

January 18, 2012

To Whom It May Concern:

The Polk County UTILITIES CODE COMMITTEE is charged with updating the seven REFERENCE MANUALS associated with Ordinance 10-081 (AKA: Utilities Code). In accordance with Section 11: Utilities Code Committee and Section 12: Reference Manual Revision Procedure, the UTILITIES CODE COMMITTEE recommends approval of revisions to portions of the following reference manuals:

- Administration Manual (6A)
 - **2.2: Locations and Contact Information**
 - **3.4.4: Meter Field Test**
 - **3.6.1 Walk-in Payments**
 - **3.6.2 Drop Box Payments**
 - **4.1.4 Late Fees**
 - **Appendix A-100, 17) Wastewater Pretreatment...**

- Standards and Specifications Manual (6B)
 - Chapter Three (3): General Requirements
 - **Standard Drawing GR-14-5**
 - **Standard Drawing GR-15-2**

 - Chapter Four (4): Potable Water
 - **Section 411: Raw Water Main Design Standards...**
 - **Part 5 – Construction**
 - **Part 7 – Execution**
 - **Section 450-B: Approved Materials Checklist**
 - **Section 450-E: Water Pressure Test Form**
 - **Standard Drawing WA-06**

 - Chapter Five (5): Wastewater
 - **Section 510: Gravity Wastewater System Standards**
 - **Part 5 – Manholes**
 - **Section 550-C: Approved Materials Checklist**
 - **Section 550-E: Wastewater Pressure Test Form**

 - Chapter Six (6): Reclaimed Water
 - **Section 650-B: Approved Materials Checklist**
 - **Section 650-C: Reclaimed Water Pressure Test Form**

- Cross Connection Control Policy Manual (6C)
 - **Appendix A-100: Approved Cross Connection Control Assemblies**

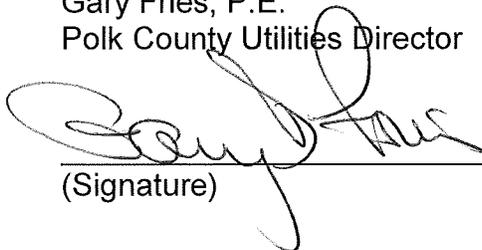
- Water Conservation Manual (6F)
 - **Section 1.4.5: System Deficiencies**
 - **Section 1.4.10: Institutional and Political Factors**
 - **Section 2.2.5: Increased Code Enforcement**
 - **Section 2.2.6: Leak Detection and Meter Testing/Replacement**
 - **Appendix A-100: Reference List**

Details concerning each respectively edited Manual, Section, Chapter, and Appendix are attached herewith for reference.

Pursuant to Ordinance 10-081, all of the above listed and subsequently described recommendations are hereby approved as noted. In accordance with Section 12 of the aforementioned Ordinance, the Utilities Director is authorized to approve these updates as recommended by the Utilities Code Committee. The effective date of these revisions shall be 30 calendar days from the date of this approval and shall supersede the prior content and detail drawings in the respective manuals. Similarly all approved revisions will be incorporated into the master set of Utilities Code Documents and Manuals in a clean form without markups within 30 calendar days from the date of this approval.

Each REFERENCE MANUAL that has been revised shall be formally presented to the BoCC and adopted by separate resolution before calendar year end of 2012.

Gary Fries, P.E.
Polk County Utilities Director



(Signature)



(Date)

- **Administration Manual (6A)**
 - **2.2: Locations and Contact Information**
 - **3.4.4: Meter Field Test**
 - **3.6.1 Walk-in Payments**
 - **3.6.2 Drop Box Payments**
 - **4.1.4 Late Fees**
 - **Appendix A-100, 17) Wastewater Pretreatment...**

UTILITIES ADMINISTRATION MANUAL

December 2010

STANDARDS: the design standards contained in the Polk County Utilities Standards and Specifications Manual.

SURVEYOR: an individual currently licensed to practice surveying in the State of Florida.

UTILITIES CUSTOMER SERVICES: the Utilities Customer Services entity of Polk County Utilities.

UTILITY SERVICE: the provision of potable water, wastewater, and/or reclaimed water service to a customer.

UTILITY SYSTEM: potable water, reclaimed water, and wastewater transmission mains, distribution mains, pipes, fittings, valves, hydrants, services, meters, pumps, pump stations, production facilities, treatment facilities, and miscellaneous related appurtenances.

WASTEWATER SYSTEM: the structures, equipment, processes, land, and appurtenances thereto, required to operate and maintain a system to collect, convey, and treat wastewater and dispose of the effluent and sludge. Wastewater systems do not include storm water facilities.

WORK: the labor, materials, equipment, supplies, services, and other items necessary for the execution, and completion of the utility system.

2.0 BUSINESS OFFICES

2.1 Establishment

PCU shall operate a main business office and may add, move, or close satellite business offices for the convenience of customers or any sound business reason. Changes to business office locations shall be approved by the Utilities Director and the County Manager's Office. A virtual office may be maintained for the convenience of customers.

2.2 Locations and Contact Information

MAIN OFFICE

Utilities Administration Building
1011 Jim Keene Boulevard, CR 540
Winter Haven, Florida 33880
Local Calls: (863) 298-4100
Toll Free Calls: (800) 301-6039
utilities@polk-county.net

VIRTUAL OFFICE

Web Page: http://www.polk-county.net/subpage.aspx?menu_id=252&nav=svc&id=12442

Deleted: S

Deleted: http://www.polk-county.net/county_offices/utilities/accounts.aspx

UTILITIES ADMINISTRATION MANUAL

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To use, select: Click [Here to Pay Your Polk County Utility Bill](#).

Deleted: ¶

Deleted: on Utility Payments and then click on

Deleted: Accounts

Or to use the Interactive Voice Response Phone System:

Dial (863) 298-4100

2.3 Hours of Operation

Main Office

8:00 a.m. – 4:30 p.m., Monday – Friday
Excluding Board of County Commissioners
Scheduled Holidays

Virtual Office

24 hours a day
7 days a week

2.4 Service Capabilities

SERVICE AVAILABLE	MAIN OFFICE	SATELLITE OFFICE	VIRTUAL OFFICE
Talk by phone to a Customer Service Representative	YES	As Designated	NO
Talk in Person to a Customer Service Representative	YES	As Designated	NO
Open a new Account or Establish a new service	YES	As Designated	NO
Close or make changes to your account	YES	As Designated	NO
Obtain Account Information	YES	As Designated	YES
Make a Credit or Debit Card Payment	YES	As Designated	YES

3.0 BUSINESS PRACTICES

3.1 Obtaining Service

All services and laterals plus their extensions shall be installed perpendicular from the point of connection on the corresponding PCU main to the Customer's desired point of service. The Customer shall be financially responsible for all costs to design, permit, and install any extension of a PCU main that is necessary to comply with the above requirement. The main size shall be in accordance with PCU's minimum main size

premise visit charge. A premise visit charge will be waived if the reading is found to be incorrect after verification.

3.4.4 Meter Field Test

At the customer's request, PCU will provide an onsite meter accuracy test for meters that are over two calendar years old. The meter must test within a 97 – 103% accuracy range to be deemed accurate.

Should any meter fail the standard accuracy test, no testing charge will be assessed, and adjustments will be made to billing as necessary.

Deleted: over two calendar years old

If the meter is deemed accurate due to the test results, the customer will be assessed a meter test charge.

All new water meters are supplied by the manufacturer and are certified to meet accuracy standards. Therefore, if a request for an accuracy test is made and the meter is found to be accurate, a meter test charge will be assessed.

Deleted: for equipment less than two calendar years old

3.4.5 Meter Tampering

Any case of tampering with a meter installation, cutting locks or straps on services that have been terminated or disconnected for nonpayment, interference with the proper working of service, theft of service by any person on customer's premises, or any evidence of the same will result in the account holder being assessed the minimum tampering charge for the first occurrence, in accordance with Section 125.99 of the Florida Statutes, which provides for prosecution of violations of County ordinances. Each conviction of a tampering violation is punishable by up to a \$500 fine and 60 calendar days in the County jail. PCU may also fine customers for tampering in accordance with a separate BOCC approved resolution. As this is a progressive charge based on number of offences, charges will be levied against each person or organization found tampering, not each service location.

In addition to the tampering charges, the customer will pay the reconnection charges, replacement costs of damaged parts and/or equipment, and the PCU estimated cost of water and/or wastewater usage not recorded, based on the current rates.

When a meter has been removed for tampering and a new customer applies for service, the appropriate charges for installation of a meter will be assessed.

Section 812.14 of the Florida Statutes, as may be revised from time to time, further provides for prosecution of any person(s) who willfully alter, tamper with, knowingly make any connection with, use or receive the benefit from, etc., a public utility service.

3.6 Customer Payment Options

3.6.1 Walk-In Payments

Customer payments are accepted at our main office and other County approved payment locations Monday through Friday, during normal business hours. Payments are accepted in cash, check, money order, or credit card form. PCU accepts VISA, MasterCard, and American Express debit and credit cards.

Deleted: satellite offices

3.6.2 Drop Box Payments

A drop box is located at our main office for customer convenience which accepts checks and money orders. Daily pick ups will occur at 8:00 a.m. each business day and will be posted that same day. Payments received after 8:00 a.m. will be applied the next business day.

Deleted: and each satellite office

3.6.3 Payments by Automated Bank Draft

PCU offers customers the ability to pay bills by automatic bank draft. Applications for this service can be obtained at PCU offices, by fax, or e-mail. When a completed application is received, PCU will work directly with the bank to set up the monthly automatic bank draft, and advise the customer on the utility billing through monthly statements. The statement will notify the customer of the amount of their bill, the amount to be deducted from the bank account bank account (total amount due), and the date payment will be deducted from the bank account (due date). The bank will also advise their customer through the monthly bank statement of all bank draft payments.

3.6.4 Interactive Voice Response System (IVR)

PCU offers 24-hour telephone account access to customers. By dialing into the Interactive Voice Response System, customers may access their account information, make credit card payments, and obtain other pertinent information.

3.6.5 Internet Account Access

PCU offers customer Internet account access to their accounts. By requesting a pin number by e-mail and logging onto the website, customers may access their accounts, make credit card payments, and obtain other pertinent information.

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Any non-residential monthly wastewater charge that is based on metered water service will be considered for a wastewater credit adjustment due to a pool fill or other use in which wastewater is not produced once per 12 calendar month period. Documentation to support the customer's request for adjustment request should include a letter explaining the request and documentation of the size of the pool.

4.1.3 Back Charge

Adjustments for beneficial usage of services and flow will be applied when service has been rendered but not billed. Charges will be calculated at the rate in effect at the time the service was rendered.

Adjustments for over billing errors are limited to 12 calendar months of correction. All other adjustments must be approved by the BOCC.

4.1.4 Late Fees

Upon customer request, one late charge per 12 calendar month period may be waived on an account as a courtesy. Accounts with an overall general bad credit history may be denied this courtesy.

Deleted: by the DIRECTOR
Deleted: by the DIRECTOR

4.1.4 Liens and Remedies for Non-Payment of Service

Subject to the provisions of F.S. 125.485, if the fees, rates or charges for the services and facilities of the PCU water, wastewater and reclaimed water systems shall not be paid as and when due, and shall be in default for 30 days or more, then the unpaid balance thereof, together with attorneys' fees and costs, may be recovered by the COUNTY in a civil action, by recording of a Notice of Lien, by referring the delinquent account to a collection agency, or a combination thereof. In the event the delinquent account holder is the owner of the property to which utility service was provided, a Notice of Lien, in such form as the Board of County Commissioners shall determine appropriate, may be filed in the office of the Clerk of the Circuit Court of Polk County, Florida and shall be recorded as other liens are recorded. Any such lien, upon recording, shall be constructive notice of such lien and may be foreclosed or otherwise enforced by the COUNTY by action or suit in equity. Any lien provided for in this section shall accrue interest at the statutory rate, as provided for in F.S. 687.01 and F.S. 55.03 as amended from time to time, from the date of recording. Such interest as provided for in this Section shall also constitute a lien against the property assessed of equal dignity to that of the underlying lien.

4.2 Connection Charges

4.2.1 Water and wastewater connection charges, as revised from time to time by a separate Resolution adopted by the BOCC and made part of the "Utilities Administration Manual", shall be imposed for each structure that requires an individual Building Permit and/or Certificate of Occupancy to be issued by the Building Official, regardless of ownership unless exempted by State or Federal statutes. All other connections to the PCU system shall also be subject to

UTILITIES ADMINISTRATION MANUAL

APPENDIX A-100

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- 9) Meter Installation Charge
 - 3/4-inch Meter.....\$450.00
 - 1-inch Meter.....\$550.00
 - 1-1/2-inch Meter\$900.00
 - 2-inch Meter.....\$1,415.00
 - Larger than 2-inch MeterActual Cost

- 10) Temporary Meter Installation Charge
 - 2-inch Meter on Hydrant.....\$105.00
 - Installation Requiring Line Tap.....\$195.00

- 11) Meter Exchange Charge (for Size Change)
 - 3/4-inch Meter.....\$450.00
 - 1-inch Meter.....\$550.00
 - 1-1/2-inch Meter\$900.00
 - 2-inch Meter.....\$1,415.00
 - Larger than 2-inch MeterActual Cost

- 12) Meter Test Charge
 - 3/4-inch Meter.....\$90.00
 - Larger than 2-inch MeterActual Cost

- 13) Penalty for Meter Tampering/Theft of Service \$100.00 up to \$1,000.00
 plus damage repair and replacement costs
 - 1st Infraction \$100.00
 - 2nd Infraction \$500.00
 - 3rd Infraction \$1,000.00

