

# Table of Revisions

COLLIER COUNTY UTILITIES STANDARDS MANUAL  
 TABLE OF REVISIONS TO DESIGN CRITERIA  
 SINCE SEPTEMBER 2007 UPDATE  
 COLLIER COUNTY PUBLIC UTILITIES ENGINEERING DEPARTMENT  
 AS OF 08/26/08

<b>CHANGES TO DESIGN CRITERIA – SECTION 1</b>				
Additions to text from Section 1 are shown in bold print, and deletions are shown with strike-through.				
Section	Sub-Section	Location	Revision	Date
1	1.2.2	Distribution System Layout: Edit the second paragraph on Page 3 with additional text:	<p>Generally, new potable water distribution systems shall be designed as “looped” systems to avoid dead ends. If changes in design during construction result in dead ends to any new or relocated mains (<del>except those serving a cul-de-sac</del>), such dead ends shall be connected to the nearest water main. In cases where no nearby water main is available, <del>dead end mains shall not exceed 300 feet in length and shall terminate in a hydrant or other flushing device approved by the County Manager or designee in accordance with F.A.C. Chapter 62-555.</del> <b>a County approved automatic flushing device shall be provided at each dead end of a water main and, if applicable, also near the mid-point of a looped water main unless the design engineer can provide information to confirm that the minimum residual chlorine will be maintained based on the predicted water consumption at the time of County acceptance of the water main. For phased projects, temporary automatic flushing devices can be relocated for future phases, if not conveyed to County.</b></p> <p><b>Installation of the automatic flushing devices shall be designed so as to prevent erosion of nearby areas as well as prevent silt and sediment transport.</b></p>	05/20/08
1	1.2.3	Pipeline Separation Criteria on page 4:	<p>First paragraph, revise second and third line text as follows: “...a horizontal distance of ten feet (10’) <del>in accordance with F.A.C. 62-555.314(5).</del></p> <p>Fifth paragraph, add text to the end of the paragraph as follows: “...County Utilities). <b>In the event the required separation is not technically sensible, a Deviation Request can be submitted to the COUNTY. Such request shall contain the minimum criteria identified in F.A.C. 62-555.314(5); however, these criteria alone are not justification for COUNTY approval of a Deviation Request.</b>”</p>	09/18/07
1	1.3	Conflict Crossings, page 5:	<p>Second sentence, revise text as follows:          "All fittings shall be adequately restrained using retainer glands, stainless steel rods, <del>EBA Iron Sales "Megalug," "Uni-flange," Romac Industries "Grip Ring," or Star restraint</del> <b>see County Approved Product List, Appendix F.</b></p>	07/15/08
1	1.6.1	Service Pipelines: Edit last three sentences in paragraph.	<p>"... shall be capped and marked with a magnetic marker (<b>see County Approved Product List, Appendix F</b>). <del>Markers shall be 3M markers or COUNTY approved equivalent.</del> Service pipelines shall be ..."</p>	07/15/08

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Section	Sub-Section	Location	Revision	Date
1	1.6.2	Water Meters: Insert paragraph into the beginning of the Section 1.6.2 on Page 7:	<b>"Water meters shall be properly sized, based on the total calculated service demand for water, according to the Collier County Water Meter Sizing Form. The properly sized water meter shall be installed according to specifications and standards. Any deviation from the determined meter size shall require an approved Deviation Request, if the meter is 2 inches or larger in size."</b>	01/31/08
1	1.6.2	Water Meters, Part 1.6.2: At the end of the third paragraph on top of page 8, add text:	<b>The water supply to any cooling tower(s) shall be measured by a separate, dedicated water meter. The water line from the dedicated water meter to the cooling tower(s) shall be used exclusively for the cooling towers.</b>	12/18/07
1	1.7	Air Release Assemblies:	Middle of paragraph, revise text as follows: "For all water or non-potable irrigation water mains fourteen inches (14") and smaller, a <del>GA Industries Figure 945 combination air valve shall be utilized</del> <b>see County Approved Product List, Appendix F.</b> "	07/15/08
1	2.1.4	Gravity Sewer Laterals:	Revise middle of paragraph as follows: "All sewer lateral ends shall be provided with a <del>3M or County approved equal</del> <b>magnetic marker, see County Approved Product List, Appendix F.</b> "	07/15/08
1	2.2.1	Pipe and Fitting Materials:	Revise fourth paragraph, last sentence, as follows: " <del>3M Brand</del> <b>Full range wastewater magnetic markers or COUNTY approved equivalent (see County Approve Product List, Appendix F)</b> shall be secured onto top of force main ..."	07/15/08
1	2.2.5	Air Release Assemblies:	Revise middle of paragraph as follows: "Air valves ( <b>see County Approved Product List, Appendix F</b> ) utilized on raw sewage facilities shall be designed and manufactured for use with domestic sewage. <del>The air valve shall be A.R.I. Model S-020 Air Release Valve.</del> "	07/15/08
1	3.1.1	Add Part 3, Electrical and Control Systems, to Section 1. Add Electrical and Control Material:	<b>All electrical devices such as motor starters, breakers, and control centers shall be manufactured to current NEMA standards. The construction of each device shall conform to the NEMA rating for the environment of that device.</b>  <b>All programmable logic controllers (PLC) shall be manufactured by Allen-Bradley. The PLC model for each specific application shall be coordinated with the Utilities Engineering Department.</b>	02/19/08

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**CHANGES TO TECHNICAL SPECIFICATIONS - SECTION 2, TABLE OF CONTENTS**

The most important revision to the technical specifications section of the Utilities Standards Manual is the numbering. The five digit format in use until now is from 1995 and was revised to six digits by the Construction Specifications Institute in 2004. This new format includes expanding 16 divisions into 50 divisions for greater detail. To keep up with industry best practices, the Utilities Standards Technical Specifications will be updated to the new six digit format shown below.

All references to technical specifications in the manual will be updated to the new numbers.

