphragm Assembly (Typical)
	WW-16	Chain Link Fence (Typical)
	WW-17-1	Lift Station Wall (Typical) - Section View
	WW-17-2	Cantilever Swing Gate (Typical)
	WW-18	Lift Station Wash Down Assembly (Typical)
	WW-19	THIS PAGE IS INTENTIONALLY BLANK
	WW-20-1	Lift Station Control Panel - Installation
		WW-22 series sheets (Control Panel Details) are available from PCU
	upon request	t. Please request from SCADADept@polk-county.net
	WW-21	THIS PAGE IS INTENTIONALLY BLANK
	WW-23	THIS PAGE IS INTENTIONALLY BLANK
	WW-24	THIS PAGE IS INTENTIONALLY BLANK
	WW-25	THIS PAGE IS INTENTIONALLY BLANK
	WW-26-1	Lift Station Grounding (Typical)
	WW-26-2	Lift Station Cover and Door Grounding (Typical)
	WW-26-3	Lift Station Ground Test Well
	WW-26-4	Lift Station Fence Post Grounding (Typical)
	WW-27	THIS PAGE IS INTENTIONALLY BLANK
RE	CLAIMED W	ATER650
	RW-01	Reclaimed Water Signage ("Do Not Drink Water")
	RW-02	Reclaimed Water Signage ("Do Not Drink / Do Not Swim")
	RW-03	Reclaimed Water Master Meter Assembly