- 14) Penalty for Obscured Meter\$60.00

- 15) Penalty for Connection to Other Potable Water Supply System\$500.00

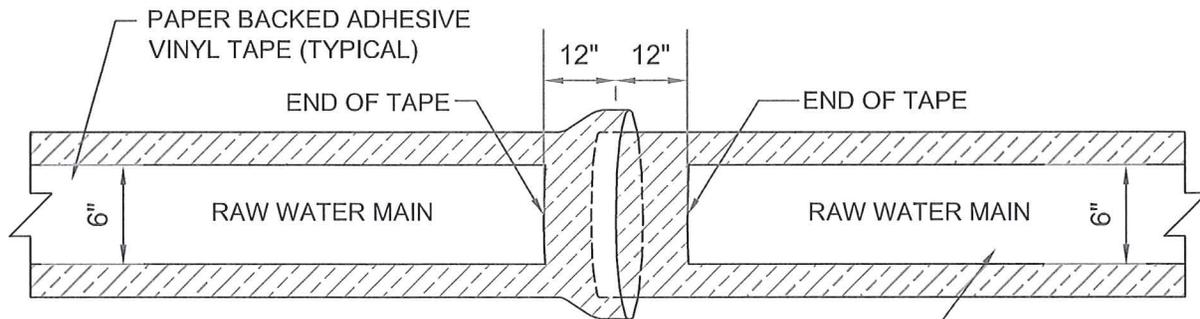
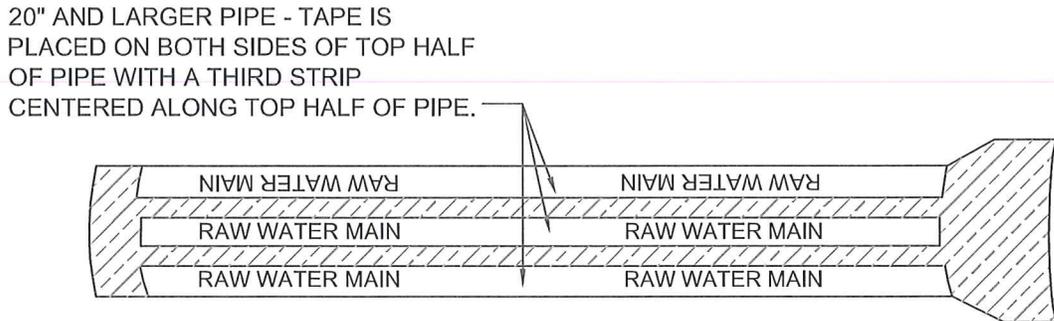
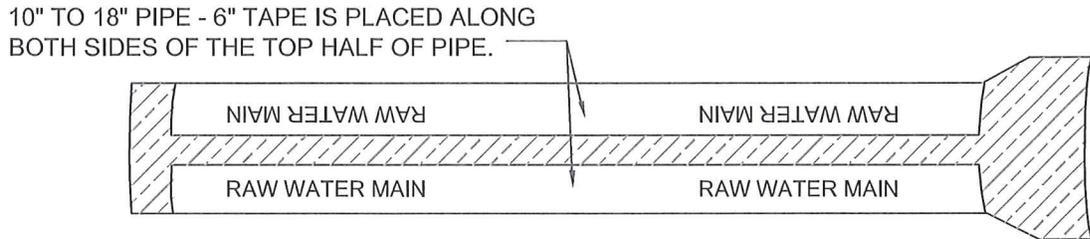
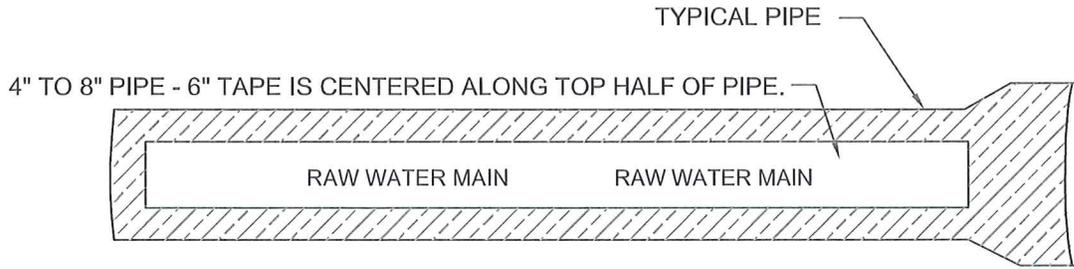
- 16) Penalty for Cross-Connection.....\$500.00

- 17) ~~Wastewater Pretreatment Rates, Charges, and Fees~~ shall be applied pursuant to Section ~~12.0~~, contained in Reference Manual ~~6(E)~~, "Industrial Wastewater Industrial Pretreatment Policy Manual", Polk County Utilities Code, most recent edition.

- 18) Relocate Meter.....\$175.00
 Above 3/4" – time/labor materials

- Deleted: Surcharge for
- Deleted: High Strength Industrial Wastes
- Deleted: calculated and
- Deleted: 30
- Deleted: (E)
- Deleted: "Wastewater Constituent Limitations,"
- Deleted: F

- **Standards and Specifications Manual (6B)**
- **Chapter Three (3): General Requirements**
 - **Standard Drawing GR-14-5**
 - **Standard Drawing GR-15-2**



SILVER TAPE WITH BLACK PERMANENTLY IMPREGNATED LETTERING SHALL BE USED. THE TAPE SHALL RUN FROM JOINT TO JOINT ALONG THE PIPE (TYPICAL).

DRAFT

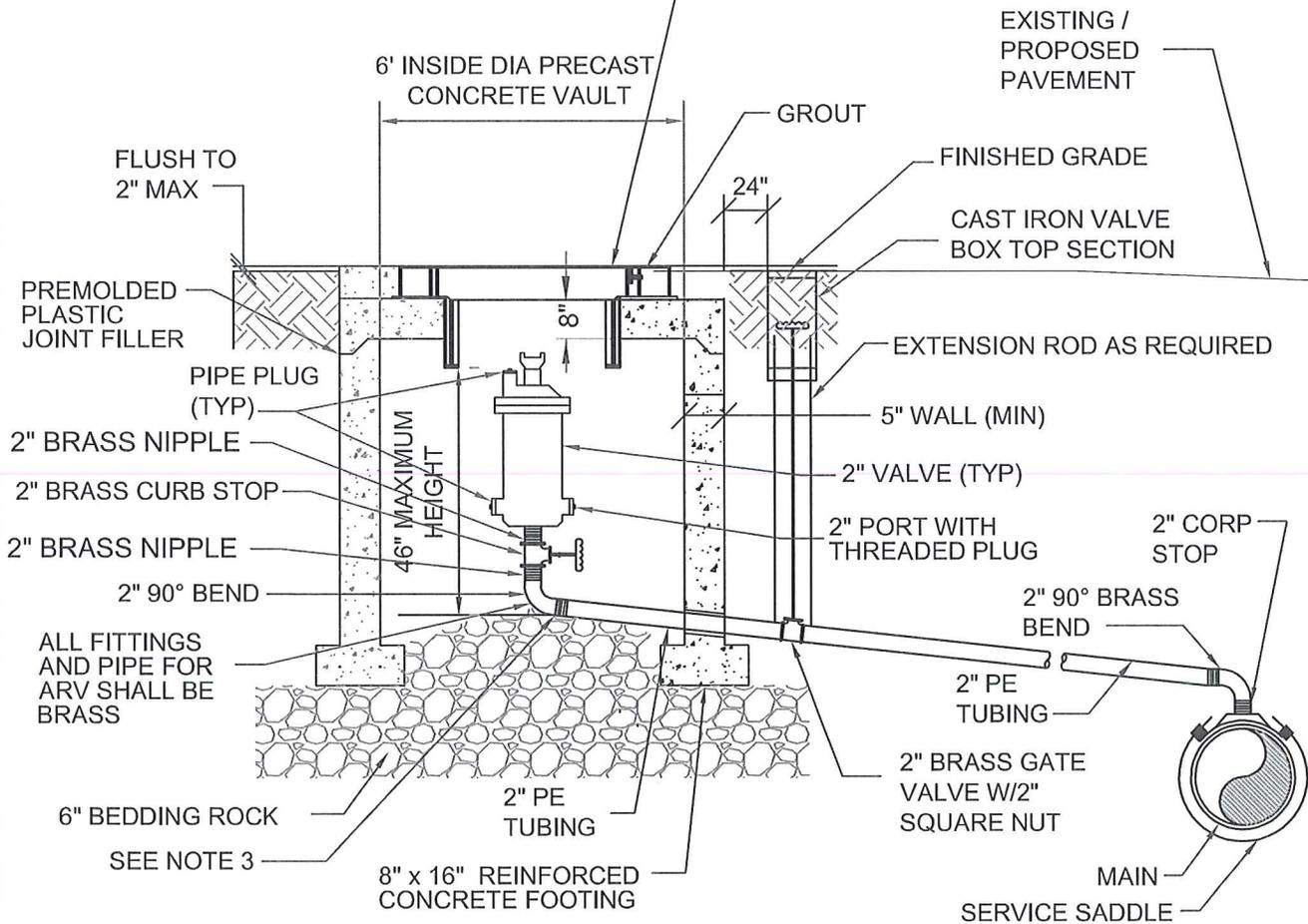
DUCTILE IRON PIPE RAW WATER MAIN WITH IDENTIFICATION TAPE
 (OR BLUE IF OLIVE GREEN OR WHITE ARE UNAVAILABLE) NTS

PVC PIPE COLOR
 OLIVE GREEN OR WHITE WITH A 3" OLIVE GREEN STRIPE WITH BLACK LETTERING

PIPE IDENTIFICATION RAW WATER MAINS POLK COUNTY UTILITIES, FLORIDA	FIGURE GR-14-5 OCTOBER, 2011
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Original Callout stated: Cast Iron Frame and Cover with Access Lid (See Figure WW-04-02)

TROUGH FRAME, DOUBLE DOOR, HEAVY-DUTY AASHTO H20-44 LOADING WITH 1/4" DIAMOND ALUMINUM PLATE, AISI TYPE 316 STAINLESS STEEL HARDWARE



DRAFT

NOTES :

1. ABOVE DETAIL SHALL ONLY BE UTILIZED WHEN PCU DETERMINES THAT FIGURE GR-15-1 IS NOT APPROPRIATE FOR THE PROPOSED INSTALLATION.
2. VALVE SHALL BE SUPPORTED TO VAULT WALL.
3. THE MINIMUM DIMENSION FROM ELBOW INVERT TO FINISHED GRADE SHALL BE 4.0 FEET.
4. ABOVE DETAIL IS BASED ON 2" AIR RELEASE VALVE. CHANGE PIPE AND FITTINGS ACCORDINGLY FOR OTHER VALVE SIZES AND TYPES. VALVE SIZES AND NUMBERS TO BE DETERMINED BY THE ENGINEER AND APPROVED BY PCU PRIOR TO INSTALLATION.
5. AUTOMATIC COMBINATION AIR AND VACUUM RELEASE VALVE SHALL UTILIZED AS APPROPRIATE OR REQUIRED BY PCU.

**AUTOMATIC AIR RELEASE VALVE
(IN GROUND)**

POLK COUNTY UTILITIES, FLORIDA

**FIGURE
GR-15-2**

DECEMBER, 2010

- **Standards and Specifications Manual (6B)**
 - **Chapter Four (4): Potable Water**
 - **Section 411: Raw Water Main Design Standards...**
 - **Part 5 – Construction**
 - **Part 7 – Execution**
 - **Section 450-B: Approved Materials Checklist**
 - **Section 450-E: Water Pressure Test Form**
 - **Standard Drawing WA-06**

CHAPTER 4 WATER

Section 411 Raw Water Main Design Standards and Specifications

December 2010

Separation of raw water, reclaimed water, potable water, and wastewater system shall comply with FDEP regulations and PCU standards per the STANDARD DRAWINGS.

- L. Air Release Valves:
Refer to “Potable Water Main Design Standards and Specifications”.
- M. Permanent sample stations shall not be required on raw water mains.
- N. Pigging (Swabbing) Stations:
Refer to “Potable Water Main Design Standards and Specifications”.

PART 5 - CONSTRUCTION

5.01 SCOPE OF WORK

- A. These specifications cover the pipes, fittings, and appurtenances used for raw water mains. All materials shall be utilized in accordance with the appropriate “Approved Materials Checklists”.
- B. The CONTRACTOR shall replace, at his expense, all materials found to be defective or damaged in handling or storage. The CONTRACTOR shall, if requested by PCU, furnish certificates, affidavits of compliance, test reports, or samples for analysis for any of the materials specified herein. All pipe delivered to project site for installation is subject to random testing for compliance with the designated specifications.
- C. Pipe and fitting interior linings shall conform to ANSI/NSF 61 list of approved materials standard.
- D. Raw water mains, service piping, and connections shall be installed as indicated in the STANDARD DRAWINGS.
- E. The color for raw water pipes and appurtenances shall be as directed by FDOH [and in accordance with Section 411, 7.01.A.2 below.](#)
- F. Fire hydrant assemblies shall not be installed on any part of a raw water main.
- G. Pigging of pipe shall be used to remove foreign materials in lieu of flushing.

PART 6 - PRODUCTS

6.01 PIPE MATERIALS

- A. PVC Pipe:
Refer to “Potable Water Main Design Standards and Specifications”.
- B. Ductile Iron Pipe:
Refer to “Potable Water Main Design Standards and Specifications”.
- C. HDPE Pipe:

CHAPTER 4

WATER

Section 411 Raw Water Main Design Standards and Specifications

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operation. Automatic combination air and vacuum release valves shall be utilized to prevent both air locking and vacuum formation. Valves shall be made of either high strength plastic with corrosion resistant polymer materials or have a cast iron body, cover, and baffle, stainless steel float, bronze water diffuser Buna-N or Viton seat and stainless steel trim. Valves must be installed in an enclosure as shown on the STANDARD DRAWINGS. Fittings from the main to the valve in the enclosure shall be threaded and made of brass.

PART 7 - EXECUTION

7.01 MATERIAL IDENTIFICATION AND TESTING

A. Pipe Identification and Location:

1. Each length of pipe shall bear the name or trademark of the manufacturer, the location of the manufacturing plant, and the class or strength classification of the pipe. The markings shall be plainly visible on the pipe barrel. DI pipe shall meet all applicable requirements of AWWA C151. Pipe, which is not clearly marked, is subject to rejection. The CONTRACTOR shall remove all rejected pipe from the project site within five NORMAL WORKING DAYS.
2. All PVC pipe and other pipe that is factory color-coded on the outside surface of the pipe shall be identified and locatable as specified in the STANDARD DRAWINGS. Olive green is the material identification color established by FDOH for raw water pipe. All DI pipe, and other pipe not factory color-coded on the outside surface of the pipe, shall be identified and locatable as specified by the "STANDARD DRAWINGS. Where the above type of identification method is not considered to be practical by PCU, the pipe shall have a field applied three inch wide permanent paint stripe down the top outside center of the pipe along its entire length. Identification color shall be olive green in accordance with the requirements established by the FDOH.

B. Material Testing Requirements:

1. If requested by PCU, a sample of pipe to be tested shall be selected at random by PCU or the testing laboratory hired by PCU.
2. When the samples tested conform to applicable standards, all pipe represented by such samples shall be considered acceptable based on the test parameters measured. Copies of test reports shall be available before the pipe is installed on the project.
3. In the event that any of the test samples fail to meet the applicable standards, all pipe represented by such tests shall be subjected to rejection. The CONTRACTOR may furnish two additional test samples from the same shipment or delivery, for each sample that failed and the pipe will be considered acceptable if all of these additional

CHAPTER 4

WATER

Section 450-B

Approved Materials Checklist

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PLEASE TYPE OR PRINT CLEARLY IN BLACK INK

Project Name: _____

PCU Project File Number: _____

Contractor's Name: _____

Contractor's Address: _____

Contractor's Signature: _____

Engineer's Name: _____

Engineer's Address: _____

PCU Reviewer: _____ Date: _____

Approved: _____ Denied/Resubmit: _____

Comments:

With the submission of this document, the CONTRACTOR understands that the use of the following selected items, as individually indicated by the use of an "X", is mandatory.