<b>Section 2</b>	<b>Old Number</b>	<b>Title</b>	<b>New Number</b>
<b>DIVISION 1 - GENERAL REQUIREMENTS</b>			
	01010	Summary of Work	011000
	01026	Measurement and Payment	012000
	01045	Connections to Existing Systems	020500
	01051	Lines and Grades	022100
	01090	References	014200
	01400	Quality Control	014500
	01500	Construction Facilities and Temporary Controls	015000
	01510	Pre-Construction Audio-Video Recording	022200
	01570	Traffic Regulation and Public Safety	015526
	01600	Material and Equipment	016100
	01710	Cleaning	017423
	01730	Operation and Maintenance Manuals	017823
	01750	Project Record Documents	017839
<b>DIVISION 2 - SITEWORK</b>			
	02050	Demolition	024100
	02110	Site Clearing	017416
	02151	Shoring, Sheeting and Bracing	314000
	02210	Pipe Removal and Abandonment	330520
	02222	Excavation – Earth and Rock	312316
	02223	Backfilling	312323
	02226	Jacking, Augering and Mining	330523.16
	02230	Roadway Crossings by Open Cut	330201
	02275	NPDES Requirements for Construction Activities Impacting More Than One Acre	014127
	02276	Temporary Erosion and Sedimentation Control for Construction Activities Impacting Less Than One Acre, including Construction Requiring Dewatering	015713
	02300	Horizontal Directional Drilling	330523.13
	02400	Restoration by Sodding or Seeding	329200
	02523	Sidewalks, Driveways and Curbs	321300
	02530	Groundwater Control for Open Cut Excavation	312319
	02575	Pavement Repair and Restoration	320117
	02607	Sewer Manholes	333913
	02608	Concrete Coatings	099723
	02620	High Density Polyethylene (HDPE) Pipe and Fittings	330502
	02622	Polyvinyl Chloride (PVC) Pipe and Fittings	330503
	02630	Ductile Iron Pipe (DIP) and Fittings	330504

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<b>Section 2</b>	<b>Old Number</b>	<b>Title</b>	<b>New Number</b>
	02645	Hydrants	331619
	02650	Laying and Jointing Buried Pipelines	330518
	02675	Disinfection	025400
	02676	Leakage Tests	022501
	02700	Irrigation Pond Liner	334713
	02830	Chain Link Fencing and Gate	323113
	02999	Miscellaneous Work and Cleanup	017300
<b>DIVISION 3 - CONCRETE</b>			
	03100	Concrete Formwork	031100
	03200	Concrete Reinforcement	032000
	03310	Concrete, Masonry Mortar and Grout	033100
	03410	Precast Concrete Structures	034100
<b>DIVISION 5 – METALS</b>			
	05540	Metal Castings	055600
<b>DIVISION 13 - SPECIAL CONSTRUCTION</b>			
	13510	Pumping Stations	333200
	13511	Televising and Inspection of Gravity Sewer Systems	330130.16
<b>DIVISION 15 - MECHANICAL</b>			
	15100	Water Valves and Appurtenances	331200
	15110	Wastewater Valves and Appurtenances	333313

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<b>CHANGES TO TECHNICAL SPECIFICATIONS – SECTION 2</b>				
Additions to text from Section 2 are shown in bold print, and deletions are shown with strike-through.				
Section	Sub-Section	Location	Revision	Date
2	01750	Project Record Documents: Paragraph 3.2.B.4 on page 2: Revise text.	1. Files shall be also submitted in <b>two digital file formats, specifically</b> Drawing File (DWG) format in AutoCAD Release 2004 or later version <b>as well as PDF format (latest version).</b>	04/15/08
2	02226	Jacking, Augering, and Mining: 3.1: Revise text.	B.1. Use <del>Cascade</del> Stainless Steel Casing Spacers ( <b>see County Approved Product List, Appendix F</b> ) <del>or County approved equal,</del> being on center and restrained as the preferred method for installing the carrier pipe. ... After the carrier pipe has been tested for leakage, block the casing ends with either an 8" wall of brick masonry with a weep hole installed near the bottom of each wall or <del>Cascade Model CCES</del> <b>casing spacer</b> end seals ( <b>see County Approved Product List, Appendix F</b> ) with stainless steel bands. ...	07/15/08
2	02607	Sewer Manholes: 2.1: Revise text.	A. <b>See County Approved Product List, Appendix F, for acceptable manufacturers of plastic joint sealing compound and sewer manhole frame and covers are listed below. Other manufacturers of equivalent products may be submitted.</b>  <ol style="list-style-type: none"> <li>1. <b>Preformed Joint Sealing Compound:</b> <ol style="list-style-type: none"> <li>a. <del>Ram-Nok, as manufactured by K.T. Snyder Company, Inc., Houston, TX</del></li> <li>b. <del>Kent Seal, as manufactured by Hamilton Kent, Toronto/Ontario Canada</del></li> </ol> </li> <li>2. <del>Frame and covers as manufactured by U.S. Foundry, 420-C-ORS.</del></li> </ol>	07/15/08
2	02607	Sewer Manholes: 2.2: Revise text.	J. Inflow Protectors: In all manholes, install an inflow protector manufactured from a high-quality 304 stainless steel with a consistent thickness of not less than 18 gage ( <b>see County Approved Product List, Appendix F</b> ). ... <del>The inflow protector shall be as manufactured by Sewer Shield, Inc., Maitland, FL, or an approved equal.</del>  K. Chimney Seals: Install a minimum of two (2) precast concrete or HDPE riser rings with <del>Gretex, (or County approved equal)</del> <b>a chimney seals(see County Approved Product List, Appendix F)</b> between manhole and cast iron frame.	07/15/08

