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**GENERAL INFORMATION (CHAPTER 1)**

**SUMMARY OF CHANGES**

**Authorization #2 - Amendments Effective December 15, 2012**

<b>Chapter One (1):</b>	<b>Section Name</b>	<b>Amendment Description</b>
Introduction:	Part 8 - Polk County Utilities Web Access	Replaced obsolete Utilities website link with correct url

**Introduction**

**PART 1 - Authority**

This MANUAL has been approved by the COUNTY and accepted as an official document of the COUNTY. The MANUAL shall be enforced and no part thereof shall be altered without following the procedure contained within the Section entitled "Reference Manual Revision Procedure" as established within the Polk County Utilities Code.

**PART 2 - JURISDICTION**

This MANUAL shall apply to:

- A. All privately constructed development projects containing water, wastewater, and reclaimed water utility systems that will be dedicated to the COUNTY for ownership, operation, and maintenance;
- B. All privately constructed development projects subject to the jurisdiction of the LAND DEVELOPMENT CODE that are proposed to contain water, wastewater, and/or reclaimed water utility systems which are not proposed to be part of a municipality's water and wastewater utility system; and
- C. All Polk County Utilities (PCU) Community Investment Program projects, including rehabilitation and replacement projects.

**PART 3 - PURPOSE**

- A. This Utilities Standards and Specifications Manual (MANUAL) establishes minimum design standards, construction specifications, submittal requirements, and approval or acceptance procedures for potable water, wastewater, and reclaimed water systems.
- B. It is not intended that this MANUAL address every situation that may arise. The application of engineering/surveying principles, construction techniques, and judgment, combined with information contained in this MANUAL are necessary to complete PCU projects and protect the safety, health, and welfare of the public. The approval of plans by PCU shall not relieve the ENGINEER or DEVELOPER from required compliance with the provisions of this MANUAL, unless a specific written approval is received from PCU. All appeals shall be processed in accordance with the Section entitled "Appeal Process" as specified in the Polk County Utilities Code.
- C. This MANUAL shall be updated as required in accordance with the Section entitled "Reference Manual Revision Procedure" as established within the Polk County Utilities Code to address revisions and improvements, such as design criteria, construction techniques, materials, standard drawings, and

**Introduction**

updated procedures for submittals. PCU shall utilize a web page, accessed through the PCU website, for posting the latest MANUAL revisions.

**PART 4 - ORGANIZATION**

This MANUAL is presented in six chapters. A summary of the chapters is provided below to facilitate the use of this MANUAL.

- A. Chapter 1 – General Information
- B. Chapter 2 – Development Coordination
- C. Chapter 3 – General Requirements
- D. **Chapter 4 – Water**
- E. **Chapter 5 – Wastewater**
- F. **Chapter 6 – Reclaimed Water**

**PART 5 - CLARIFICATION IN THE USE OF CHAPTERS 2, 3, 4, 5, AND 6**

- A. Chapter 2 "Development Coordination", Chapter 3 "General Requirements", Chapter 4 "Water", Chapter 5 "Wastewater", and Chapter 6 "Reclaimed Water" are provided as minimum criteria to assist a consulting ENGINEER in the development of the design documents. This MANUAL shall not be used as a substitute for actual design.
- B. The applicable STANDARD DRAWINGS shall be used as presented. PCU may accept modifications on a limited case-by-case basis only if a modification is deemed by PCU to be of a benefit to PCU.

**PART 6 - INFORMATION PROVIDED BY PCU**

All information provided by PCU, at any time, shall not be used for the design or construction of any building, development, or other improvements without field verification, including the use of ground penetrating radar and/or soft dig verification methods, by the DEVELOPER, the ENGINEER, or the CONTRACTOR. The recipient's reliance, at any time, upon maps, data, or other record information provided by PCU shall be solely at his or her risk. PCU shall have no actual or implied liability for incorrect drawings, record drawings, or other materials that the recipient reviews and/or utilizes in preparation of making business or personal decisions.