Substitutions using other items contained within this Checklist shall be initiated by the CONTRACTOR submitting a revised Checklist to PCU for its review and approval at least 10 calendar days in advance of need.

It is also understood by the CONTRACTOR that PCU shall reject materials and products not in accordance with this document and the MANUAL. Any material or product not contained within this Checklist shall be approved in advance by the Utilities Code Committee in accordance with the provisions of the Utilities Code.

Shop drawings shall be required for all structures and similar items not contained on this checklist, such as manholes, wet wells, and other castings.

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WATER

Section 450-B

Approved Materials Checklist

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Four (4) sets of the CONTRACTOR's and ENGINEER's executed APPROVED MATERIALS CHECKLIST and any necessary shop drawings shall be submitted to PCU for its use and approval, plus the number of sets needed for the CONTRACTOR use. Ordering materials and products without specific written approval from PCU of the submitted list and shop drawings is NOT recommended and is done at the CONTRACTOR's sole expense and responsibility.

NOTE: The latest changes approved by the Utilities Code Committee are indicated by "underlining" and deleted items by "~~strikethroughs~~".

Water Category 1 of 5: VALVES AND ACCESSORIES			
ITEM TO BE USED	Manufacturer	Part Number	Comments
Automatic Combination Air / Vacuum Release Valves:			
	ARI	D-040	Combination
	ARI	S-050	Air Release Only
	ARI	S-010	Air Release Only
	Val-Matic	VM-38	
	Val-Matic	VM-45	
Air / Vacuum Release Valve Enclosure (Horizontal Venting and Medium Blue):			
	Water Plus	No. 40 (171730)	
	Channell	BPH 1730	
	Hydro-Guard	Safety-Guard 15100 Low Profile or 02100	
Air / Vacuum Release Valve Vault Frame And Cover:			
	US Foundry	USF-679-BK-M	
	CertainTeed	Pamrex 36"	Alternative – <u>Not to be used in paved roadways.</u>
Blow Off Valve:			
	Hydro Guard	HG-2 Low Profile	Automatic Blow Off
	Water Plus	Series VB 2000	
Butterfly Valves 42-inch And Larger: (8 mil Epoxy Coated, Lined (AWWA), And For On-Site Water Production Facility Use Only):			
	M & H	4500	
	Mueller/Pratt	Linseal III / BV (Ground Hog)	
Gate Valves 16-inch Through 48-inch (Resilient Seated Only With Side Actuators):			
	American Flow Control	Series 2500	
	Mueller	Series A-2361	

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WATER

Section 450-B

Approved Materials Checklist

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	M & H	Series 4067	
Gate Valves 12-inch And Smaller (Resilient Seated Only):			
	American Flow Control	Series 2500	
	M & H	Series 4067	
	Mueller	Series A-2360	
	<u>Clow</u>	<u>Series F-6100</u>	
Sample Station (Above Grade) (Blue in Color):			
	Water Plus	Series 301W	May be used as an alternative to the field assembled sample station.
	Hydro-Guard	Safety-Guard SGBSS-05 SS or -06 SS with S300 Enclosure	May be used as an alternative to the field assembled sample station.
Tapping Valves (Resilient Seated Only):			
	American Flow Control	Series 2500	
	M & H	Series 4751	
	Mueller	Series T-2360 & T-2361	
	<u>Clow</u>	<u>Series F-6114</u>	
Test Station Box For Buried Valves:			
	Bingham/Taylor	P200NFG2T	
Valve Boxes with Lids (5/4 -Inch, ASTM A48 30B Cast or Ductile Iron, With "WATER" cast into the lid top):			
	Bingham / Taylor Foundry	4905-X, 4905, 4904L	
	Tyler	Series 6850	
	American Flow Control*	Trench Adapter Models 1 through 9	* For mains with valve nuts that are 6' or deeper.
	Sigma	VB261, VB262, VB264, VB4650W	
	Mueller	MVB	Use w/ AJBV-4" Locking Bolt
	Star		Heavy Duty Screw or Slip Type

Water Category 2 of 5: SERVICE MATERIALS

CHAPTER 4

WATER

Section 450-B

Approved Materials Checklist

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ITEM TO BE USED	Manufacturer	Part Number	Comments
Angle Stops Ball Type (1-inch And 2-inch CTS OD Tubing By 5/8-inch By 3/4-inch And 2-inch Meter):			
	Ford	BA43-242W, BFA43-777W	
	Mueller	P24258, P24276	
	McDonald	4642B-22, 4602B-22	
Angle Stops Ball Type (3/4-inch FIP By 5/8-inch By 3/4-inch Meter):			
	Ford	BA13-232W	
	Mueller	B24265R	
	McDonald	4604B	
Corporation Stops Ball Type (1-inch and 2-inch With AWWA Iron Pipe Threads Only/Pack Joint Outlet For CTS):			
	Ford	FB1000	
	Mueller	P25008	
	McDonald	4701B-22	
Curb Stops Straight Valves (Curb Stop To Be Ball Type, Reduced Port FIP By FIP 3/4-inch By 3/4-inch):			
	Ford	B11-233W	
	Mueller	B-20200-R	
	McDonald	6101W	
Curb Stops Straight Valves (Ball Type Compression By Meter, 1-inch And 2-inch CTS OD Tubing By 5/8-inch By 3/4-inch Meter):			
	Ford	B43-342W, BF43-777W	
	Mueller	P24350, B24337, B24335	
	McDonald	6100MW-22	
Curb Stops Straight Valves (Ball Type Compression By Compression):			
	Ford	BA44-444W	
	Mueller	P25146	
	McDonald	6100W-22	
Polyethylene Tubing (Blue With UV Protection [SDR-9] 1-inch And 2-inch Only):			
	Endot	PE-4710 EndoPure	
	Endot	PE-4710 EndoTrace	Alternative Pipe and Tracer Wire Combo
	Charter Plastics	PE-4710	
	ARNCO	PE-4710 Perma-Guard	

CHAPTER 4

WATER

Section 450-B

Approved Materials Checklist

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	ARNCO	PE-4710 Perma-Find	Alternative Pipe and Tracer Wire Combo
Service Saddles (Epoxy Or Nylon Coated Ductile Iron Body with Stainless Steel 18-8-Type 304 Straps, CC Threads – 2-inch To Be Iron Pipe Threads Controlled OD Saddles To Be Used On C-900 And IPS OD PVC Pipe, Double Straps To Be 2-inch Minimum Width Each):			
	Ford	Series FC202	
	JCM	Series 406	
	Mueller	DR2S, DR2SOD	
	McDonald	3855, 3855	
	Cascade	CNS 1, CNS 2	
	Romac	202N	
	Romac	202N-H	For Use With HDPE Pipe

Y Branch (1-inch By 2-inch):

Deleted: 3/4

	Ford	U-48-43	
	Mueller	P15363	
	McDonald	08U2M	

Y Branch Assemblies With Angle Ball Valves (1-inch By 2-inch):

Deleted: 3/4

	Ford	UVB43-42W	
	Mueller	P15363-05	
	McDonald	09U2BW	

Meter Boxes w/ Plastic Lids (Black, HDPE):

Deleted: Cast Iron

	Carson PolyPlastic	1015-12 (Box)	1015-5 (Lid)
	DFW Alliance	DFW 1200.12 (Box)	DFW 1200.1R (Lid)
		DFW 1200.12.1R (Combo Unit)	
	▼	▼	▼
	▼	▼	▼

Deleted: Drexol

Deleted: DX1015-12

Deleted: Drexol

Deleted: DX1015-18

Deleted: Pentek

Deleted: 170111

Deleted: Equivalent to Drexol 12"

Deleted: Pentek

Deleted: 194525

Deleted: Equivalent to Drexol 18"

Water Category 3 of 6: PIPE MATERIAL

ITEM TO BE USED	Manufacturer	Part Number	Comments
Casing Spacers (All Sizes) Stainless Steel With Vinyl Runners:			
	Cascade	Series CCS / CCPS / AZ	
	PSI	Series S-G-2	
	PSI-Ranger	Ranger II	
	RACI	S/T, F/G, P/Q, M/N, E/H	
	CCI	CSS8, CSS12	

CHAPTER 4

WATER

Section 450-B

Approved Materials Checklist

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	Advanced Systems		
Ductile Iron Pipe Cement Lined (4-inch To 12-inch = PC 350, 16-inch To 20-inch= PC 250, 24-inch = PC 200, 30-inch To 64-inch = PC 150) (DI Flanges As Applicable, AWWA C115):			
	American		
	Clow		
	Griffin		
	McWane		
	US Pipe		
Paint: Aerial Pipe, Fittings, And Valves (Field and Factory Primer):			
	Color Wheel	635 Primer Red	
	Glidden	Alkyd Metal Primer	
	Porter/International	286 U-Primer	
	Tnemec	37H-77 Chem-Primer	
	Tnemec	Pota-Pox Plus N140	
	Wasser	Ferro Clad Primer	
Paint: Finish (Exterior):			
	Color Wheel	600 Alkyd Enamel	
	Glidden	Alkyd Industrial Enamel	
	Porter/International	2749 Alkyd Gloss	
	Tnemec	Tnemec - Gloss 2H	
	Tnemec	Pota-Pox 100 Series 22	
PVC (Blue) 4-inch Through 12-inch Pipe (AWWA C-900, DR18) and 16-inch and larger pipe (AWWA C-905 or C-909, DR 25):			
	Bristolpipe	4" to 12"	
	Certainteed	Certa-Lok 4" to 12"	
	Diamond Plastic		
	Ipex		
	J-M Manufacturing		
	National Pipe		
	NAPCO		North American Pipe Company
	Upinor ETI 9	Ultra Blue-C-909	
	Underground Solutions	Fusible PVC	<u>For Horizontal Directional Drill Use Only</u>
HDPE Pipe DR11 (Blue Striped):			
	Chevron/Phillips	Performance Pipe / ISCO Pipe	
	CSR	Polypipe/Charter Plastics	
	JM-Eagle		
	National Plastics		

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	ARNCO		
Potable Water Main Identification Tape (Blue, 6-Inches Wide, 2-Inch High Black Lettering, Adhesive Backed):			
Buried Potable Water Main Warning Tape (Blue, 3-inches Wide, 1-Inch High Black Lettering, Non-Adhesive Backed):			
Locating Wire (Single Strand 14-Gauge Solid Copper Wire with Blue Colored Insulated Covering):			
	Copperhead	Reinforced Tracer Wire	Alternative
Locating Marker Systems (Potable Water) (Blue In Color):			
	3M	Scotch Mark EMSII Electronic Marker Blue Locator #1265	
	3M	Scotch Marker Electronic Ball Marker #1404	
Curb and Pavement Markers (Blue in Color, Imprinted With The Words "POLK COUNTY UTILITIES" And "CALL 811 BEFORE YOU DIG" With "POTABLE WATER SERVICE" or "POTABLE WATER VALVE" As Applicable):			
	Rhino	ATAGNCT-C (Custom Imprinting)	New Construction
	Rhino	ATAGRFT-C (Custom Imprinting)	Retrofit to Existing Improvements
	DAS Manufacturing	Reflective Duracast Style (Custom Imprinting)	New Construction or Retrofit

Water Category 4 of 6: PIPE FITTINGS			
ITEM TO BE USED	Manufacturer	Part Number	Comments
Expansion Joints:			
	EBA Iron		
	Metraflex		
	Star	Star Flex Series 5000, 5100, & 5200	
	Proco		
	Mercer Rubber		

CHAPTER 4

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Fittings C153 SSB / C110 Flange (Cement Mortar Lined And Asphaltic Coated In Accordance With C104) (Outside Surfaces Shall Be Prime Coated Only If Located Aboveground And Painted):			
	American		
	Union/Tyler		
	US Pipe		
	Sigma		
	Star Pipe		
Restrained Joints - Ductile Iron Pipe:			
	American	Fast Grip Gasket Flex Ring Field Flex Ring Lok Ring	
	EBAA Iron Inc.	Mega-lug Series 1100 Series 1700 Bell Restrainer Series RS-3800 Restrainer - sleeve included	
	Sigma	One LOK SLD	
	Sigma	LOK Series PVP and PVPF	
	Star	Stargrip Series 3000, 3000S, & 3000OS Series 3100S & 3100P Flange Adapter Series 200 & 400 Retainer Gland Series 600 Series 1000, 1100, & 1200 Adapter Flange Series 3200 & 4200	
Restrained Joints - PVC Pipe:			
	EBAA Iron Inc.	Mega-lug Series 2000PV Series 1500 & 1600 Bell Restrainer (4-inch to 12-inch) Series RS-3800 Restrainer – sleeve included	
	JCM	620 Sur-Grip Bell Joint 621 Sur-Grip Bell Joint	

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	Uni-Flange/Ford	1350 Bell Restrainer 1360 Bell Restrainer 1390 Bell Restrainer 900 Adapter Flange 1300 Fitting Restrainer 1500 Series	
	Sigma	One LOK SLC	
	Sigma	PV LOK Series PVP and PVPF	
	Star	PVC Stargrip Series 4000 & 4000P PVC Harness Series 1000, 1100, & 1200 Adapter Flange Series 3200 & 4200 Adapter Flange Series 200 & 400	
	Tyler/Union	Tuf Grip TLD Series	For DI Pipe Use
	Tyler/Union	Tuf Grip TLP Series	For PVC Pipe Use

Tapping Sleeves (For All Taps On IPS OD PVC pipe, Including Size On Size (18-8 Type 304 Stainless Steel Body, Flange And Bolts), Flange To Accept Standard Tapping Sleeves):

	Ford	Series FTSS	
	JCM	Model 432	
	Mueller	Series H-304 S/S	
	Cascade	CST-EX	

Tapping Sleeves (Mechanical Joint For All Taps On Cast Iron, Ductile Iron, PVC-900 & AC Pipe, All Taps Including Size On Size):

	American Flow Control	Series 2800	
	Mueller	Series H-615, H-616, H-619	
	JCM	Series 432	

Tapping Sleeves (Fabricated Steel, Mechanical Joint, Fusion Bonded Epoxy Coated):

	JCM	Series 414	
--	-----	------------	--

Water Category 5 of 5: FIRE HYDRANT ASSEMBLIES

ITEM TO BE USED	Manufacturer	Part Number	Comments
Fire Hydrants (5 1/4 Inch Valve Opening, Final Exterior Color - Painted International Orange):			
	American Flow Control	B-84-B	
	Kennedy	K81A	

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	Mueller	Super Centurion 250	
Anti-Terrorism Valve for Fire Hydrants (5 1/4 Inch Valve Opening) (For Installation in New and Existing Non-HS Type Fire Hydrants):			
	Davidson	ATV	To be utilized as directed by PCU for potable water system security purposes.