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2	02607	Sewer Manholes: 3.1: Revise text.	C. Joining Manhole Sections: Join precast sections using <del>Ram-Nek or Kent-Seal</del> plastic joint sealing compound ( <b>see County Approved Product List, Appendix F</b> ) and trimmed prior to grouting.	07/15/08
2	02622	Polyvinyl Chloride (PVC) Pipe and Fittings: 1.3: Revise text.	B. Force Main Pipe - ... <b>Joint restraint devices</b> shall be provided for horizontal or vertical alignment changes using uni-flange type collars, epoxy coated, with high strength, <b>and</b> low alloy hardware ( <b>see County Approved Product List, Appendix F</b> ), <del>EBAA "Megalug," "Uni-flange," Romac "Grip Ring," Sigma, or Star restraint.</del>	07/15/08
2	02622	Polyvinyl Chloride (PVC) Pipe and Fittings: 2.1: Revise text.	L. Restraining Devices: <b>Joint restraining joints devices (see County Approved Product List, Appendix F)</b> shall be placed at all bends, tees, plugs, reducers, and other fittings to provide lateral support, and shall conform to the Collier County Standard Details. Concrete thrust blocks shall only be utilized if approved by Collier County Utilities.  <del>1. Joint restraint devices for ductile iron mechanical joint fittings to PVC pipe shall be EBAA Iron Sales, Series 2000PV, Uni-flange, Sigma, Star or Romac Industries.</del>  <del>2. Bell joint restraint devices for PVC push joint pipe shall be EBAA Iron Sales, Series 1600 for C900 pipe and Series 2800 for C905 pipe or approved equal.</del>	07/15/08
2	02630	Ductile Iron Pipe (DIP) and Fittings: 2.1: Revise text.	B. Protective Lining for Force Mains and Sewers: Where lining is shown, specified or required, for the protection of pipelines carrying sewage from corrosive gases, line the pipe using protective ceramic epoxy coating or polyethylene lining ( <b>see County Approved Product List, Appendix F</b> ) in accordance with the manufacturer's written instructions. For ceramic epoxy lining, abrasive blast clean pipe and fittings to a near white surface to SSPC SP-10 and provide 40 mils minimum of dry film thickness of ceramic epoxy lining <del>using Protecto 401 coating as manufactured by Vulcan Painters and certified by U.S. Pipe and Foundry. For polyethylene lining, provide Polybond Plus (60 mils minimum thickness) as manufactured by American Cast Iron Pipe, or County approved equal.</del>	07/15/08

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2	02630	Ductile Iron Pipe (DIP) and Fittings: 2.5: Revise text.	<p>F. Restraining Devices: <b>Joint</b> restraining joints devices (<b>see County Approved Product List, Appendix F</b>) shall be placed at all bends, tees, plugs, reducers, and other fittings to provide lateral support, and shall conform to the Collier County Standard Details. Concrete thrust blocks shall only be utilized if approved by Collier County Utilities.</p> <p><del>— 1. Joint restraint devices for ductile iron mechanical joint pipe and ductile iron mechanical joint fittings to ductile iron pipe shall be EBAA Iron Sales, Series 1100 Megalug (R), Uniflange, Romac Industries, Sigma or Star Restraint.</del></p> <p><del>— 2. Bell joint restraint devices for ductile iron push joint pipe shall be EBAA Iron Inc., Series 1700 Megalug (R) for bell restraint.</del></p> <p><del>— 3. Restrained push-on joints for push joint pipe shall be U.S. Pipe and Foundry, TR Flex, McWane Inc., Super-Lock, American-Cast Iron Pipe Company, Lok-Ring or Flex-Ring.</del></p> <p>H. Gaskets shall be a Buna N, Neoprene, or a Nitril-based rubber product approved by the County Manager or designee. Gaskets shall have clean tips unless otherwise specified. Elastomeric gaskets conforming to ASTM F-477 shall also be acceptable.</p>	07/15/08
2	02630	Ductile Iron Pipe (DIP) and Fittings: 3.3: Revise text.	<p>C. Mechanical joints consisting of bell, socket, gland, gasket, bolts, and nuts shall conform to ANSI Standard A21.11. Bolts and nuts shall be high strength, low alloy, Cor Ten, T Head Type having hexagonal nuts. Bolts and nuts shall be machined through and nuts shall be tapped at right angles to a smooth bearing surface. Single sealed gasket push on type joints (<b>see County Approved Product List, Appendix F</b>) shall conform to the requirements of ANSI A21.11 and shall be Tyton, Fastite, Superbelltite, Alltite, or County approved equal.</p>	07/15/08
2	02645	Hydrants: 2.1: Revise text.	<p>G. Acceptable models (<b>see County Approved Product List, Appendix F</b>). include:</p> <p><del>— 1. Mueller Centurion A-423</del></p> <p><del>— 2. Kennedy K-81A</del></p> <p><del>— 3. American Darling 6-inch B-84-B</del></p>	07/15/08



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2	02650	Laying and Jointing Buried Pipe: 3.2: Revise text.	<p>G.4. With area to be sealed or repaired clean and suitably roughened, apply a thick coat of a two-part coal tar epoxy(<b>see County Approved Product List, Appendix F</b>), Madewell 1104 or <del>County approved equal.</del></p> <p>O. Identification:</p> <p>1. Metallized Warning Tape(<b>see County Approved Product List, Appendix F</b>): ... <del>Metallized tape shall be Terra Tape D as manufactured by Reef Industries, Inc., Houston Texas or County approved equal. ...</del></p> <p>2. Electronic Markers(<b>see County Approved Product List, Appendix F</b>): Install electronic markers 6 inches above pipe at all bends or changes in alignment and every 250 feet along the pipe between bends. <del>Markers shall be the appropriate Omni Marker-Model 161 or 162 as manufactured by 3M Telecom Systems-Group or County approved equal.</del></p> <p>Q. Aerial Crossings:</p> <p>1. Pipes spanning... Pipe spanning on piers spaced further apart than normal pipe length of 18 or 20 ft. shall be multiple length pipe with interior flanged joints with a rubber gasket pipe (<b>see County Approved Product List, Appendix F</b>) <del>such as Clow-"Long-span Pipe", Flanged US Pipe, Flanged American Pipe or County approved equal. ...</del></p>	07/15/08
2	13510	Pumping Stations: 2.1: Revise text.	<p>F. Valves: Discharge piping for each pump shall be equipped with a weighted check valve and plug valve. A three way plug valve, equipped with a quick coupling (<b>see County Approved Product List, Appendix F</b>), <del>as manufactured by DeZurik, Millikan or a COUNTY approved equivalent,</del> may be substituted for one plug valve to provide a means of emergency bypass access to the wastewater force main as required. Valves shall be supported on masonry or concrete piers.</p>	07/15/08