**Introduction**

**PART 7 - INTERPRETATION OF THE MANUAL**

The PCU interpretation of the MANUAL shall be binding and controlling for any portion of the MANUAL, differences between Sections, or a controlling supplemental specification such as federal, state, or COUNTY regulations.

**PART 8 - POLK COUNTY UTILITIES WEB ACCESS**

- A. The PCU web page will be accessed through the County's web site at:

<http://www.polk-county.net/utilities.aspx>.

- B. PCU will make this MANUAL available for download from the web page and will provide copies of this MANUAL in digital form upon request. Questions regarding this MANUAL should be emailed to the Utilities Code Committee at:

[utilitiescodecommittee@polk-county.net](mailto:utilitiescodecommittee@polk-county.net).

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**Abbreviations**

The following is a listing of primary abbreviations used in this MANUAL.

**A**

AASHTO	American Association of State Highway and Transportation Officials
AC	asbestos cement pipe
AC	alternating current
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AMCA	Air Conditioning and Mechanical Contractors Association
amp	ampere
ANSI	American National Standards Institute Inc
APWA	American Public Works Association
ARV	air release valve
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing and Materials
AWS	American Welding Society
AWWA	American Water Works Association

**B**

BLDG	building
BM	benchmark
BT	buried telephone cable

**C**

CCTV	closed circuit television
CD-R	compact disc-read only
cfm	cubic feet per minute
CGB	circuit group blocking message
CIP	cast iron pipe or Community Investment Program
CIPP	cured in place pipe
CLF	chain link fence
CMP	corrugated metal pipe
CMU	concrete masonry unit
CO	clean out
CONC	concrete
CPU	central processing unit
CSA	Canada Standards Association
CTU	central telemetry unit

**D**

db	decibels
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**Abbreviations**

DC	direct current
DCCA	Directional Crossing Contractors Association
deg	degree
dia	diameter
DIP	ductile iron pipe
DIPRA	Ductile Iron Pipe Research Association
dpi	dots per inch
DR	Dimension Ratio
DRI	Development of Regional Impact
DVD	digital video disc/digital versatile disc
DW	driveway
dwg	AutoCAD file format
dxf	data exchange file

**E**

EOP	edge of pavement
EPA	United States Environmental Protection Agency
EPROM	erasable programmable read-only memory
ERC	Equivalent Residential Connection
ERU	Equivalent Residential Unit

**F**

FAC	Florida Administrative Code
FCC	Federal Communications Commission
FCCCHR	Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California
FDEP	Florida Department of Environmental Protection
FDOH	Florida Department of Health / Polk County Health Department
FDOT	Florida Department of Transportation
FH	fire hydrant
FIFO	"first-in", "first-out" memory or field inspection field office
FIG	figure
FIP	female iron pipe
FLG	flange
FM	forcemain
FOC	fiber optic cable
fps	feet per second
FS	Florida Statute
ft	foot
ft-lb	foot-pound

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**Abbreviations**

**G**

GIS	Geographic Information System
gpd	gallons per day
gpm	gallons per minute
GPS	Global Positioning System
GSP	galvanized steel pipe

**H**

HARN	Horizontal Accuracy Reference Network
HDD	horizontal directional drilling
HDPE	high-density polyethylene
HMI	human machine interface
HORIZ	horizontal

**I**

ID	identification number
ID	inside diameter
IEEE	Institute of Electrical and Electronics Engineers
I/O	input/output
IPS	iron pipe size
ISA	Instrument Society of America
ISO	International Standards Organization

**K**

Kv	kilovolt
KVA	kilovolt-ampere
Kw	kilowatts

**L**

LCD	liquid crystal display
LF	linear feet
LPA	Planning Commission (Local Planning Agency)

**M**

ma	milliamps
MAX	maximum
MGD	millions gallons per day
MH	manhole
MHF&C	manhole frame and cover
MHz	megahertz