CHAPTER 4 WATER

Section 450-E Water System Hydrostatic Pressure Test Report (PVC and Ductile Iron Pipe) December 2010

Project: _____
 PCU Project No.: _____

Procedures for conducting this test shall be in strict conformance with AWWA standard C600, latest revision. Maximum allowable leakage shall be: $L = ND(P)^{1/2}$

_____ 7,400

Deleted: Maximum allowable leakage shall be: $L = SD(P)^{1/2}$
 133,200

Where:

- L = maximum allowable leakage, measured in gallons per hour
- N = number of joints in the tested line (where a pipe joins a pipe or a pipe joins a fitting)
- D = nominal diameter of pipe, measured in inches
- P = test gauge pressure, measured in pounds per square inch (minimally 150 psi)
- (For a 2-hour test at 150 psi, equation simplifies to: $L = ND \times 0.00331$)

Deleted: (For a 2-hour test at 150 psi, equation simplifies to: $L = SD \times 0.000092$)

Deleted: S
 S = length of pipe being tested, in feet

TESTING PARAMETERS & SYSTEM INFORMATION

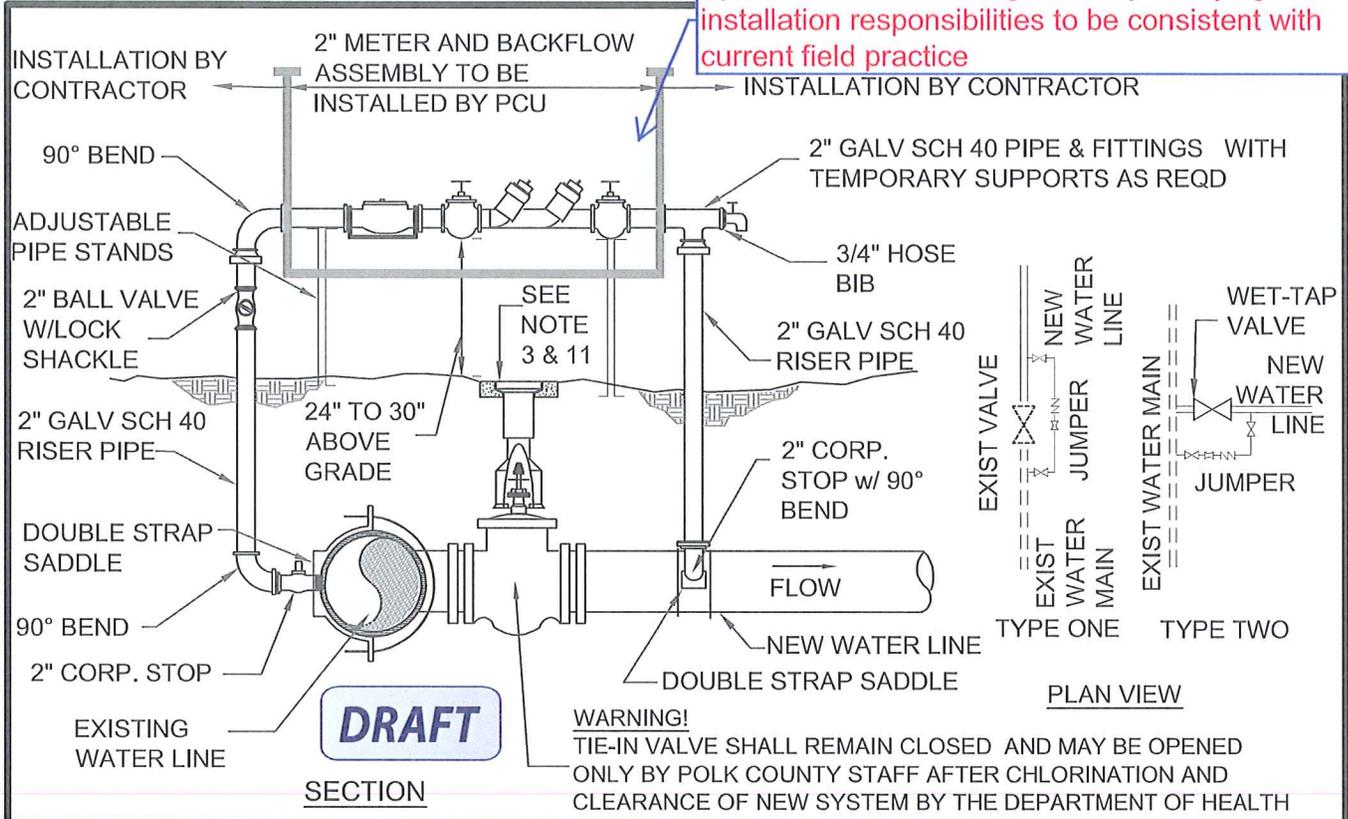
Test Pressure (minimally 150 psi):		psi
Beginning Test Pressure:	psi	Ending Test Pressure: psi
Test Duration (minimally 2 hours):	Hours:	
Date of Test:		
Time at Start of Test:	Time at End of Test:	
Test Segment Location:		

Pipe Type	Diameter, inches	Length, feet	Number of joints	Max. Leakage for 2 Hour Test, gallons
Total Maximum Allowable Leakage, gallons:				
Total Actual Leakage, gallons:				

CONTRACTOR & INSPECTOR PERSONNEL INFORMATION

	Contractor	Inspector
Signature:		
Printed Name:		
Company Name:		
Phone Number:		
Date:		

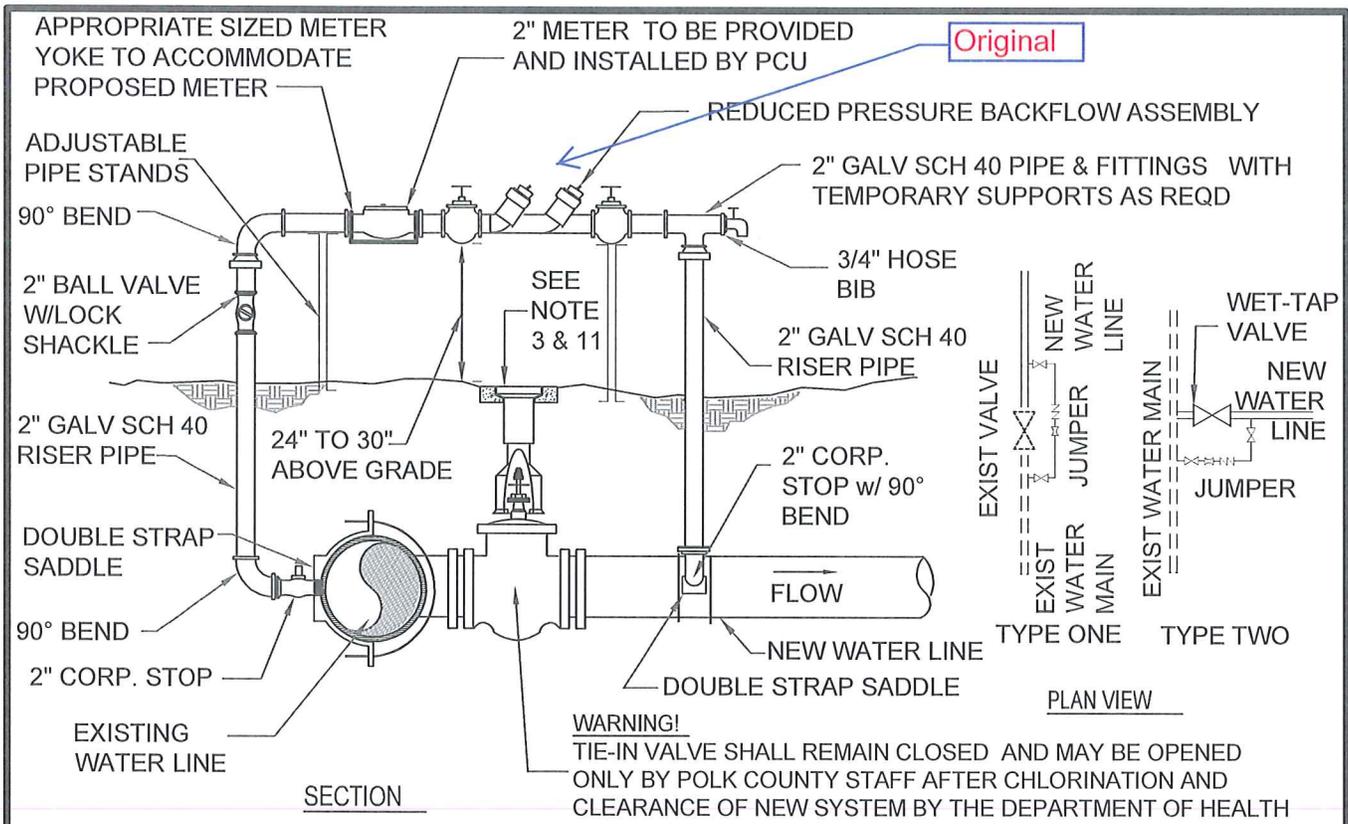
Specification is unchanged... only clarifying installation responsibilities to be consistent with current field practice



1. THE ENTIRE JUMPER ASSEMBLY EXCEPT AS NOTED ABOVE SHALL BE INSTALLED BY THE CONTRACTOR.
2. THIS JUMPER CONNECTION IS REQUIRED AT THE PRIMARY POINT OF CONNECTION TO ACTIVE POTABLE WATER MAINS. THE METER, BACKFLOW PREVENTER AND ALL PIPE AND FITTINGS USED FOR THE JUMPER CONNECTION SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651, LATEST EDITION.
3. THE TIE IN VALVE SHALL BE LOCKED AND BURIED UNTIL DOH CLEARANCE AND OPERATED BY PCU ONLY.
4. THE JUMPER CONNECTION SHALL BE USED TO FILL AND FLUSH THE NEW WATER MAIN AND TO PROVIDE WATER FOR TESTING AND BACTERIOLOGICAL SAMPLING OF THE NEW MAIN AS REQUIRED.
5. FLUSHING OF NEW WATER MAINS MAY BE DONE VIA THE TIE-IN VALVE ONLY FOLLOWING DOH CLEARANCE.
6. THE TIE-IN VALVES SHALL BE OPERATED AND PRESSURE TESTED IN THE PRESENCE OF PCU STAFF IN ORDER TO VERIFY WATER TIGHTNESS PRIOR TO TIE-IN. VALVES WHICH ARE NOT WATERTIGHT SHALL BE REPLACED BY THE CONTRACTOR OR A NEW VALVE INSTALLED IMMEDIATELY ADJACENT TO THE LEAKING VALVE.
7. THE JUMPER CONNECTION SHALL REMAIN OPEN TO MAINTAIN MINIMUM PRESSURE (20psi) IN NEW MAINS AFTER DISINFECTION BUT PRIOR TO HEALTH DEPT CLEARANCE LETTER BEING ISSUED.
8. THE JUMPER CONNECTION MAY NOT BE REMOVED UNTIL FLUSHING, TESTING, AND DISINFECTION OF NEW WATER MAINS IS COMPLETED AND THE SYSTEM CLEARANCE LETTER IS OBTAINED FROM THE POLK COUNTY HEALTH DEPARTMENT.
9. ADEQUATE SUPPORTS, BRACING AND/OR RESTRAINTS SHALL BE PROVIDED AS NEEDED TO RESIST PRESSURE FORCES AND SUPPORT THE ASSEMBLY.
10. THE JUMPER CONNECTION SHALL BE PROTECTED FROM DAMAGE BY INSTALLATION OF A PROTECTIVE WARNING FENCE OR SIMILAR BARRICADE, WHICH SHALL BE ERECTED AND MAINTAINED BY THE CONTRACTOR.
11. UPON RECEIPT OF CLEARANCE FOR USE FROM THE HEALTH DEPARTMENT AND A REQUEST TO TERMINATE CONSTRUCTION SERVICE, PCU WILL REMOVE THE METER AND THE CONTRACTOR SHALL REMOVE THE TEMPORARY JUMPER CONNECTION AND INSTALL THE VALVE BOX AND PAD.
12. CORPORATION STOPS SHALL BE CLOSED AND PLUGGED WITH 2" BRASS PLUGS BY THE CONTRACTOR.

JUMPER CONNECTION (TYPICAL)

**FIGURE
WA-06**



1. THE ENTIRE JUMPER ASSEMBLY EXCEPT THE METER SHALL BE INSTALLED BY THE CONTRACTOR.
2. THIS JUMPER CONNECTION IS REQUIRED AT THE PRIMARY POINT OF CONNECTION TO ACTIVE POTABLE WATER MAINS. THE METER, BACKFLOW PREVENTER AND ALL PIPE AND FITTINGS USED FOR THE JUMPER CONNECTION SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651, LATEST EDITION.
3. THE TIE IN VALVE SHALL BE LOCKED AND BURIED UNTIL DOH CLEARANCE AND OPERATED BY PCU ONLY.
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5. FLUSHING OF NEW WATER MAINS MAY BE DONE VIA THE TIE-IN VALVE ONLY FOLLOWING DOH CLEARANCE.
6. THE TIE-IN VALVES SHALL BE OPERATED AND PRESSURE TESTED IN THE PRESENCE OF PCU STAFF IN ORDER TO VERIFY WATER TIGHTNESS PRIOR TO TIE-IN. VALVES WHICH ARE NOT WATERTIGHT SHALL BE REPLACED BY THE CONTRACTOR OR A NEW VALVE INSTALLED IMMEDIATELY ADJACENT TO THE LEAKING VALVE.
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8. THE JUMPER CONNECTION MAY NOT BE REMOVED UNTIL FLUSHING, TESTING, AND DISINFECTION OF NEW WATER MAINS IS COMPLETED AND THE SYSTEM CLEARANCE LETTER IS OBTAINED FROM THE POLK COUNTY HEALTH DEPARTMENT.
9. ADEQUATE SUPPORTS, BRACING AND/OR RESTRAINTS SHALL BE PROVIDED AS NEEDED TO RESIST PRESSURE FORCES AND SUPPORT THE ASSEMBLY.
10. THE JUMPER CONNECTION SHALL BE PROTECTED FROM DAMAGE BY INSTALLATION OF A PROTECTIVE WARNING FENCE OR SIMILAR BARRICADE, WHICH SHALL BE ERECTED AND MAINTAINED BY THE CONTRACTOR.
11. UPON RECEIPT OF CLEARANCE FOR USE FROM THE HEALTH DEPARTMENT AND A REQUEST TO TERMINATE CONSTRUCTION SERVICE, PCU WILL REMOVE THE METER AND THE CONTRACTOR SHALL REMOVE THE TEMPORARY JUMPER CONNECTION AND INSTALL THE VALVE BOX AND PAD.
12. CORPORATION STOPS SHALL BE CLOSED AND PLUGGED WITH 2" BRASS PLUGS BY THE CONTRACTOR.