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2	15100	Water Valves and Appurtenances: 2.2 and 2.3: Revise text.	<p><b>2.2 MANUFACTURERS (see County Approved Product List, Appendix F)</b>  <del>A. U.S. Pipe, Clow, American Darling, Kennedy, Mueller, Ford or equal by U.S. manufacturer.</del></p> <p><b>2.3 DESIGN</b>            A. Resilient, Wedge or Gate Valves and Boxes</p> <p>1. Valves for ... the drawings. <b>For approved</b> air release line valves, bacterial sampling station line valves, and curb stops, <del>shall be Mueller Mark II Oriseal or County approved equal.</del> corporation stops, <del>shall be Mueller H10045 or County approved equal</del> and ball valves <del>shall be Ford Brass Ball Valves or County approved equal</del><b>see County Approved Product List, Appendix F.</b></p> <p>B. Valves for Buried Service</p> <p>2. All buried valves shall have cast iron two piece valve boxes <b>(see County Approved Product List, Appendix F)</b>. Valve boxes ... locking covers. <del>Valve boxes shall be Model 461 manufactured by Tyler/Union or County approved equal.</del></p> <p>G. Service Connection Materials</p> <p>1. Service Saddles <b>(see County Approved Product List, Appendix F)</b></p> <p><del>e. Service saddles on ductile iron pipe shall be Ford 202B, and on PVC pipe shall be Ford S-90 or County approved equal, with AWWA threaded corporation stop connections.</del></p>	07/15/08
2	15100	Water Valves and Appurtenances: 2.3: Revise text.	<p>D.1. Backflow prevention devices shall be reduced pressure principle assemblies or double check assemblies and shall be USC approved, and shall meet all requirements of <del>COUNTY Ordinance 200-60</del> <b>the Collier County Cross-Connection Control/Backflow Prevention Ordinance, as then amended.</b> Refer to Section 3, Utility Detail Drawings.</p>	05/20/08
2	15100	Water Valves and Appurtenances: 3.2: Revise text.	<p><b>3.2 AIR RELEASE VALVE INSTALLATION</b></p> <p><b>A. Prior to pressure testing a pipeline, all air release valve assemblies on that pipeline shall be installed.</b></p> <p><b>3.23 SHOP PAINTING</b></p>	09/18/07

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2	15110	Wastewater Valves and Appurtenances: 1.4: Revise text.	1.4 SUBMITTALS  B. Complete shop drawings of all valves and appurtenances shall be submitted to the ENGINEER for approval in accordance with <del>the requirements of Section 01340 and the General Conditions.</del>	07/15/08
2	15110	Wastewater Valves and Appurtenances: 2.2: Revise text.	2.2 DESIGN A. Eccentric Plug Valves  1. All valves ( <b>see County Approved Product List, Appendix F</b> ) shall be eccentric plug valves unless otherwise specified. <del>Valves shall be as manufactured by DeZurik, Milliken or County approved equal.</del>  B. Valves for Buried Service  2. All buried valves shall have cast iron two piece valve boxes( <b>see County Approved Product List, Appendix F</b> ), valve boxes shall be provided with suitable heavy bonnets to extend to such elevation at the finished grade surface as directed by the ENGINEER. ... <del>Valve boxes shall be Model 461 manufacturer by Tyler/Union or County approved equal.</del>	07/15/08

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2	15110	Wastewater Valves and Appurtenances: 2.2 continued: Revise text.	<p>2.2 DESIGN</p> <p>F. Flexible Couplings:</p> <p>1. Flexible couplings shall be either the split type or the sleeve type as shown on the Drawings.</p> <p>c. Victaulic type couplings and fittings may be used in lieu of flanged joints. Pipes shall be radius grooved as specified for use with the Victaulic couplings. Flanged adapter connections <b>(see County Approved Product List, Appendix F)</b> at fittings, valves, and equipment shall be <del>Victaulic Vic Flange Style 741, equal by Gustin Bacon Group, Division of Certain Teed Products, Kansas City, Kansas, or equal.</del></p> <p>d. Sleeve type couplings <b>(see County Approved Product List, Appendix F)</b> shall be used with all buried piping. The couplings shall be of steel and shall be <del>Dresser Style 38, Smith-Blair Style 413, Baker Allsteel, or equal.</del> The coupling shall be provided with stainless steel bolts and nuts unless indicated otherwise.</p> <p>G. Diaphragm Seals <b>(see County Approved Product List, Appendix F)</b>:</p> <p>2. Diaphragm seals shall have a flushing connection and be <del>Type SB Mansfield and Green; No. 877 Trerice; Ashcroft; or equal.</del></p>	07/15/08
2	15110	Wastewater Valves and Appurtenances: 2.2 continued: Revise text.	<p>2.2 DESIGN</p> <p>I. Mechanical Type Seals</p> <p>1. Mechanical type seals <b>(see County Approved Product List, Appendix F - sealing element)</b> shall consist of an adjustable modular bolted, synthetic rubber and plastic sealing element. <del>The sealing element shall e Link Seal LS 300 C as manufactured by Thunderline Corp., Inkster, Michigan or County approved equal.</del></p>	07/15/08
2	15110	Wastewater Valves and Appurtenances: Paragraph 2.2.C.3: Revise text.	<p>3. The shaft shall be single and continuous stainless steel, extending <del>both sides</del> <b>on one side</b> of the body with a lever and weight.</p>	01/15/08

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2	15110	Wastewater Valves and Appurtenances: Paragraph 2.2.D.6: Revise text.	delete "model S-020" and substitute "model S-025."	09/18/07
2	15110	Wastewater Valves and Appurtenances: 3.2: Add a new paragraph 3.2 as noted and adjust the subsequent paragraphs numbers (3.2 thru 3.5) by one digit as required.	<p><b>3.2 AIR RELEASE VALVE INSTALLATION</b></p> <p><b>A. Each air release valve shall be installed at a high point in the pipeline.</b></p> <p><b>B. Prior to pressure testing a pipeline, all air release valve assemblies on that pipeline shall be installed.</b></p>	09/18/07