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**Abbreviations**

mil	millionths
MJ	mechanical joint
mpd	minutes per day
MPEG	digital video file format
ms	millisecond
MSDS	Material Safety Data Sheets

**N**

NACE	National Association of Corrosion Engineers
NASSCO	National Association of Sewer Service Companies
NCPI	National Clay Pipe Institute
NEC	National Electrical Code
NUCA	National Underground Contractors Association
NEMA	National Electrical Manufacturers Association
NETA	International Electrical Testing Association
NFPA	National Fire Protection Association
NPT	National Pipe Thread
NSF	National Sanitation Test Laboratory Association

**O**

OC	on center
OD	outside diameter
ODBC	open database connectivity
OS&Y	outside screw and yoke
OSHA	Federal Occupational Safety and Health Administration

**P**

PACP	Pipeline Assessment Certification Program
PCCP	pre-stressed concrete cylinder pipe
PD	Planned Development
PDF	Adobe Acrobat file format
PL	property line
PLC	programmable logical controller
ppb	parts per billion
ppm	parts per million
PRV	pressure regulating or reducing valve
psf	pounds per square foot
psi	pounds per square inch
PSP	Preliminary Subdivision Plan
PVC	polyvinylchloride pipe



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**Abbreviations**

**R**

RAM	random access memory
REQ'D	required
RJ	restrained joint
ROW	right-of-way
RTK	real-time kinematic
RTD	real-time differential
RTU	radio telemetry unit

**S**

SCADA	Supervisory Control and Data Acquisition
SSO	sanitary sewer overflow
SQ	square
SS	stainless steel

**T**

TBM	temporary benchmark
TCP/IP	transmission control protocol/internet protocol
THW	thermoplastic heat and water-resistant insulated wire (UL)
THWN	thermoplastic heat and water-resistant nylon coated wire (UL)
tif	tagged image file format
TVSS	transient voltage surge suppressor
TYP	typical

**U**

UL	Underwriters Laboratories Inc
USGS	United States Geological Survey
UV	ultraviolet light

**V**

VAC	volt-alternating current
VCP	vitrified clay pipe
VDC	volt-direct current
VFD	variable frequency drive

**W**

WM	water main
WSF	wood stockade fence
WWF	welded wire fabric

**Abbreviations**

**Y**

yd            yard

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**Definitions**

Except where specific definitions are used within a specific MANUAL section, the following terms, phrases, words and their derivation shall have the meaning given herein when consistent with the context in which they are used. Words used in the present tense include the future tense, words in the plural number include the singular number and words in the singular number include the plural number. **The word "shall" is mandatory, and the word "may" is permissive.**

**AASHTO:** American Association of State Highway and Transportation Officials. Any reference to AASHTO standards shall mean latest edition.

**ANSI:** American National Standards Institute. Any reference to ANSI standards shall mean latest edition.

**ARCHITECT:** Architect registered with the State of Florida Department of Business and Professional Regulation to provide professional architectural services.

**ASTM:** American Society for Testing Materials. Any reference to ASTM standards shall mean latest edition.

**AS-BUILT SURVEY:** Field measurements of vertical and horizontal dimensions of constructed improvements certified by a SURVEYOR so that the constructed facilities can be delineated in such a way that the location of the construction may be compared with the construction PLANS.

**AWWA:** American Water Works Association. Any reference to AWWA Standards shall mean latest edition.

**BOUNDARY AND TOPOGRAPHICAL SURVEY:** Boundary and topographical survey, map and report certified by a SURVEYOR that meets the requirements of Chapter 61G17-6 'Minimum Technical Standards', FAC.

**CIP:** PCU Community Investment Program projects.

**COUNTY:** Polk County Board of County Commissioners, Polk County, Florida.

**COUNTY SURVEYOR:** The County staff member, licensed by the State of Florida as a professional surveyor and mapper pursuant to Chapter 472, F.S., who is responsible for reviewing surveys within the County.

**CONTRACTOR:** Person, firm, or corporation with whom the contract for work has been made for the OWNER, the DEVELOPER or PCU.