JUMPER CONNECTION (TYPICAL)

**FIGURE
WA-06**

- **Standards and Specifications Manual (6B)**
 - **Chapter Five (5): Wastewater**
 - **Section 510: Gravity Wastewater System Standards**
 - **Part 5 – Manholes**
 - **Section 550-C: Approved Materials Checklist**
 - **Section 550-E: Wastewater Pressure Test Form**

CHAPTER 5 WASTEWATER

Section 510 Gravity Wastewater System Standards and Specifications December 2010

Where the difference in elevation between the incoming gravity main invert and the manhole invert is less than 24 inches, the manhole invert shall be filleted to prevent solids deposition.

2. Drop Manhole:

An interior drop pipe shall be provided for wastewater gravity main entering a manhole where the invert elevation is 24 inches or more above the manhole invert.

Deleted: outside

3. Master Manhole:

All gravity and force mains shall discharge their flows into a master manhole prior to the wet well of a wastewater lift station. Force mains intersecting gravity main systems shall discharge into a master manhole at a maximum angle of 45 degrees to the flow path in the manhole. All master manholes shall be lined or coated and have a minimum interior diameter in accordance with Table 510-3.

C. Personnel Access Opening:

Manhole covers and frames shall provide a 24 inch minimum access clearance through the frame opening.

D. Diameter:

Manholes shall have minimum interior diameters from the structure's base to the bottom of the top conical section as based on the main diameter in accordance with Table 510-3.

Table 510-3. Minimum Manhole Diameters.

Gravity Main Diameter (inches)	Minimum Inside Manhole Diameter (inches)
8 to 24	48 (60 for Master Manholes)
24 to 36	60
36 and larger	72

E. Flow Channel:

The flow channel through manholes shall be made to conform in shape and slope to that of the gravity mains. Flow direction changes in excess of 90 degrees shall not be included in gravity main alignments without written permission from PCU. Flow line elevation drop of 0.1 feet across manholes shall be provided. Benching shall have a minimum downward slope of 1/2 inch per foot from the wall of the manhole towards the rim of the flow channel. No bricks shall be used to construct channels.

F. Materials:

1. Manholes shall be constructed of precast units as specified in this Section. Brick or cast-in-place manholes may be permitted on a case by case basis for retrofitting or repair purposes as approved by PCU.
2. Wastewater pipes, valves, and appurtenances shall be constructed of materials as specified in the Section entitled "Wastewater Pipes, Valves, and Appurtenances"

CHAPTER 5

WASTEWATER

Section 550-C

Approved Materials Checklist

December 2010

PLEASE TYPE OR PRINT CLEARLY IN BLACK INK

Project Name: _____

PCU Project File Number: _____

Contractor's Name: _____

Contractor's Address: _____

Contractor's Signature: _____

Engineer's Name: _____

Engineer's Address: _____

PCU Reviewer: _____	Date: _____
Approved: _____	Denied/Resubmit: _____
Comments:	

With the submission of this document, the CONTRACTOR understands that the use of the following selected items, as individually indicated by the use of an "X", is mandatory.

Substitutions using other items contained within this Checklist shall be initiated by the CONTRACTOR submitting a revised Checklist to PCU for its review and approval at least 10 calendar days in advance of need.

It is also understood by the CONTRACTOR that PCU shall reject materials and products not in accordance with this document and the MANUAL. Any material or product not contained within this Checklist shall be approved in advance by the Utilities Code Committee in accordance with the provisions of the Utilities Code.

Shop drawings shall be required for all structures and similar items not contained within this checklist, such as manholes, wet wells, and other castings.

CHAPTER 5

WASTEWATER

Section 550-C

Approved Materials Checklist

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Four (4) sets of the CONTRACTOR's and ENGINEER's executed APPROVED MATERIALS CHECKLIST and any necessary shop drawings shall be submitted to PCU for its use and approval, plus the number of sets needed for the CONTRACTOR use. Ordering materials and products without specific written approval from PCU of the submitted list and shop drawings is NOT recommended and is done at the CONTRACTOR's sole expense and responsibility.

NOTE: The latest changes approved by the Utilities Code Committee are indicated by "underlining" and deleted items by "~~strikethroughs~~".

Wastewater Category 1 of 5: VALVES AND ACCESSORIES			
ITEM TO BE USED	Manufacturer	Part Number	Comments
Automatic Air Release Valves:			
	Val-Matic	48ABW	Epoxy Lined
	ARI	S-020-T02	FBE Coated
	ARI	S-020-SST02	Stainless Steel
Automatic Combination Air / Vacuum Release Valves:			
	Val-Matic	802ABW	Epoxy Lined
	ARI	D-025-PT02	Reinforced Nylon
	ARI	D-025-SST02	Stainless Steel
Air / Vacuum Release Valve Enclosures (Horizontal Venting and Medium Green):			
	Water Plus	No. 40 (171730)	
	Channell	BPH 1730	
	Hydro-Guard	Safety-Guard 15100 Low Profile or 02100	
Air / Vacuum Release Valve and Large Diameter Manholes Frame and Cover:			
	US Foundry	USF 679-BK-M	
	CertainTeed	Pamrex 36"	Alternative – <u>Not to be used in paved roadways.</u>
Air / Vacuum Release Valve Service Saddles (Epoxy With Stainless Steel Straps):			
	Ford	Series FC202	
	JCM	406	
	Mueller	DR2S	
	Cascade	CNS 2	
Plug Valves – MJ & Flanged (8mil Fusion Bonded Epoxy Lined With Stainless Steel Bolts, Gear Operator To Be Sized For Rated Pressure Of The Valve, And For Use Only Within A Lift Station):			

CHAPTER 5

WASTEWATER

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	Dezurik	Series – PEC	
	Pratt	Ballcentric	
Gate Valves 16-inch Through 48-inch (Resilient Seated Only):			
	American Flow Control	Series 2500	
	Clow	Series F-6100	
	Mueller	Series A-2361	
	U.S. Pipe	Series 5460	
	Kennedy	Series 4571	
	M & H	Series 4067	
Gate Valves 12-inch And Smaller (Resilient Seated Only):			
	American Flow Control	Series 2500	
	American R/D	Series 2000	
	AVK	Series 25	
	Clow	Series F-6100	
	Kennedy	Series 4571	
	M & H	Series 4067	
	Mueller	Series A-2360	
	U.S. Pipe	Metroseal 250	
	Waterous	Series 500	
Tapping Sleeve (Fabricated Steel Mechanical Joint (Fusion Bonded)):			
	JCM	Series 414	
Tapping Sleeve (For All Taps On IPS O.D. PVC Pipe, Including Size On Size (18-8 Type 304 Stainless Steel Body, Flange, And Bolts), Flange To Accept Standard Tapping Valves.):			
	Ford	Series FTSS	
	JCM	Model 432	
	Mueller	Series H-304 S/S	
	Cascade	CFT-EX	
Tapping Sleeve (Mechanical Joint For Cast Iron, Ductile Iron, PVC C-900 & AC Pipe; All Taps Including Size On Size.)			
	Mueller	H615 / H616 / H619	
	American Flow Control	2800	
	JCM	Model 432	
Tapping Valves - MJ/Ductile Iron			
	M & H	Series 4751	
	American Flow Control	Series 2500	
	Mueller	T-2360 & T-2361	
	Clow	Series F-6114	
Locate Wire Access Box For Buried Valves			
	Bingham/Taylor	P 200NFG TEST 2T	

CHAPTER 5

WASTEWATER

Section 550-C

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Valve Box With Lids (5/4 -Inch, ASTM A48 30B Cast or Ductile Iron, With "SEWER" cast into the lid top):			
	Bingham/Taylor Foundry American Flow Control*	4905-X, 4905, 4904-L Trench Adapter	* For mains with valve nuts that are 6 feet or deeper.
	Sigma	VB261, VB262, VB264, VB4650W	
	Star		Heavy Duty Screw or Slip Type
	Mueller	MVB	Use w/ AJBV-4" Locking Bolt

Wastewater Category 2 of 5: PIPE MATERIALS			
ITEM TO BE USED	Manufacturer	Part Number	Comments
Casing Spacers (All Sizes) Stainless Steel With Vinyl Runners Centering			
	Cascade	Series CCS / CCPS / AZ	
	PSI	C-G-2 Series	
	RACI	S/T, F/G, P/Q, M/N, E/H	
	PSI-Ranger	Ranger II	
	CCI	CSS8, CSS12	
	Advance Systems		
Ductile Iron Pipe For Valve Vaults (4-inch To 12-inch = PC 350, 16-inch To 20-inch = PC 250, 24-inch = PC200, 30-inch To 64-inch = PC 150) (DI Flanges, AWWA C115):			
	American Ductile Iron Pipe	Protecto 401	Wasser Ferro Clad Primer
	Griffin Pipe Products	Protecto 401	
	US Ductile Iron Pipe	Protecto 401	
Ductile Iron Pipe Coatings, Linings, and Wrappings (For Use In Lift Station Wet Wells)			
	Superior Environmental Products	Interior – SP 2000 Exterior – SC 3300 with Wrapidseal applied	
	Wrapidseal	Interior – Protecto 401 Exterior – Permite with Wrapidseal	
HDPE Pipe DR11 (Green Striped) (Use For Directional Bores Is Prohibited Except With Specific PCU Approval)			
	Chevron/Phillips	Performance Pipe / ISCO Pipe	

CHAPTER 5

WASTEWATER

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	CSR	Polypipe/Charter Plastics	
	ARNCO		
	J-M Eagle		
	National Pipe		
Painting Finish Aerial Piping, Fittings, and Valves (Field Primer)			
	Porter/International	286 U-Primer	
	Tnemec	37-77H Chem-Primer	
	Glidden	Alkyd Industrial Enamel	
	Colorwheel	635 Red Primer	
Painting Finish (Exterior)			
	Porter/International	2749 Light Base	
	Tnemec	Tnemec-Gloss 2H	
	Glidden	Alkyd Industrial Enamel	
	Colorwheel	600 Exterior Finish	
PVC (Light Green) 4-inch Through 12-inch Pipe (AWWA C-900, DR18) and 16-inch and larger pipe (AWWA C-905 or C-909, DR 25):			
	Bristolpipe		
	Certainteed	Certa-Lok	
	J-M Manufacturing		
	Ipex		
	Diamond Plastics		
	(Out of Business)		
	National Pipe		
	NAPCO	North American Pipe Company	
	Uponor ETI	Ultra-Blue C909 (green)	
	Underground Solutions	Fusible PVC	For Pressure Main Use Only
PVC Gravity Pipe – Mains and Services (SDR 26, Light Green In Color)			
	Certainteed		
	Can-Tex		
	J-M Manufacturing		
	Diamond Plastics		
	(Out of Business)		
	Bristolpipe		
	National Pipe		
	Vassallo		
	NAPCO	North American Pipe Company	
Pipe Lining Material – Gravity Mains (Must Meet ASTM F1216 And Be Equal To Materials Listed Below)			

Deleted: Freedom Plastics

Deleted: Freedom Plastics

CHAPTER 5

WASTEWATER

Section 550-C

Approved Materials Checklist

December 2010

	Insituform	CIP Liner	
	National Liner	CIP Liner	
	LMK Enterprises	Performance Liner	
	Steven's Technologies	CIP Liner 2 part 100% epoxy	
	Inner Cure Technologies	Reichhold/DION CIP Liner	
	Lanzo Lining	Lanzo CIP Lining System	
	Reynolds Inliner	Reichhold/Intech	
	FirstLiner	FirstLiner CIP Lining System	
	Premier Pipe	Premier Pipe CIP Lining System	
Force Main Identification Tape (Light Green, 6-Inches Wide, 2-inches High Black Lettering, Adhesive Backed):			
Buried Force Main Warning Tape (Light Green, 3-inches Wide, 1-Inch High Black Lettering, Non-Adhesive Backed):			
Force Main Locating Wire (Single Strand 14-Gauge Solid Copper Wire with Light Green Colored Insulated Covering):			
	Copperhead	Reinforced Tracer Wire	Alternative
Locating Marker Systems (Force Main) (Green In Color):			
	3M	Scotch Mark EMSII Electronic Marker Locator #1265	
	3M	Scotch Marker Electronic Ball Marker #1404	
Curb and Pavement Markers (Green in Color, Imprinted With The Words "POLK COUNTY UTILITIES" And "CALL 811 BEFORE YOU DIG" With "SANITARY SEWER SERVICE" or "FORCE MAIN VALVE" As Applicable):			

Wastewater Category 3 of 5: PIPE FITTINGS			
ITEM TO BE USED	Manufacturer	Part Number	Comments
Expansion Joints			
	EBAA Iron Inc.		

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	Fernco		
	Star Pipe	Star Flex 5000, 5100, & 5200	
Fittings – Ductile Iron (C153 SSB/C110 FLG) (Cement Mortar Lined and Coated In Accordance With AWWA C104) (Outside Surfaces Shall Be Prime Coated Only If Located Aboveground And Painted):			
	Union/Tyler		
	US Pipe		
	American		
	Sigma		
	Star Pipe		
Fittings, Adapters, And Plugs - Gravity PVC (SDR 26, Light Green in Color):			
	Harco		
	J-M Manufacturing		
	Multi-Fittings		
	Plastic Trends		
Clean-Outs With Caps – PVC (White in Color, Exterior Nut):			
	USSI	Clean-Out Smart Plug with Plug Seat	For Use On PCU Operated Infrastructure As Required By PCU
Restrained Joints (Ductile Iron Pipe):			
	EBA Iron Inc.	Mega-lug 1100 (3-inch to 48-inch) Mega-lug 1100HD (10-inch to 48-inch) Mega-lug 2100 (3-inch to 12-inch) Series RS 3800 Restrainer	RS 3800 Includes Sleeve
	American	Fast Grip Gaskets Flex Ring Field Flex Ring Lok Ring	
	Ford	Series 1400-D	
	Sigma	One LOK SLD	
	Sigma	LOK Series PVP and PVPF	

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	Star Pipe	Stargrip Series 3000, 3000S, 3000OS, 3100P, & 3100S Flange Adapter Series 200 & 400 Retainer Gland Series 600 Restrainer Series 1000, 1100, & 1200 Flange Adapter Series 3200 Series 4000 & 4100P Series 3200 & 4200	
	Tyler/Union	Tuf Grip TLD Series	
Restrained Joints (PVC Pipe):			
	EBAA Iron Inc.	Mega-lug 2000 PV (4-inch to 36-inch) F/IPS, DR25, DR18, DR14 & DR41 Mega-lug 2000 SV (4-inch to 12-inch) Mega-lug 2100 Flange Adapter (3-inch to 12-inch) Mega-lug 1500 Bell Restraint (4-inch to 12-inch) Mega-lug 1600 Bell Restraint (4-inch to 12-inch) F/PVC C-900 Bell Restraint 2800 Series (14-inch to 42-inch) F/PVC C-905 Bell Restraint	
	Uni-Flange/Ford	1350 Bell Restrainer (2-inch to 12-inch) 1350 Bell Restrainer (2-inch to 8-inch) (14-inch to 24-inch) 1390 Bell Restrainer (4-inch to 12-inch) (12-inch to 24-inch) 900 Adapter Flange (4-inch to 12-inch) 1500 Series "CIRCLE LOCK" 1300 Fitting Restrainer (14-inch to 24-inch)	