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CHANGES TO UTILITIES DETAIL DRAWINGS - SECTION 3				
	Detail #	Old Note	New Note	Date of Approval
1	G-2B	2. ALL TESTS SHALL BE COMPLETED AND SHALL MEET MINIMUM DENSITY REQUIREMENTS PRIOR TO ADDITIONAL BACKFILLING.	Delete the entire note.	12/18/07
2	G-5	CASING SPACERS SHALL BE MODEL CCS AS MANUFACTURED BY CASCADE WATERWORKS MFG COMPANY OF YORKVILLE, ILLINOIS OR COUNTY APPROVED EQUAL	CASING SPACERS, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F).	07/15/08
3	G-5	CASCADE MODEL CCES STAINLESS STEEL CASING SPACER OR COUNTY APPROVED EQUAL	CASING SPACER, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
4	G-5	CARRIER PIPE SHALL BE CENTERED WITHIN CASING BY USE OF MODEL CCS STAINLESS STEEL CASING SPACERS AS MANUFACTURED BY CASCADE WATERWORKS MFG COMPANY OR COUNTY APPROVED EQUAL.	CARRIER PIPE SHALL BE CENTERED WITHIN CASING BY USE OF STAINLESS STEEL CASING SPACERS, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F).	07/15/08
5	G-7	VARIES	Revise location of valve to be as close as possible to the tee or as noted on the approved drawings.	10/17/07
6	G-8	ALL WORK SHALL BE IN ACCORDANCE WITH SECTIONS 1 AND 02300 OF THE COLLIER COUNTY UTILITIES STANDARDS MANUAL.	ALL WORK SHALL BE IN ACCORDANCE WITH SECTIONS 1 AND 099723 OF THE COLLIER COUNTY UTILITIES STANDARDS MANUAL.	07/15/08
7	G-9A	ACCESS MANHOLE FRAME AND COVER WITH STAINLESS STEEL BOLTS	ACCESS MANHOLE FRAME AND COVER WITH STAINLESS STEEL BOLTS	07/15/08
8	G-9A	1" BRASS CORPORATION STOP (MUELLER H-10046 OR McDONALD 4104 BF)	1" BRASS CORPORATION STOP (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
9	G-9A	WATERTIGHT RIM AND COVER, USF 420C-ORS, OR COUNTY APPROVED EQUAL, FLUSH IN PAVED AREAS AND 2-1/2" ABOVE THE FINISH GRADE IN UNPAVED AREAS (24" MINIMUM DIAMETER)	WATERTIGHT SEWER MANHOLE FRAME AND COVER, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F), FLUSH IN PAVED AREAS AND 2-1/2" ABOVE THE FINISH GRADE IN PAVED AREAS (24" MINIMUM DIAMETER)	07/15/08
10	G-11	Add new detail		05/20/08
11	NP-1	HAYWARD, MODEL NO. 72 OR COUNTY APPROVED EQUAL, TOP ACCESS BASKET STRAINER	TOP ACCESS BASKET STRAINER, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
12	NP-1	AFC-500 RISING STEM GATE VALVE OR COUNTY APPROVED EQUAL	RISING STEM GATE VALVE, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
13	NP-1	1/2" CORP. STOP WITH MALE NPT OUTLET AND 1/2" AIR RELEASE VALVE, GA INDUSTRIES FIGURE 945 OR COUNTY APPROVED EQUAL	1/2" CORP. STOP WITH MALE NPT OUTLET AND 1/2" AIR RELEASE VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
14	NP-1	AMES MODEL NO. 920G-04-05 07-08-15-30-38 A-20 PILOT REGULATOR 4-911 OR COUNTY APPROVED EQUAL. BACK PRESSURE SUSTAINING VALVE (SIZED FOR DESIGN FLOW RATE) WITH PRESSURE GAUGE	BACKPRESSURE SUSTAINING VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), SIZED FOR DESIGN FLOW RATE, WITH PRESSURE GAUGE	07/15/08
15	NP-1	ROTORK MOTOR OPERATED DEZURIK-BGS BUTTERFLY VALVE OR COUNTY APPROVED EQUAL	MOTOR OPERATED BUTTERFLY VALVE, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
16	NP-1	WATER SPECIALTIES PROPELLER METER, MODEL NO. ML-04-X WITH 4-20 MA OUTPUT TRANSMITTER, TR-16 (SEE NOTE 7)	PROPELLER METER WITH 4-20 MA OUTPUT TRANSMITTER (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), SEE NOTE 7	07/15/08
17	NP-1	AFC-500 RISING STEM GATE VALVE OR COUNTY APPROVED EQUAL	RISING STEM GATE VALVE, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
18	NP-2	"FORD" SERVICE WYE	SERVICE WYE, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
19	NP-2	1. "FORD" CONNECTORS Y 44-264 OR COUNTY APPROVED EQUAL SHALL BE USED FOR MULTI-SERVICE. SUCCESSIVE TAPS INTO IRRIGATION MAIN WILL BE NO CLOSER THAT 24" APART.	1. CONNECTORS Y (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) SHALL BE USED FOR MULTI-SERVICE. SUCCESSIVE TAPS INTO IRRIGATION MAIN WILL BE NO CLOSER THAT 24" APART.	07/15/08