**CROSS CONNECTION CONTROL ASSEMBLY:** An assembly that has been manufactured in full conformance with AWWA Standards and meets the laboratory and

**Definitions**

field performance specifications of the FCCCHR. Cross Connection Control Assemblies shall also comply with the requirements of Rule 62-555 F.A.C.

**COMMUNITY INVESTMENT PLAN (CIP):** County documents that identify improvements to the PCU Water Systems, Wastewater Systems, and Reclaimed Water Systems that will be funded and constructed as identified within the current 5 year Master Plan for each PCU Regional Utility Service Area's water, wastewater, and reclaimed water system.

**DEVELOPER:** Person, firm, or corporation engaged in developing or improving real estate for use or occupancy.

**DEVELOPMENT:** Any improvement of real estate for use or occupancy.

**DIGITAL UTILITY PLAN:** For approvable construction projects, a digital utility plan of the affected construction area shall be submitted in encompassing digital file(s) for importing into PCU's GIS. The digital file includes existing, new or altered structures in the work area, geodetic control and survey data.

**DIRECTOR:** The person who is responsible for the day to day administration and management of Polk County Utilities.

**ELEVATIONS:** Vertical elevations based on the North American Vertical Datum 1988 (NAVD 88).

**ENGINEER:** An individual currently licensed to practice engineering in the State of Florida.

**EQUIVALENT RESIDENTIAL CONNECTION (ERC):** The water demand and sewage generation value (gpd) for a standard detached single family dwelling.

**FAC:** Florida Administrative Code.

**FDEP:** Florida Department of Environmental Protection.

**FDOT:** Florida Department of Transportation.

**FIRE DEPARTMENT:** The Polk County Public Safety Department.

**FIRE FLOW:** The amount of water measured in gallons per minute at a minimum residual pressure of 20 p.s.i that is required to provide adequate fire suppression in accordance with standards established by the FIRE DEPARTMENT.

**FS:** The Statutes of the State of Florida.

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**Definitions**

**INSPECTOR:** A County employee or consultant that is qualified and authorized to perform inspections on behalf of PCU.

**LAND DEVELOPMENT CODE:** The Polk County Land Development Code.

**MANUAL:** The Polk County Utilities Standards and Specifications Manual.

**MASTER METER ASSEMBLY:** An above ground installation containing a dual body meter assembly, a certified cross connection control assembly, concrete pad, SCADA, piping, valves, and related components.

**MASTER PLAN:** For projects to be constructed in multiple phases, a master plan for water, wastewater and/or reclaimed water is required. The master plan consists of a utility system layout superimposed on a topographic map, calculations for potable water demand, reclaimed water demand and wastewater flow, as well as a pipe network analysis for flow and pressure distribution.

**NEMA:** National Electrical Manufacturers Association. Any reference to NEMA Standards shall be the latest edition.

**NORMAL WORKING DAY:** Monday through Friday, excluding COUNTY holidays.

**NORMAL WORKING HOURS:** Hours are between the hours of 7:30 a.m. to 6:30 p.m. of a NORMAL WORKING DAY.

**NSF:** National Sanitation Test Laboratory Foundation. Any reference to NSF Standards shall be the latest edition.

**OWNER:** Person, firm, corporation, or governmental unit holding right of possession of the real estate upon which construction is to take place.

**POLK COUNTY UTILITIES (PCU):** The Polk County entity which has the responsibility of administering, operating, and maintaining the PCU Utility Systems.

**PLANS:** Drawings prepared by an ENGINEER or ARCHITECT to show the proposed and, when the County approved review process is completed, the PCU approved improvements that are to be constructed.

**PRIVATE SYSTEMS:** Utility systems that are not to be owned, operated, or maintained by PCU.

**PUBLIC WORKS:** Infrastructure Management Department of the Polk County Board of County Commissioners, Polk County, Florida.

**Definitions**

**RECLAIMED WATER REGULATIONS:** In accordance with the Reference Manual 6(D), Reclaimed Water Policy Manual”, Polk County Utilities Code.