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	JCM	610 Sur-Grip Bell Joint Restrainer (14-inch to 24-inch) 621 Sur-Grip Bell Joint Restrainer (14-inch to 24-inch) 610 Fitting Restrainer (4-inch to 30-inch) 620 Bell Restrainer (4-inch to 12-inch) 621 Bell Restrainer (14-inch to 30-inch)	
	Sigma	One LOK SLC	
	Sigma	PV LOK Series PVP and PVPF	
	Star	Stargrip PVC Series 4000 Series 1100 PVC Harness Series 1200 PVC Harness Series 4000 & 4100P Series 3200 & 4200 Restrainer Series 1000, 1100, & 1200 Flange Series 3200 & 4200 Adapter Flange Series 200 & 400	

Wastewater Category 4 of 5: MANHOLES AND ACCESSORIES			
ITEM TO BE USED	Manufacturer	Part Number	Comments
Encapsulation and Joint Seal (12 inch minimum width):			
	Canusa	Wrapid Seal / Wrapid Tape	
	CreteX	Wrap External Joint Seal	
	PSI	Boa Tape	
Frame and Cover (With "POLK COUNTY", "SANITARY", "FLORIDA" cast into the top of the cover):			
	US Foundry	USF 225-AS	Regular (4' Inside Dia.) Manholes
	US Foundry	USF 926	Hinged Cover and Frame Alternative for Regular Dia. Manholes – <u>Not for use in paved roadways.</u>

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	CertainTeed	Pamrex 24"	Hinged Cover and Frame Alternative for Regular Dia. Manholes – <u>Not for use in paved roadways.</u>
	US Foundry	USF 667-CR-XB	Large (5' and Larger Inside Dia.) Manholes
	CertainTeed	Pamrex 36"	Hinged Cover and Frame Alternative for Large Dia. Manholes – <u>Not for use in paved roadways.</u>
Manhole Insert (No Ventilation Hole)			
	Bay Area Plastics	Tight Seal Insert - Black	Polypropylene with 1/8" Minimum Continuous Polymer Thickness.
	USSI-USA	Inflow Defender - Black	HDPE with 1/8" Minimum Continuous Polymer Thickness.
	Inflow Systems	Inflow Shield	16 Gage Type 304 SS
Jointing Material			
	K.T. Snyder Co, Inc.	Ram-Nek	
Material – Concrete			
	Mack Precast		Precast
	Standard Precast		Precast
	Hanson Pipe & Product		Precast
	Oldcastle Precast		Precast
Pipe Seals, Force Main Entering Wet Well And/OR Valve Box			
	Link Seal	Model S-316 Link Seal Modular Seal	
Pipe Seals, Manhole – Gravity Less Than 12-inch			
	Atlantic Concrete	A-Lok (cast-in-place)	
	NPC	Kor-N-Seal Model WS	
Pipe Seals, Manhole – Gravity Greater Than Or Equal To 12-inch			
	Atlantic Concrete	A-Lok (cast-in-place)	
Surface Coatings – Exterior (Manholes, Wet Wells, and Valve Vaults)			
	Carboline	Bitumastic 300M	
	Conseal	CS-55	
Surface Coatings – Interior (Light Colors) (Manholes, Wet Wells, and Valve Vaults)			
	Sauereisen	SewerGuard 210	

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	Sauereisen	F-170	
	Kerneos Aluminates Technologies	Sewpercoat	
	CCI Spectrum, Inc.	Spectrashield	
	Strong Company	Strong-Seal Systems	
	Sherwin-Williams	Cor-Cote SC	Sewer Cote Epoxy
	Sherwin-Williams	Sherflex	Polyurethane Elastomer
	Raven Lining	Raven 404	
	Raven Lining	Raven 405	

Top Adjusting Rings (Use Must Be Approved In Advance By FDOT Or Polk County Transportation):

	Ladtech, Inc.		HDPE
	Cretex	Pro-Ring	Expanded Polypropylene (EPP)
			Reinforced Concrete

Lining Systems (Light Colors) (Master Manholes, Wet Wells, and Valve Vaults)

	AGRU Liner	HDPE Liner	Factory Installed
	GSE Studliner	HDPE Liner	Factory Installed
	GU Liner	Polypropylene (PP) Liner	Factory Installed

Wastewater Category 5 of 5: LIFT STATION MATERIALS AND ACCESSORIES

ITEM TO BE USED	Manufacturer	Part Number	Comments
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Odor Control System and Equipment:

	Premier Chemicals	Thioguard	
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Alarm Horn (AH)

	Edwards	870-N5	
	Wheelock	3IT-115-R	

Alarm Light (AL)

	American Electric	F32552	
	Red Dot	899B	

Block Walls - Anti-Graffiti Paint

	American Building	Polyshield Restoration	
	Richard's Paint	Professional Water Seal & Graffiti	
	Environmental Products	Graffiti-Proof	

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Control Panels (CP)		
	Unitron Controls, Inc.	
	Revere System	
Control Panel - Control Circuit Breaker		
	Square D	QOU120
Control Panel - Control Circuit Transformer		
	Square D	EO-18
Control Panel - Duplex Receptacle/GFI (DR)		
	Square D	GFSR-115-IC
Control Panel - Elapse Time Meter (EMT)		
	Engler	AC-200-10-NG7
	Hecon	TO621134
Control Panel - Electric Box Mounts		
	Unistrut	P1110T
Control Panel - Emergency Circuit Breaker (ECB)		
	Square D	
Control Panel – Enclosure (with the appropriate Arc Flash Label on Panel Door)		
	Hoffman	
	Tanco	
Control Panel - Explosion-Proof Seal- Off		
	OZ/Gedney	1.2-inch EY 200
Control Panel - Flasher (FL)		
	Sta-Con, Inc.	008-24-13SP
	SSAC	FS-126
Control Panel - Float Regulator (FR)		
	Roto-Float	
Control Panel - Fuses (F)		
	Bussmann	
Control Panel - Hand-Auto-Off Selector (HOA)		
	Square D	9001-SKS
Control Panel - Horn Silence Button (HSS)		
	Square D	9001-SKR-IU
Control Panel – Moisture and Temperature Failure Light (MT)		
	Dialco	803-1710
	LC & D	Little Light 930407X

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Control Panel - Motor Circuit Breaker (MB)			
	Square D		
Control Panel - Motor Starter (MS)			
	Square D		
Control Panel - Overload Heater (OL)			
	Square D		
Control Panel - Phase Monitor (PM)			
	Diversified		
Control Panel - Pilot Light (PL)			
	Dialco	803-1710	
	LC & D	Littlelight 930407X	
Control Panel - Pump Automatic Alternator (PAA)			
	MPE	008-120-13N	
	Diversified	ARA-120-ACA	
Control Panel - Relay (R)			
	Porter Brumfield	KRPA-11AN	
	Eagle Signal	22 Series	
Control Panel - Resistor (RE) – 5-watt, 2500 ohms:			
	Rockwood		
Control Panel - Run Indicator (RL)			
	Dialco	803-1710	
	LC & D	Littlelight 930407X	
Control Panel - Supplemental Protector Breaker – 3-pole, 1-amp			
	Square D	MG24532	
Control Panel - Surge Protector (UL 1449, 2nd Edition Listed And Labeled), (NEMA LS-1 And IEEE C62.41 Tested) With NEMA 4X Enclosure, Internal Fusing, Voltage, and Phase To Match Service, Rated 80,000-amps Per Mode (Minimum 10-Year Warranty).			
	Innovative Technologies	PTX 160	
	Surge Suppressors, Inc.	LSE Series or SHL	
	Current Technology	XN80	
	Joslyn	ST 160 Series	Total Protection Solutions
Control Panel - Terminal Strip (TS)			
	Square D	9070GR6	
Flow Meters With Replaceable Sensors (Pipe Length Before And After Meter Is To Be 5 Times The Diameter Of The Pipe.)			

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	Yokogawa		
	Endress Hauser		
	Foxboro		
Generator Circuit Breaker			
	Square D		
Generator Fuel Tanks (Double Walled And For Fixed Generator Systems Only)			
	Convault		
	Phoenix		
Generator Systems, Fixed			
	Caterpillar/Olympian		
	Onan (Cummins)		
	Kohler		
	Tradeswinds		
Generator Systems, Portable			
	Kohler		
	Caterpillar/Olympian		
	Onan (Cummins)		
Generator Receptacle (GR)			
	Russelstoll	JRSB 1044 FR (100 amp)	For ≤ 25 Hp Pumps
	Russelstoll	JRSB 2044 (200 amp)	For 25 Hp > Pumps
Generator Transfer Switch			
	Onan		
Human Machine Interface (HMI)			
	Maple Systems	HMI 5070TH	
Main Service Disconnect Breaker			
	Square D		
Main Circuit Breaker (MCB)			
	Square D		
Main Circuit Transformer (MCT)			
	Square D	500SV43F	
Odor Control Monitoring Instrument			
	Precision Control	Model SRC-1	
Pressure Gauges:			
	Ashcroft	40-1009 0-60 PSI	
	H.O. Trerice Company	700 LFSS-G-40-FSL 250 PSI 100	

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	Winter Gauges	Q770 0-60 PSI	
	Palmer Gauges	45-S-W-Q-60#-J	
Pressure Gauges (Diaphragm Seals)			
	Ashcroft	Type 200	
	H.O. Terrice	01FF	
	Winters	D950 top D954 Bottom	
Pressure Transducers- 0 To 15 psi Range			
	Blue Ribbon Ind.	Birdcage Pressure Transducer	
	KPSI	750-14D-40015	
	Endress Hauser	FMX 175	
SCADA Panels Type 1			
	Motorola	ACE 3600 RTU	1 each
	Motorola	ACE 3600 DI Module	1 each
	Motorola	ACE 3600 6AI Module	1 each
	Eurobex	NEMA 4X Enclosure 5412 ESSP302412	1 each
	Motorola	ACE 3600 Analog Output	1 each
	Microswitch/Honeywell	Tamper Switch 1DM401	1 each
	Antenex	Type N Antenna Connectors (CN400S)	1 each
	Antenex	Phantom 3db Dome Antenna (TRAB8063)	1 each
	Antenex	Dome Mount with 17' cable (MAB8)	1 each
	Phoenix Instrument	PC21 Plugtrab Surge Arrestor (Analog I.O.)	5 each
	Square D	QOU 10 AMP Breaker	2 each
Surge Suppressors for SCADA 120VAC TVSS (select either a, b, or c below)			
	a) Surge Suppression Inc	SSLA1S1	
	b) PSI	120HWCP-15	
	c) Innovative Technology	XT40-1P101	
Application information only additional materials			
Supplemental Grounding Systems, Rods, Cadwelds & Cable			
SCADA Panels Type 2			
	Motorola	ACE 3600 RTU	1 each
	Motorola	ACE 3600 DI Module	1 each
	Motorola	ACE 3600 6AI Module	1 each

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	Eurobex	NEMA 4X Enclosure 5412 ESSP302412	1 each
	Microswitch/Honeywell	Tamper Switch 1DM401	1 each
	Antenex	Type N Antenna Connectors (CN400S)	1 each
	Antenex	Phantom 3db Dome Antenna (TRAB8063)	1 each
	Antenex	Dome Mount with 17' cable (MAB8)	1 each
	Square D	QOU 10 AMP Breaker	2 each
	Allen Bradley	24vdc relay and base 700- HK36Z24	1 each
	Surge Suppressors for SCADA 120VAC TVSS (select either a, b, or c below)		
	a) Surge Suppression Inc	SSLA1S1	
	b) PSI	120HWCP-15	
	c) Innovative Technology	XT40-1P101	
	Application information only additional materials		
	Supplemental Grounding Systems, Rods, Cadwelds & Cable		
	SCADA Panels Type 3		
	Motorola	ACE 3600 RTU	1 each
	Motorola	ACE 3600 Module (8Di,2Do,2Ai)	3-each
	Eurobex	NEMA 4X Enclosure 5412 ESSP363012	1 each
	Motorola	ACE 3600 Analog Output	1 each
	Microswitch/Honeywell	Tamper Switch 1DM401	1 each
	Antenex	Type N Antenna Connectors (CN400S)	1 each
	Antenex	Phantom 3db Dome Antenna (TRAB8063)	1 each
	Antenex	Dome Mount with 17' cable (MAB8)	1 each
	Phoenix Instrument	Plugrab Surge Arrestor	4 each
	Square D	QOU 10 AMP Breaker	2 each
	Allen Bradley	24vdc relay and base 700- HK36Z24	5each
	Surge Suppressors for SCADA 120VAC TVSS (select either a, b, or c below)		
	a) Surge Suppression Inc	SSLA1S1	
	b) PSI	120HWCP-15	

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	e) Innovative Technology	XT40-1P101	
	Application information only - additional materials		
	Supplemental Grounding Systems, Rods, Cadwelds & Cable		
Sluice Gate For Wet Well			
	BNW	Model 77	316 ss
	Fontaine	Model 20	316 ss
Submersible Pumps With Enclosed Impellers			
	Flygt		
	Hydromatic		
Check Valves 4-inch And Larger (8 mil Epoxy Lined)			
	M & H	159	
	Mueller	Series 2600 (Up to 12 inches)	
	Mueller	Series 8001 (16" and Larger)	
	American Flow Control	Series 600 or 50 line	
Cushion Check Valves (Oil Filled)			
	GA		
	APCO		
	CCNE		
Variable Frequency Drives			
	Square D		
	Allen-Bradley		
	General Electric		
Variable Frequency Motors			
	U.S. Motors	Rated for inverter duty only	
	Baldor	Rated for inverter duty only	
	Reliance	Rated for inverter duty only	
	Dayton	Rated for inverter duty only	
Wet Well and Valve Vault Access Frames and Covers (A minimum non-traffic bearing load rating of 300 PSF or, if subject to vehicular traffic, a H-20 traffic bearing load rating)			
	Halliday Products		
	Bilco Company		
	USF Fabrication, Inc.		
Lift Station Wet Well Fall Protection System			
	Halliday Products	Retro Grate Fall Thru Protection System	
	Bilco	Fall Protection Grating System	
	USF Fabrication, Inc.	Hinged Hatch Safety Grate	
	USF Fabrication, Inc.	Hatch Net System	

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Pad Locks (Two CK-RCG Keys must be provided with each Pad Lock)			
	Videx CyberLock	PL-01KR, PL-02KR, PL-03KR (Key Retaining)	CL-6P3WR (Installed in Schlage Pad Lock w/ 1" or 2" or 3" SS Shackle, as appropriate for each application)
	Videx CyberLock	PL-01, PL-02, PL-03 (Non-Key Retaining)	CL-6P3WR (Installed in Schlage Pad Lock w/ 1" or 2" or 3" SS Shackle, as appropriate for each application)
	Videx CyberLock	CKS-010 (Recharging Station) and AK-01 (Authorizer Keyport)	Both items shall be installed as part of any building constructed for PCU.
Uninterruptable Power Supply (APS)			
	Tripp Lite	3000 VA	Standard Size
	Tripp Lite	2000 VA	For Use In Compact Control Panel Situations