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20	NP-2	2. ALL CASING PIPE SHALL EXTEND A MINIMUM OF 5' BEYOND THE EDGE OF PAVEMENT, WITH A CASING DIAMETER TO BE NO LESS THAN 3". CONDUIT SHALL BE MARKED WITH A 3M MAGNETIC MARKER.	2. ALL CASING PIPE SHALL EXTEND A MINIMUM OF 5' BEYOND THE EDGE OF PAVEMENT, WITH A CASING DIAMETER TO BE NO LESS THAN 3". CONDUIT SHALL BE MARKED WITH A MAGNETIC MARKER (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F).	07/15/08
21	NP-2	A. TAPPING SADDLES SHALL BE DUCTILE DOUBLE STRAP OR BRASS DOUBLE STRAP AS MANUFACTURED BY FORD F202 OR 202B OR COUNTY APPROVED EQUAL. MINIMUM SADDLE SIZE 1-1/2".	A. TAPPING SADDLES SHALL BE DUCTILE DOUBLE STRAP OR BRASS DOUBLE STRAP (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F). MINIMUM SADDLE SIZE 1-1/2".	07/15/08
22	NP-2	B. CORPORATION STOPS SHALL BE BALL TYPE AND MADE OF RED BRASS. OUTLET SHALL BE COMPRESSION TYPE FOR POLYETHYLENE TUBE. CORPORATION STOPS SHALL BE AS MANUFACTURED BY FORD FB 1100-6 OR COUNTY APPROVED EQUAL. COMPRESSION INSERT SHALL BE STAINLESS STEEL.	B. CORPORATION STOPS (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) SHALL BE BALL TYPE AND MADE OF RED BRASS. OUTLET SHALL BE COMPRESSION TYPE POLYETHYLENE TUBE. COMPRESSION INSERT SHALL BE STAINLESS STEEL.	07/15/08
23	NP-2	C. CURB STOPS SHALL BE BALL TYPE AND MADE OF RED BRASS. INLET SHALL BE COMPRESSION JOINT. OUTLET SHALL BE SWIVEL NUT FOR METER CONNECTION. CURB STOP SHALL BE AS MANUFACTURED BY FORD B 43-342 WG OR COUNTY APPROVED EQUAL.	C. CURB STOPS (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) SHALL BE BALL TYPE AND MADE OF RED BRASS. INLET SHALL BE COMPRESSION JOINT. OUTLET SHALL BE SWIVEL NUT FOR METER CONNECTION.	07/15/08
24	NP-2	E. METER BOXES: 3/4" TO 1" METERS SHALL BE ALLIANCE 12" AUTOMATIC METER READ (AMR) BOX (16AMR SERIES) OR COUNTY APPROVED EQUAL, CAST IN READ LID; 1-1/2" TO 2" METERS SHALL BE ALLIANCE 12" AUTOMATIC METER READER BOX (16AMR SERIES) OR COUNTY APPROVED EQUAL, CAST IRON READ LID.	E. AUTOMATIC METER READER (AMR) METER BOXES (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) SHALL HAVE CAST IRON READ LID.	07/15/08
25	NP-3	36" X 36" ALUMINUM ACCESS HATCH: HALLIDAY H1W (3-1/2" DEPTH AS SHOWN) OR BILCO J-AL H20 (5-1/2" DEPTH) OR US FOUNDRY AHS (5" DEPTH) WITH OPTIONS EQUAL TO HALLIDAY H1W. HATCH TO HAVE 316 STAINLESS STEEL HARDWARE AND BE CAST INTO LID.	36" X 36" ALUMINUM ACCESS HATCH (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH 316 STAINLESS STEEL HARDWARE AND BE CAST INTO LID.	07/15/08
26	NP-3	COMBINATION AIR RELEASE VALVE GA INDUSTRIES FIGURE 945	COMBINATION AIR RELEASE VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
27	NP-3	BRASS CORPORATION STOP (MUELLER H-10046 OR McDONALD 4104)	BRASS CORPORATION STOP (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
28	NP-3	RAM-NEK JOINT KEYED (TYP)	PLASTIC JOINT SEALING COMPOUND (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) KEYED (TYP)	07/15/08
29	NP-3	#4 BARS @ 12" OC EW OR COUNTY APPROVED EQUAL PER ASTM C-478	#4 BARS @ 12" OC EW OR EQUAL PER ASTM C-478	07/15/08
30	NP-4	CHANNEL MODEL COLLIER COUNTY WATER DEPARTMENT SIGNATURE SERIES PEDESTAL HOUSING P/N SPH 12122C10000W (DARK GREEN COLOR)	PEDESTAL HOUSING (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
31	NP-4	COMBINATION AIR RELEASE VALVE GA INDUSTRIES FIGURE 945 OR ARI D-040	COMBINATION AIR RELEASE VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
32	NP-4	1" BRASS CORPORATION STOP (MUELLER H-10046 OR McDONALD 4104 WITH COUPLING AS NECESSARY)	1" BRASS CORPORATION STOP (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH COUPLING AS NECESSARY	07/15/08
33	NP-4	1" BRASS CORPORATION STOP (MUELLER H-10046 OR McDONALD 4104BF)	1" BRASS CORPORATION STOP (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
34	NP-E2	1/2" CORPORATION STOP WITH MALE NPT OUTLET AND 1/2" AIR RELEASE VALVE, GA INDUSTRIES FIGURE 945 OR COUNTY APPROVED EQUAL	1/2" CORP. STOP WITH MALE NPT OUTLET AND 1/2" AIR RELEASE VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08

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35	NP-E2	AFC-500 RISING STEM GATE VALVE OR COUNTY APPROVED EQUAL	RISING STEM GATE VALVE, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
36	NP-E2	HAYWARD, MODEL NO. 72 OR COUNTY APPROVED EQUAL, TOP ACCESS BASKET STRAINER	TOP ACCESS BASKET STRAINER, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
37	NP-E2	AMES MODEL NO. 920-15-30-04-PIPE SIZE BACK PRESSURE SUSTAINING VALVE WITH RISING STEM AND VENDOR PROVIDED LIMIT SWITCH (SIZED FOR DESIGN FLOW RATE) AND WITH SOLENOID VALVE	BACKPRESSURE SUSTAINING VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), SIZED FOR DESIGN FLOW RATE, WITH RISING STEM, VENDOR PROVIDED LIMIT SWITCH, AND SOLENOID VALVE	07/15/08
38	NP-E2	ROTORK MODEL IQT WITH SPEED CONTROL MOTOR OPERATED OPEN/CLOSE BUTTERFLY VALVE (SEE NOTE)*	MOTOR OPERATED BUTTERFLY VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH SPEED CONTROL (SEE NOTE)*	07/15/08
39	NP-E2	WATER SPECIALTIES PROPELLER METER, MODEL NO. ML-04 WITH 4-20MA OUTPUT TRANSMITTER, TR-16.	PROPELLER METER WITH 4-20 MA OUTPUT TRANSMITTER (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
40	NP-E2	AFC-500 RISING STEM GATE VALVE OR COUNTY APPROVED EQUAL	RISING STEM GATE VALVE, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
41	NP-E3	2. 12VDC POWER SUPPLY, ALLEN BRADLEY 1606 SERIES	2. 12VDC POWER SUPPLY, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
42	NP-E3	3. 120VAC SURGE SUPPRESSOR, EDCO HSP121	3. 120VAC SURGE SUPPRESSOR, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
43	NP-E3	4. COAX SURGE SUPPRESSOR, POLYPHASER ISB56LN SERIES BULKHEAD MOUNT SERIES	4. COAX SURGE SUPPRESSOR, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
44	NP-E3	5. 24VDC POWER SUPPLY, ALLEN BRADLEY 1606 SERIES	5. 24VDC POWER SUPPLY, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
45	NP-E3	8. DATA SIGNAL LINE SURGE SUPPRESSOR, EDCO PC642 SERIES	8. DATA SIGNAL LINE SURGE SUPPRESSOR, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
46	NP-E3	9. DATA RADIO, INTEGRA-TR	9. DATA RADIO, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
47	NP-E5	MAIN SERVICE SURGE SUPPRESSOR LEA USP-M SERIES	MAIN SERVICE SURGE SUPPRESSOR, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
48	NP-E5	ISCO 674 RAIN GAUGE (NOT APPLICABLE FOR ALL REUSE CONNECTION SITES; ONLY AS DIRECTED BY COUNTY) REFER TO MOUNTING PLATE DETAIL	RAIN GAUGE, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F), NOT APPLICABLE FOR ALL REUSE CONNECTION SITES; ONLY AS DIRECTED BY COUNTY, REFER TO MOUNTING PLATE DETAIL	07/15/08
49	NP-E6	LEVEL TRANSDUCER BY WIKA OR COUNTY APPROVED EQUAL	LEVEL TRANSDUCER, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
50	NP-E6	SURGE SUPPRESSION MODULE: EDCO SS65	SURGE SUPPRESSION MODULE, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
51	NP-E7	SURGE SUPPRESSION MODULE: EDCO SS65	SURGE SUPPRESSION MODULE, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
52	NP-E9	YAGI ANTENNA	ANTENNA, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
53	W-2	AUTOMATIC FLUSHING DEVICE BY HYDRO-GUARD, MODEL H-G1 OR COUNTY APPROVED EQUAL	AUTOMATIC FLUSHING DEVICE, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
54	W-2	2. AUTOMATIC FLUSHING DEVICE SHALL BE INSTALLED AFTER MAIN LINE HAS BEEN BACTERIOLOGICALLY TESTED, BUT PRIOR TO TIE-IN.	2. AUTOMATIC FLUSHING DEVICES SHALL BE SHUT-OFF UNTIL MAIN LINE HAS BEEN BACTERIOLOGICALLY TESTES.	07/15/08
55	W-4	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY (PROVIDED BY CONTRACTOR) SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. ASSEMBLY SHALL COMPLY WITH AWWA M-14 STANDARDS. APPROVED DEVICES: AMES, CONBRACO, WILKINS-ZURN, AND WATTS.	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY (PROVIDED BY CONTRACTOR) SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14 STANDARDS. SEE APPROVED BACKFLOW DEVICES (APPENDIX G).	07/15/08