**RECLAIMED WATER SYSTEM:** Reclaimed water transmission and distribution piping, pump stations, augmentation wells, fittings, valves, services, meters and miscellaneous related appurtenances.

**RECORD DRAWINGS:** Plans certificated by the ENGINEER that accurately depict the horizontal and vertical locations of all installed utility system components involved in the completed WORK.

**REFERENCE MANUAL 6(A):** The Polk County Utilities Administration Manual, adopted by reference herein.

**REFERENCE MANUAL 6(B):** This Manual, the Polk County Utilities Standards and Specifications Manual, adopted by reference herein.

**REFERENCE MANUAL 6(C):** The Polk County Utilities Cross-Connection Control Policy Manual, adopted by reference herein.

**REFERENCE MANUAL 6(D):** The Polk County Utilities Reclaimed Water Policy Manual, adopted by reference herein.

**REFERENCE MANUAL 6(E):** The Polk County Industrial Wastewater Pre-Treatment Policy Manual, adopted by reference herein.

**REFERENCE MANUAL 6(F):** The Polk County Utilities Water Conservation Policy Manual, adopted by reference herein.

**REFERENCE MANUAL 6(G):** The Polk County Utilities Fats, Oils, and Grease Policy Manual, adopted by reference herein.

**REGIONAL UTILITY SERVICE AREA (RUSA):** An established area for the purpose of planning and the provision of utility service to existing and future PCU customers.

**REGISTERED HOLDERS:** Users of the MANUAL that have provided current email information to the STANDARDS COMMITTEE so they may be notified of pending revisions to the MANUAL.

**UTILITY PERMIT:** Regulations, as established by the Polk County Board of County Commissioners, for the governance of the County’s public rights-of-way and easements.

**Definitions**

**SAMPLES:** Physical examples of materials, equipment, or workmanship that are representative of some portion of the WORK and which establish the standards by which such portion of the WORK will be judged.

**SHOP DRAWINGS:** All drawings, diagrams, illustrations, schedules, and other data or information, which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the WORK.

**SPECIFIC PURPOSE SURVEY:** Survey, map, and report certified by a SURVEYOR of an easement with water, wastewater, and/or reclaimed water pipes maintained by PCU and meets the requirements of Chapter 61G17-6 'Minimum Technical Standards', FAC. The report shall describe the locations where the pipe centerline was not constructed within two feet of the centerline of the easement.

**STANDARD DRAWINGS:** Detailed drawings contained in this MANUAL related to water, wastewater and reclaimed water system materials and installation.

**STANDARD FDOT SPECIFICATIONS:** State of Florida Department of Transportation, Standard Specification for Road and Bridge Construction.

**SUBCONTRACTOR:** An individual or entity having a direct contract with CONTRACTOR or with any other subcontractor for the performance of a part of the WORK.

**SURVEYOR:** An individual currently licensed to practice surveying and mapping in the State of Florida.

**TRAFFIC CONTROL AND SAFE PRACTICES MANUAL:** Florida Department of Transportation Manual on Traffic Control and Safe Practices for Street and Highway Construction, Maintenance and Utility Operation and the Manual of Uniform Traffic Control Devices (MUTCD).

**UTILITIES CODE COMMITTEE:** Comprised of the Utilities Capital Projects Manager, Utilities Customer Services Manager, Utilities Operations and Maintenance Manager, and one representative each from the County Engineer and County Purchasing Sections. The Utilities Director shall not serve on the Utilities Code Committee.

**UTILITY ACCOMMODATION GUIDE:** State of Florida Department of Transportation Utility Accommodation Guide, latest edition.

**UTILITY ASSET:** Any component of a potable water, reclaimed water, or wastewater system, including, but not limited to, permits, easements, and fee simple properties.

**Definitions**

**WASTEWATER SYSTEM:** Wastewater transmission pipes including gravity sewers and force mains, wastewater pump stations, fittings, valves, service laterals and miscellaneous related appurtenances.