CHAPTER 5 WASTEWATER

**Section 550-E Wastewater Force Main Pressure Test Form
 (PVC and Ductile Iron Pipe)**

December 2010

Project: _____
 PCU Project No.: _____

Procedures for conducting this test shall be in strict conformance with AWWA standard C600, latest revision. Maximum allowable leakage shall be: $L = ND(P)^{1/2}$
7.400

Deleted: Maximum allowable leakage shall be: $L = SD(P)^{1.25}$
 133,200

Where:

L = maximum allowable leakage, measured in gallons per hour

N = number of joints in the tested line (where a pipe joins a pipe or a pipe joins a fitting)

D = nominal diameter of pipe, measured in inches

P = test gauge pressure, measured in pounds per square inch (minimally 150 psi)

(For a 2-hour test at 150 psi, equation simplifies to: $L = ND \times 0.00331$)

Deleted: (For a 2-hour test at 150 psi, equation simplifies to: $L = SD \times 0.000092$)

Deleted: S = length of pipe being tested, in feet

TESTING PARAMETERS & SYSTEM INFORMATION

Test Pressure (minimally 150 psi):				psi
Beginning Test Pressure:		psi	Ending Test Pressure:	
				psi
Test Duration (minimally 2 hours):		Hours:		
Date of Test:				
Time at Start of Test:		Time at End of Test:		
Test Segment Location:				

Pipe Type	Diameter, inches	Length, feet	Number of Joints	Max. Leakage for 2 Hour Test, gallons
Total Maximum Allowable Leakage, gallons:				
Total Actual Leakage, gallons:				

CONTRACTOR & INSPECTOR PERSONNEL INFORMATION

	Contractor	Inspector
Signature:		
Printed Name:		
Company Name:		
Phone Number:		
Date:		

- **Standards and Specifications Manual (6B)**
 - **Chapter Six (6): Reclaimed Water**
 - **Section 650-B: Approved Materials Checklist**
 - **Section 650-C: Reclaimed Water Pressure Test Form**

CHAPTER 6
Section 650-B

RECLAIMED WATER
Approved Materials Checklist

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PLEASE TYPE OR PRINT CLEARLY IN BLACK INK

Project Name: _____

PCU Project File Number: _____

Contractor's Name: _____

Contractor's Address: _____

Contractor's Signature: _____

Engineer's Name: _____

Engineer's Address: _____

PCU Reviewer: _____	Date: _____
Approved: _____	Denied/Resubmit: _____
Comments:	

With the submission of this document, the CONTRACTOR understands that the use of the following selected items, as individually indicated by the use of an "X", is mandatory.

Substitutions using other items contained within this Checklist shall be initiated by the CONTRACTOR submitting a revised Checklist to PCU for its review and approval at least 10 calendar days in advance of need.

It is also understood by the CONTRACTOR that PCU shall reject materials and products not in accordance with this document and the MANUAL. Any material or product not contained within this Checklist shall be approved in advance by the Utilities Code Committee in accordance with the provisions of the Utilities Code.

Shop drawings shall be required for all structures and similar items not contained within this checklist, such as manholes, wet wells, and other castings.

CHAPTER 6

RECLAIMED WATER

Section 650-B

Approved Materials Checklist

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Four (4) sets of the CONTRACTOR's and ENGINEER's executed APPROVED MATERIALS CHECKLIST and any necessary shop drawings shall be submitted to PCU for its use and approval, plus the number of sets needed for the CONTRACTOR use.

Ordering materials and products without specific written approval from PCU of the submitted checklist and shop drawings is NOT recommended and is done at the CONTRACTOR's sole expense and responsibility.

NOTE: The latest changes approved by the Utilities Code Committee are indicated by "underlining" and deleted items by "~~strikethroughs~~".

Reclaimed Water Category 1 of 5: VALVES AND ACCESSORIES			
ITEM TO BE USED	Manufacturer	Part Number	Comments
Automatic Combination Air / Vacuum Release Valves:			
	ARI	D-040-PT02, ,	Combination
	ARI	D-21-PT01 (1"), D-021-PT02 (2")	Combination
	ARI	S-21-PT01 (1"), S-021-PT02 (2")	Air Release Only
	Val-Matic	VM-38	
	Val-Matic	VM-45	
Air / Vacuum Release Valve Enclosure (Horizontal Venting and Pantone 522-C Purple):			
	Water Plus	No. 40 (171730)	
	Channell	BPH 1730	
	Hydro-Guard	Safety-Guard 15100 Low Profile or 02100	
Air / Vacuum Release Valve Vault Frame And Cover:			
	US Foundry	USF-679-BK-M	
	CertainTeed	Pamrex 36"	Alternative – <u>Not to be used in paved roadways.</u>
Blow Off Valve:			
	Hydro Guard	HG-2 Low Profile	Automatic Blow Off
	Water Plus	Series VB 2000	
Butterfly Valves 42-inch And Larger: (8 mil Epoxy Coated And Lined (AWWA)):			
	M & H	4500	
	Mueller/Pratt	Linseal III / BV Ground Hog	

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Gate Valves 16-inch Through 48-inch (Resilient Seated Only With Side Actuators):			
	American Flow Control	Series 2500	
	Mueller	Series A-2361	
	M & H	Series 4067	
Gate Valves 12-inch And Smaller (Resilient Seated Only):			
	American Flow Control	Series 2500	
	M & H	Series 4067	
	Mueller	Series A-2360	
	Clow	Series F-6100	
Tapping Valves (Resilient Seated Only):			
	American Flow Control	Series 2500	
	M & H	Series 4751	
	Mueller	Series T-2360 & T-2361	
	Clow	Series F-6114	
Test Station Box For Buried Valves:			
	Bingham/Taylor	P200NFG2T	
Valve Boxes With Lids (5/4 -Inch, ASTM A48 30B Cast or Ductile Iron, With "RECLAIMED" cast into the lid top):			
	Bingham / Taylor Foundry	4905-X, 4905, 4904L	
	Tyler	Series 6850	
	American Flow Control*	Trench Adapter Models 1 through 9	* For mains that have valve nuts that are 6' or deeper.
	Sigma	VB261, VB262, VB264, VB4650W	
	Mueller	MVB	Use w/ AJBV-4" Locking Bolt

Reclaimed Water Category 2 of 5: SERVICE MATERIALS			
ITEM TO BE USED	Manufacturer	Part Number	Comments
Angle Stops Ball Type (1-inch And 2-inch CTS OD Tubing By 5/8-inch By 3/4-inch And 2-inch Meter):			
	Ford	BA43-242W, BFA43-777W	
	Mueller	P24258, P24276	
	McDonald	4642B-22, 4602B-22	

CHAPTER 6

RECLAIMED WATER

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Angle Stops Ball Type (3/4-inch FIP By 5/8-inch By 3/4-inch Meter):			
	Ford	BA13-232W	
	Mueller	B24265R	
	McDonald	4604B	
Brass Service Saddles (Service Saddles Can Be Hinged Or Bolt Controlled OD Saddles To Be Used On C-900 And IPS OD PVC Pipe):			
	Ford	Series S-70, S-90	
	Mueller	Series S-13000 / H-13000	
	McDonald	3801, 3891	
Corporation Stops Ball Type (1-inch and 2-inch With AWWA Iron Pipe Threads Only/Pack Joint Outlet For CTS):			
	Ford	FB1000	
	Mueller	P25008	
	McDonald	4701B-22	
Curb Stops Straight Valves (Curb Stop To Be Ball Type, Reduced Port FIP By FIP 3/4-inch By 3/4-inch):			
	Ford	B11-233W	
	Mueller	B-20200-R	
	McDonald	6101W	
Curb Stops Straight Valves (Ball Type Compression By Meter, 1-inch And 2-inch CTS OD Tubing By 5/8-inch By 3/4-inch Meter):			
	Ford	B43-342W, BF43-777W	
	Mueller	P24350, B24337, B24335	
	McDonald	6101MW-22	
Curb Stops Straight Valves (Ball Type Compression By Compression):			
	Ford	BA44-444W	
	Mueller	P25146	
	McDonald	6101MW-22	
Polyethylene Tubing (Pantone 522-C Purple With UV Protection [SDR-9] 1-inch And 2-inch Only):			
	Endot	PE-4710 EndoPure	
	Endot	PE-4710 EndoTrace	Alternative Pipe and Tracer Wire Combo
	Charter Plastics	PE-4710	
	ARNCO	PE-4710 Perma-Guard	
	ARNCO	PE-4710 Perma-Find	Alternative Pipe and Tracer Wire Combo
Service Saddles (Epoxy Or Nylon Coated Stainless Steel 18-8-Type 304 Straps, Iron Pipe Threads – 2-inch To Be Iron Pipe Threads Controlled OD Saddles To Be Used On C-900 And IPS OD PVC Pipe, Double Straps To Be 2-inch Minimum Width Each.):			
	Ford	Series FC202	

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	JCM	Series 406	
	Mueller	DR2S, DR2SOD	
	McDonald	3835, 3855	
	Romac	202N-H	For Use With HDPE Pipe

Y Branch (1-inch By 2-inch):

Deleted: 3/4

	Ford	U-48-43	
	Mueller	P15363	
	McDonald	08U2M	

Y Branch Assemblies With Angle Ball Valves (1-inch By 2-inch):

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	Ford	UVB43-42W	
	Mueller	P15363-05	
	McDonald	09U2BW	

Meter Boxes w/ Plastic Lids (Pantone 522-C Purple, HDPE, with English and Spanish Identification and Warning Wording plus International "Do Not Drink" Symbol on Top):

Deleted: Cast Iron

	<u>Carson PolyPlastic</u>	<u>1015-12 (Box)</u>	<u>1015-5 (Lid)</u>
	<u>DFW Alliance</u>	<u>DFW 1200.12 (Box)</u>	<u>DFW 1200.5R (Lid)</u>
		<u>DFW 1200.12.5R (Combo Unit)</u>	

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- Deleted: DX1015-12
- Deleted: Drexol
- Deleted: DX1015-18
- Deleted: Pentek
- Deleted: 170111
- Deleted: Equivalent to Drexol 12"
- Deleted: Pentek
- Deleted: 194525
- Deleted: Equivalent to Drexol 18"

Reclaimed Water Category 3 of 6: PIPE MATERIAL

<i>ITEM TO BE USED</i>	Manufacturer	Part Number	Comments
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Casing Spacers (All Sizes) Stainless Steel With Vinyl Runners:

	Cascade	Series CCS / CCPS / AZ	
	PSI	Series S-G-2	
	PSI-Ranger	Ranger II	
	RACI	S/T, F/G, P/Q, M/N, E/H	
	CCI	CCS8, CCS12	
	Advance Systems		

Ductile Iron Pipe Cement Lined (4-inch To 12-inch = PC 350, 16-inch To 20-inch = PC 250, 24-inch = PC 200, 30-inch To 64-inch = PC 150) (DI Flanges As Applicable, AWWA C153):

	American		
	Clow		
	Griffin		
	McWane		

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	US Pipe		
Paint: Aerial Pipe, Fittings, And Valves (Field and Factory Primer):			
	Color Wheel	635 Primer Red	
	Glidden	Alkyd Metal Primer	
	Porter/International	286 U-Primer	
	Tnemec	37H-77 Chem-Primer	
	Wasser	Ferro Clad Primer	
Paint: Finish (Exterior):			
	Color Wheel	600 Alkyd Enamel	
	Glidden	Alkyd Industrial Enamel	
	Porter/International	2749 Alkyd Gloss	
	Tnemec	Tnemec - Gloss 2H	
PVC (Pantone 522-C Purple) 4-inch Through 12-inch Pipe (AWWA C-900, DR18) and 16-inch and larger pipe (AWWA C-905 or C-909, DR 25):			
	Bristolpipe 4" to 12"		
	Certainteed 4" to 12"	Certa-Lok	
	Diamond Plastic		
	<u>(Out of Business)</u>		
	Ipex		
	J-M Manufacturing		
	National Pipe		
	NAPCO		North American Pipe Company
	Upinor ETI 9		
	Underground Solutions	Fusible PVC	<u>For Horizontal Directional Drill Use Only</u>
HDPE Pipe DR11 (Pantone 522-C Purple Striped):			
	Chevron/Phillips	Performance Pipe / ISCO Pipe	
	CSR	Polypipe/Charter Plastics	
	ARNCO		
	J-M Eagle		
	National Pipe		
Reclaimed Water Main Identification Tape (Pantone 522-C Purple, 6-Inches Wide, 2-Inches High Black Lettering, Adhesive Backed):			
Buried Reclaimed Water Main Warning Tape (Pantone 522-C Purple, 3-inches Wide, 1-Inch High Black Lettering, Non-Adhesive Backed):			

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Reclaimed Water Locating Wire (Single Strand 14-Gauge Solid Copper Wire with Pantone 522-C Purple Colored Insulated Covering):			
	Copperhead	Reinforced Tracer Wire	Alternative
Locating Marker Systems (Reclaimed Water) (Pantone 522-C Purple In Color):			
	3M	Scotch Mark EMSII Electronic Marker Purple Locator #1265	
	3M	Scotch Marker Electronic Ball Marker #1404	
Curb and Pavement Markers (Pantone 522-C Purple in Color, Imprinted With The Words "POLK COUNTY UTILITIES" And "CALL 811 BEFORE YOU DIG" With "RECLAIMED WATER SERVICE" or "RECLAIMED WATER VALVE" As Applicable):			
	Rhino	ATAGNCT-C (Custom Imprinting)	New Construction
	Rhino	ATAGRFT-C (Custom Imprinting)	Retrofit to Existing Improvements
	DAS Manufacturing	Reflective Duracast Style (Custom Imprinting)	New Construction or Retrofit

Reclaimed Water Category 4 of 6: PIPE FITTINGS			
ITEM TO BE USED	Manufacturer	Part Number	Comments
Expansion Joints:			
	EBAA Iron		
	Metraflex		
Fittings C153 SSB / C110 Flange (Cement Mortar Lined and Asphaltic Coated In Accordance With AWWA C104) (Outside Surfaces Shall Be Prime Coated Only If Located Aboveground And Painted):			
	American		
	Union/Tyler		
	US Pipe		
	Sigma		
	Star Pipe		
Restrained Joints - Ductile Iron Pipe:			