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56	W-4	ADD '12" MINIMUM CLEARANCE FROM BOTTOM OF DUMP PORT'		07/15/08
57	W-5	CHANNEL MODEL COLLIER COUNTY WATER DEPARTMENT SIGNATURE SERIES PEDESTAL HOUSING P/N SPH 121215000288 (LIGHT GREEN COLOR)	PEDESTAL HOUSING (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
58	W-5	COMBINATION AIR RELEASE VALVE GA INDUSTRIES FIGURE 945 OR ARI D-040	COMBINATION AIR RELEASE VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
59	W-5	1" BRASS CORPORATION STOP (MUELLER H-10046 OR McDONALD 4104 WITH COUPLING AS NECESSARY)	1" BRASS CORPORATION STOP (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH COUPLING AS NECESSARY	07/15/08
60	W-5	1" BRASS CORPORATION STOP (MUELLER H-10046 OR McDONALD 4104BF)	1" BRASS CORPORATION STOP (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
61	W-6	SAMPLING STATION. THE KUPFERLE FOUNDRY COMPANY ECLIPSE NO. 88, OR COUNTY APPROVED EQUAL, WITH 1/4" PET COCK AND BRASS STANDPIPE	SAMPLING STATION (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), WITH 1/4" PET COCK AND BRASS STANDPIPE	07/15/08
62	W-6	FORD L86-33 ELL COUPLING WITH STAINLESS STEEL INSERT AND FORD C18-33 BUSHING	COUPLING WITH STAINLESS STEEL INSERT AND BUSHING (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
63	W-6	FORD S90 BRASS SADDLES WITH F1101 CORPORATION STOP FOR PVC C-900 6" TO 12". ALL SIZES DUCTILE IRON PIPE SHOULD BE DIRECT TAP WITH FORD F1001 CORPORATION STOP OR COUNTY APPROVED EQUAL.	BRASS SERVICE SADDLES WITH CORPORATION STOP (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) FOR PVC C-900 6" TO 12". ALL SIZES DUCTILE IRON PIPE SHOULD BE DIRECT TAP WITH CORPORATION STOP (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F).	07/15/08
64	W-7	Delete entire detail, mark as unused in table of contents.		03/18/08
65	W-8	REDUCED PRESSURE DEVICE SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. APPROVED DEVICES: AMES, CONBRACO, WILKINS-ZURN, AND WATTS	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. SEE APPROVED BACKFLOW DEVICES (APPENDIX G).	07/15/08
66	W-9	1-1/2" RPZ ASSEMBLY, SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEALS AND SILICONE RUBBER SEALS UL LISTED/FM APPROVED	1-1/2" RP ASSEMBLY, SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEALS AND SILICONE RUBBER SEALS UL LISTED/FM APPROVED	07/15/08
67	W-9	6"x1-1/2" NEPTUNE PROTECTUS III OR UL LISTED/FM COUNTY APPROVED EQUAL. (FACTORY ASSEMBLED)(WITH TOP ACCESS STRAINER ONLY)	FIRE PROTECTION METER (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. (FACTORY ASSEMBLED)(WITH TOP ACCESS STRAINER ONLY)	07/15/08
68	W-9	RPZ ASSEMBLY, SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. UL LISTED/FM APPROVED FOR FIRE SERVICE INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. APPROVED DEVICES: AMES, CONBRACO, WILKINS-ZURN, AND WATTS	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. SEE APPROVED BACKFLOW DEVICES (APPENDIX G).	07/15/08
69	W-9A	WILKINS MODEL 475DA, OR COUNTY APPROVED EQUAL, REDUCED PRESSURE DETECTOR ASSEMBLY	REDUCED PRESSURE DETECTOR ASSEMBLY, SEE APPROVED BACKFLOW DEVICES (APPENDIX G)	07/15/08