**WATER SYSTEM:** Water transmission and distribution pipes, water pump stations, fittings, valves, hydrants, services, meters and miscellaneous related appurtenances.

**WORK:** Labor, materials, equipment, supplies, services and other items necessary for the execution, completion and fulfillment of the approved PLANS.



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**Approval Process for New Products**

**PART 1 - GENERAL**

- A. The UTILITIES CODE COMMITTEE shall evaluate new and existing products and materials for efficient and economical utilization. The UTILITIES CODE COMMITTEE is charged with the development of a fair and reasonable methodology to systematically evaluate utility products for use through research and/or field evaluation.
- B. It is the intent of PCU to review and update each "Approved Materials Checklist" as appropriate to ensure efficient operation of the services and facilities under the jurisdiction of the MANUAL. Products in use are subject to ongoing consideration and evaluation by the UTILITIES CODE COMMITTEE. When changes, deletions, or additions become necessary and are approved, each "Approved Materials Checklist" will be revised. Questions concerning each "Approved Materials Checklist" may be addressed to the UTILITIES CODE COMMITTEE web site.
- C. The approval process for adding materials to each "Approved Materials Checklist" requires the product and equipment manufacturers to submit a written request to be considered on the list. The UTILITIES CODE COMMITTEE shall evaluate new and existing products for efficient and economical utilization within the PCU system. PCU may approve a demonstration project with specific conditions and timelines and may request the supplier provide the product at no charge to PCU for testing.
- D. Issues regarding accepted products shall be submitted to the UTILITIES CODE COMMITTEE for review. Such review may lead to a recommendation to rescind approval. The UTILITIES CODE COMMITTEE shall inform the supplier/manufacturer of the reasons for removal from each "Approved Materials Checklist".

**PART 2 - SUBMITTALS**

- A. General:

Product and equipment manufacturers shall submit a request for consideration to the MANUAL web site. If the submittal is acceptable, the UTILITIES CODE COMMITTEE will evaluate the product. Products may be requested for testing or field evaluation. Following review of the submittal, the UTILITIES CODE COMMITTEE may request a presentation by the manufacturer at a regularly scheduled committee meeting to demonstrate the product or provide additional information. Procedures for testing or evaluation shall be as agreed upon between the supplier and the UTILITIES CODE COMMITTEE. Results will become a part of the product file and will be made available to the supplier upon request. PCU will periodically

**Approval Process for New Products**

update a database of all testing locations, time of test, and results. From this information, the UTILITIES CODE COMMITTEE will recommend approval or denial of the product(s). A majority vote by the UTILITIES CODE COMMITTEE is required to accept any new product. The UTILITIES CODE COMMITTEE will advise the supplier of the decision regarding the product. The newly accepted product will be added to the applicable "Approved Materials Checklist". As the "Approved Materials Checklists" are part of the Utilities Standards and Specifications Manual, this Manual shall be revised in accordance with the Reference Manual Revision Procedure as specified in the Enacting Ordinance.

**B. Submittal Requirements:**

1. Provide a product description, the technical specifications and catalog information including applicable part number or series number that approval is requested on.
2. List all applicable product standards (AWWA, ASTM, ANSI, NFPA and others) and related manufacturer's certifications.
3. Test results showing compliance with applicable standards, including independent laboratory test results, if necessary.
4. Provide the manufacturer's installation procedures for the particular product.
5. Provide the product availability, delivery time and manufacturer's location and local representative availability.
6. Maintenance requirements, special equipment and procedures and recommended maintenance schedules.
7. Product references (municipal or public users) shall include user's name, address and telephone number, product application and number of years in use, and name and telephone number of a contact person having knowledge of the particular usage.
8. Provide the material safety data sheet (MSDS), if applicable.
9. Provide recent product revisions or improvements.
10. Explanation of how the product benefits PCU in terms of prolonged service life, reduced maintenance, reduced life-cycle cost and other relevant aspects.