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	American	Fast Grip Gasket Flex Ring Field Flex Ring Lok Ring	
	EBAA Iron Inc.	Mega-lug Series 1100 Series 1700 Bell Restrainer Series RS-3800 Restrainer - sleeve included	
	Sigma	One LOK SLD	
	Sigma	LOK Series PVP and PVPF	
	Star	Stargrip Series 3000, 3000OS, 3100P & 3100S Flange Adapter Series 200 & 400 Retainer Gland Series 600 Adapter Flange Series 3200 Series 4000 & 4100P Series 3200 & 4200 Series 1000, 1100, & 1200 Flange Series 3200 & 4200 Adapter Flange Series 200 & 400 Star Flex Series 5000, 5100, & 5200	
	Tyler/Union	Tuf Grip TLD Series	
Restrained Joints - PVC Pipe:			
	EBAA Iron Inc.	Mega-lug Series 2000PV Series 1500 & 1600 Bell Restrainer (4-inch to 12-inch) Series RS-3800 Restrainer – sleeve included	
	JCM	620 Sur-Grip Bell Joint 621 Sur-Grip Bell Joint	
	Uni-Flange/Ford	1350 Bell Restrainer 1360 Bell Restrainer 1390 Bell Restrainer 900 Adapter Flange 1300 Fitting Restrainer 1500 Series	
	Sigma	One LOK SLC	
	Sigma	PV LOK Series PVP and PVPF	

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	Star	Stargrip PVC Series 4000 PVC Harness Series 1100 & 1200	
	Tyler/Union	Tuf Grip TLP Series	
Tapping Sleeves (For All Taps On IPS OD PVC pipe, Including Size On Size (18-8 Type 304 Stainless Steel Body, Flange, And Bolts), Flange To Accept Standard Tapping Sleeves):			
	Ford	Series FTSS	
	JCM	Model 432	
	Mueller	Series H-304 S/S	
	CST	EX	
Tapping Sleeves (Mechanical Joint For All Taps On Cast Iron, Ductile Iron, PVC-900 & AC Pipe, All Taps Including Size On Size):			
	American Flow Control	Series 2800	
	Mueller	Series H-615, H-616, H-619	
	JCM	Model 432	
Tapping Sleeves (Fabricated Steel, Mechanical Joint, Fusion Bonded Epoxy Coated):			
	JCM	Series 414	

CHAPTER 6 RECLAIMED WATER

Section 650-C Reclaimed Water System Hydrostatic Pressure Test Report (PVC & DIP Pipe) December 2010

Project:
 PCU Project No.: _____

Procedures for conducting this test shall be in strict conformance with AWWA standard C600, latest revision. Maximum allowable leakage shall be: $L = ND(P)^{1/2}$
7.400

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 133,200

Where:

- L = maximum allowable leakage, measured in gallons per hour
- N = number of joints in the tested line (where a pipe joins a pipe or a pipe joins a fitting)**
- D = nominal diameter of pipe, measured in inches
- P = test gauge pressure, measured in pounds per square inch (minimally 150 psi)

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TESTING PARAMETERS & SYSTEM INFORMATION

Test Pressure (minimally 150 psi):			psi
Beginning Test Pressure:		Ending Test Pressure:	psi
Test Duration (minimally 2 hours):		hours	
Date of Test:			
Time at Start of Test:		Time at End of Test:	
Test Segment Location:			

Pipe Type	Diameter, inches	Length, feet	Number of Joints	Max. Leakage for 2 Hour Test, gallons
Total Maximum Allowable Leakage, gallons:				
Total Actual Leakage, gallons:				

CONTRACTOR & INSPECTOR PERSONNEL INFORMATION

	Contractor	Inspector
Signature:		
Printed Name:		
Company Name:		
Phone Number:		
Date:		

- **Cross Connection Control Policy Manual (6C)**
 - **Appendix A-100: Approved Cross Connection Control Assemblies**

APPROVED CROSS CONNECTION CONTROL ASSEMBLIES LIST

APPENDIX A-100

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Only the assemblies listed below shall be utilized within or connected to a PCU potable water system.

Double Check Valve Assemblies (DCVA)



<u>Manufacturer and Model</u>	<u>Size</u>	<u>Orientation</u>
Wilkins 950 XL	.75"	Horizontal & Vertical Up
Wilkins 950 XL	1", 1.25", 1.50", 2"	Horizontal
Wilkins 950 XLD	.75"	Horizontal & Vertical Up
Wilkins 350 – OS&Y Valves	2.5", 3", 4", 6", 8", 10"	Horizontal & Vertical Up
Wilkins 350 – OS&Y Valves	12"	Horizontal
Wilkins 350 G	6"	Horizontal & Vertical Up

Reduced Pressure Principle/Reduced Pressure Detector Assemblies (RPPA/RPDA)

Wilkins 375 – OS&Y Valves	2.5", 3", 4", 6", 8", 10"	Horizontal
Wilkins 975 XL	.75", 1", 1.25", 1.5", 2"	Horizontal
Wilkins 975 XLSE	.75", 1", 1.25", 1.5", 2"	N & Z
Wilkins 975 XLSEU	.75", 1", 1.25", 1.5", 2"	N & Z
Wilkins 975 XLV	.75", 1"	N & Z

Double Check Detector Assemblies (DCDA)

Wilkins 350DA – OS&Y Valves	2.5", 3", 4", 6", 8", 10"	Horizontal & Vertical Up
Wilkins 350DA – OS&Y Valves	12"	Horizontal
Wilkins 350DAG – OS&&Y Valves	2.5", 3", 4", 6", 8", 10"	Horizontal & Vertical Up
Wilkins 350DAG – OS&Y Valves	12"	Horizontal

- **Water Conservation Manual (6F)**
 - **Section 1.4.5: System Deficiencies**
 - **Section 1.4.10: Institutional and Political Factors**
 - **Section 2.2.5: Increased Code Enforcement**
 - **Section 2.2.6: Leak Detection and Meter Testing/Replacement**
 - **Appendix A-100: Reference List**

1.4.5 System Deficiencies

When water use reports are found to be irregular, it is usually due to correlation discrepancies between well meters and the billing procedures. PCU continually reviews its billing system for coding errors to help alleviate the problem and they continually utilize Best Management Practices to reduce unaccounted for water loss in the field. While PCU is prompt in repairing leaks and faulty meters, staff has found that most unaccounted for water events are due to flushing reports that are not promptly submitted or never completed as well as unrecovered quantities from the issuance of credits to water accounts when customers have a line break or leak.

PCU is approaching leak detection and water use audits from two ways. The first is through PCU's Leak Detection and System Maintenance/Repair Program. The Operations and Maintenance Division handles leak detection on an operator detection or complaint basis only. PCU works quickly and diligently to repair any discovered leaks. Most work orders regarding leaks are generated by customer calls.

All meters for pipe sizes two (2) inches in diameter and greater are retrofitted by the Customer Services Section of PCU. ~~The Section calibrates large commercial meters annually, and replaces any meters which are reported inaccurate. Upon request, residential meters are audited and/or tested for accuracy. Daily reports on meters and readings are monitored for accuracy, if the reports reflect inconsistency, the meter is changed out. Residential meters are on a preventive maintenance program and are subject for change every ten (10) years.~~ Annually, commercial meters and water and wastewater plant meters are tested and calibrated. All services with cross connection control assemblies are tested once a calendar year. Defective meters are repaired and rebuilt or replaced. Unscheduled services are handled through work orders generated by customer requests.

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PCU has implemented an illegal connection detection program. Private developers originally owned many of the water systems currently owned by the PCU. Thus, specific information regarding the location of all main line connections is not available. It has been discovered that a number of these systems may have numerous unmetered connections. Also, with all of the on-going new development, tie-ins to the lines occur and often the water is used for site construction without being metered or paid for. PCU has instituted a program to detect "illegal" connections and seal them off. Water pumpage records can now be compared to the billing records. Individual systems with high unaccounted for water use are then systematically evaluated for unmetered connections.

withdrawal rates. EMPs have been developed for the NERUSA, NWRUSA, SERUSA and the CRUSA. An EMP for the SWRUSA is currently in development.

1.4.10 Institutional and Political Factors

The Polk County Building and Codes Division requires the guidelines established for municipality in the Florida Plumbing Code. Through the Comprehensive Plan and Land Development, the County promotes the use of water conserving plumbing fixtures and Florida-friendly landscaping practices. Water efficient landscaping and irrigation requirements for non-residential development were addressed in revisions to the Land Development Code in 2003. Subsequently in 2009, additional landscape and irrigation requirements were adopted and became applicable to single family residential lots as well.

Polk County has adopted a *Flood Plain Ordinance (No. 00-009 Land Development Code)* as required to participate in the National Flood Insurance Program (NFIP) administered through the Federal Emergency Management Act (FEMA). All development is required to receive the proper building and site alteration permits. All new structures are required to be placed above the base flood elevation (when the base flood elevation is known). The County is also a participant in FEMA's Community Rating System and has received a Class 7 Rating.

The County has in place a *Water Shortage Ordinance No. 92-35*, which states that PCU will follow water restrictions in place by the water management districts, dependent on region. This Ordinance was issued in October 1992. PCU issued an *Emergency Ordinance for Water Supply No. 00-25* in June 2000. This Ordinance consolidates the water restrictions by proclaiming all PCU customers be governed by only the rules established by SWFWMD for consistency. Polk County's *Year Round Water Conservation Measures and Water Shortage Ordinance (No. 04-07)*, approved on February 18, 2004, allows for improved enforcement of watering restrictions as set by the SWFWMD and allows for localized limits on the use of reclaimed water that could be the same as irrigation standards for potable water. This ordinance authorizes law enforcement officers and representatives of any agency from within Polk County to levy fines for violations. Sections 8 and 9 of Polk County Ordinance No. 04-07 were amended by Ordinance No. 09-050 providing a more expeditious and efficient means of administering the Water Shortage Ordinance. Currently, cases are handled by a Codes Enforcement Officer position funded by PCU and by Environmental Deputies from the

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and maps of the garden are displayed at public events through the County Extension office, at landscaping classes and during the Citizen's Academies held by Polk County Board of County Commissioners. As a picture is worth a thousand words, a live example speaks volumes in illustrating how beautiful and functional a Florida-Friendly garden can be to customers who may have preconceived ideas or bias to changing from a high-water use lawn. Details on different irrigation systems that would be appropriate in different microenvironments are also provided.

2.2.3 Conservation-Oriented Rate Structure

Upon implementation of the first adoption of water conservation rates in July of 2003, PCU noted an immediate reduction in per capita water use in all RUSAs. While there is still an increase of water use during the drier months, the relatively constant rolling annual average per capita water use indicates that the water conservation rate structure is helping to keep usage down overall, even during the dry months.

2.2.4 Evaluation of Codes, Regulations, and Ordinances

As supported by the District, the County has made significant advances in updating its Utilities Code, watering restriction regulations and landscape ordinance to help enforce our water conservation efforts. While these few examples are recent demonstrations, developing such tools for changing people's perspectives and habits on water use have been years in the making. Polk County Utilities will continue to review existing policies, codes and ordinances to keep pace with developing technology, new information and regulations, and results of collected data on older methodologies. These tools help policy-makers demonstrate where focus is needed and guide financial planning efforts to be more cost-effective. Without this, many of the water conservation programs in place for PCU would not have been possible.

2.2.5 Increased Code Enforcement

Enforcement of water use restrictions is outlined in Polk County Ordinance No. ~~04-07~~ and amended by Polk County Ordinance No. 09-050. Ordinance 09-050 authorizes law enforcement officers and other representatives as directed by the County Manager within Polk County to issue Written Warnings, First Violation (\$50.00), Second Violation (\$200.00), Third and Subsequent Violations (\$500.00), Gross Water Waste Violations (\$1,000.00). The Polk County Board of County Commissioners approved the establishment of a Code Enforcement Officer position, funded by Utilities, to enforce water use restrictions. The position has been filled and the individual began enforcement

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efforts on June 30, 2003. The local press has been providing significant coverage of our enforcement efforts in the NERUSA. In addition to the Code Enforcement Officer, the Polk County Sheriff's Office (PCSO) began enforcement of the District's water use restrictions beginning May 23, 2003. Citation reports have been linked to PCU's customer service consumption files for reporting of trends associated with those accounts receiving citations. Program analyses for the Codes Enforcement efforts show that the annual average daily flow savings are estimated to be 124 gallons per day per connection (more than 45,000 gallons per year per violation). For the PCSO violators, the annual average daily flow savings are estimated to be 193 gallons per day per connection (more than 70,000 gallons per year per violation).

2.2.6 Leak Detection and Meter Testing/Replacement

PCU has replaced all older-model residential water meters with Automated Meter Radio (AMR) reading devices. These AMR devices have the capability of detecting continuous water flow. When the meter detects a period of 24 hour continuous flow, and the meter continues to record these conditions, data is reported to PCU during the monthly meter reporting of the finding. This enables PCU to notify the consumer, in writing, that a leak and/or continuous flow has been detected. Additionally, residential meters are replaced every ten (10) calendar years during a preventative maintenance program for accuracy.

2.2.7 Water Policy Advisory Committee

The Polk County Board of County Commissioners (BOCC) appointed a volunteer citizen Water Policy Advisory Committee (WPAC) in 2001. This committee meets approximately every six weeks to advise the Board on water related issues. In addition to the development of a general County Water Policy, they have developed a more detailed Water Reuse Policy that has subsequently been adopted by the Commission. Since the adoption of this policy in early 2003, Polk County has commenced metering and charging for reclaimed water and has implemented a water shortage ordinance. The goals of the committee are summarized in the in the official Water Policy, which was adopted by the BOCC on December 17, 2003, and is included as an exhibit in the Water Conservation Plan. The Year Round Water Conservation Measures and Water Shortage Ordinance (Ordinance No. 04-07), approved on February 18, 2004, facilitates the enforcement of watering restrictions and limits the use of reclaimed water to the same irrigations standards for potable water.

The Water Policy Committee operates as a clearing house for the promotion of important resource management ideas and goals for Polk County. The effectiveness of such an

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Reference List

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- Chapter 40D-2, Florida Administrative Code, Water Use Permit Information Manual Part D – Requirements for the Estimation of Permanent and Temporal Service Area Populations, Effective January 20, 2009.
- Chapter 62-550, Florida Administrative Code, Effective September 18, 2007.
- 1994 Standard Plumbing Code (Amended by County Ordinance No. 98-02).
- Polk County Comprehensive Plan, Ordinance 92-36, as amended.
- Florida Building Code, 2007.
- Florida Statutes 373.0391 - Technical assistance to local governments, 2008.
- Florida Statutes 166.048 - Conservation of water; Xeriscape, 2008.
- Polk County Land Development Code, Ordinance 00-09, as amended.
- Polk County Ordinance 04-09
- Polk County Ordinance 04-80
- Polk County Flood Plain Ordinance (Section 630 of the Land Development Code)
- Polk County Water Shortage Ordinance No. 92-35, October 1992.
- Polk County Emergency Ordinance for Water Supply No. 00-25, June 2000.
- Polk County Year Round Water Conservation Measures and Water Shortage Ordinance (No. 04-07), February 2004.
- Polk County Ordinance 09-050
- Polk County Ordinance No. 03-21 the Utilities Code Ordinance, March 2003 (Repealed).
- Polk County Official Water Policy, December, 2003.
- Polk County Ordinance No. 99-80, December 1999.

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