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70	W-9A	2" RPZ ASSEMBLY, SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEALS AND SILICONE RUBBER SEALS UL LISTED/APPROVED. APPROVED DEVICES: WILKINS-ZURN OR COUNTY APPROVED EQUAL	2" RP ASSEMBLY SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEALS AND SILICONE RUBBER SEALS. UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. SEE APPROVED BACKFLOW DEVICES (APPENDIX G)	07/15/08
71	W-9A	+/- 6" ABOVE SLAB	12" MINIMUM ABOVE SLAB	07/15/08
72	W-9A	WILKINS VALVE SETTER	VALVE SETTER, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
73	W-10	NEPTUNE PROTECTUS III WITH BYPASS OR UL LISTED/FM APPROVED EQUAL (FACTORY ASSEMBLED)(WITH TOP ACCESS FACTORY APPLIED FUSION BONDED EPOXY COATED STRAINER ONLY)	FIRE PROTECTION METER (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH BYPASS. UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. (FACTORY ASSEMBLED)(WITH TOP ACCESS FACTORY APPLIED FUSION BONDED EPOXY COATED STRAINER ONLY)	07/15/08
74	W-10	AIR RELEASE VALVE GA INDUSTRIES FIGURE 945 OR ARI D-040	AIR RELEASE VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
75	W-10	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEALS AND SILICONE RUBBER SEALS. UL LISTED/FM APPROVED FOR FIRE SERVICE INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. APPROVED DEVICES: AMES, CONBRACO, WILKINS-ZURN, AND WATTS	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEALS AND SILICONE RUBBER SEALS. UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. SEE APPROVED BACKFLOW DEVICES (APPENDIX G).	07/15/08
76	W-10A	WILKINS MODEL 475DA, OR COUNTY APPROVED EQUAL, REDUCED PRESSURE DETECTOR ASSEMBLY	REDUCED PRESSURE DETECTOR ASSEMBLY, SEE APPROVED BACKFLOW DEVICES (APPENDIX G)	07/15/08
77	W-10A	WILKINS VALVE SETTER	VALVE SETTER, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
78	W-11	VALMATIC AIR VALVE WITH CORPORATION STOP	AIR VALVE WITH CORPORATION STOP, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
79	W-11	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEALS AND SILICONE RUBBER SEALS. UL LISTED/FM APPROVED, FOR FIRE SERVICE INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. APPROVED DEVICES: AMES, CONBRACO, WILKINS-ZURN, AND WATTS	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEALS AND SILICONE RUBBER SEALS. UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. SEE APPROVED BACKFLOW DEVICES (APPENDIX G).	07/15/08
80	W-11A	WILKINS MODEL 450DA DOUBLE CHECK DETECTOR ASSEMBLY	DOUBLE CHECK DETECTOR ASSEMBLY, SEE APPROVED BACKFLOW DEVICES (APPENDIX G)	07/15/08
81	W-11A	WILKINS VALVE SETTER	VALVE SETTER, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
82	W-12	"FORD" SERVICE WYE	SERVICE WYE, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
83	W-12	REDUCED PRESSURE ZONE DEVICE	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY	07/15/08
84	W-12	1. "FORD" CONNECTORS Y 44-264 OR COUNTY APPROVED EQUAL SHALL BE USED FOR MULTI-SERVICE. SUCCESSIVE TAPS INTO WATER MAIN WILL BE NO CLOSER THAT 24" APART.	1. CONNECTORS Y (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) SHALL BE USED FOR MULTI-SERVICE. SUCCESSIVE TAPS INTO WATER MAIN WILL BE NO CLOSER THAT 24" APART.	07/15/08
85	W-12	2. ALL CASING PIPE SHALL EXTEND A MINIMUM OF 5' BEYOND THE EDGE OF PAVEMENT, WITH A CASING DIAMETER TO BE NO LESS THAN 4". CONDUIT SHALL BE MARKED WITH A 3M MAGNETIC MARKER.	2. ALL CASING PIPE SHALL EXTEND A MINIMUM OF 5' BEYOND THE EDGE OF PAVEMENT, WITH A CASING DIAMETER TO BE NO LESS THAN 4". CONDUIT SHALL BE MARKED WITH A MAGNETIC MARKER (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F).	07/15/08

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86	W-12	A. TAPPING SADDLES SHALL BE DUCTILE DOUBLE STRAP OR BRASS DOUBLE STRAP AS MANUFACTURED BY FORD F202 OR 202B OR COUNTY APPROVED EQUAL. MINIMUM SADDLE SIZE 1-1/2".	A. TAPPING SADDLES SHALL BE DUCTILE DOUBLE STRAP OR BRASS DOUBLE STRAP (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F). MINIMUM SADDLE SIZE 1-1/2".	07/15/08
87	W-12	B. CORPORATION STOPS SHALL BE BALL TYPE AND MADE OF RED BRASS. OUTLET SHALL BE COMPRESSION TYPE FOR POLYETHYLENE TUBE. CORP STOPS SHALL BE AS MANUFACTURED BY FORD FB 1100-6 OR COUNTY APPROVED EQUAL. COMPRESSION INSERT SHALL BE STAINLESS STEEL.	B. CORPORATION STOPS (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) SHALL BE BALL TYPE AND MADE OF RED BRASS. OUTLET SHALL BE COMPRESSION TYPE POLYETHYLENE TUBE. COMPRESSION INSERT SHALL BE STAINLESS STEEL.	07/15/08
88	W-12	C. CURB STOPS SHALL BE BALL TYPE AND MADE OF RED BRASS. INLET SHALL BE COMPRESSION JOINT. OUTLET SHALL BE SWIVEL NUT FOR METER CONNECTION. CURB STOP SHALL BE AS MANUFACTURED BY FORD B 43-342 WG COUNTY APPROVED EQUAL.	C. CURB STOPS (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) SHALL BE BALL TYPE AND MADE OF RED BRASS. INLET SHALL BE COMPRESSION JOINT. OUTLET SHALL BE SWIVEL NUT FOR METER CONNECTION.	07/15/08
89	W-12	E. METER BOXES: 3/4" TO 1" METERS SHALL BE ALLIANCE 12" AUTOMATIC METER READ (AMR) BOX (16AMR SERIES) OR COUNTY APPROVED EQUAL, CAST IN READ LID; 1-1/2" TO 2" METERS SHALL BE ALLIANCE 12" AUTOMATIC METER READER BOX (16AMR SERIES) OR COUNTY APPROVED EQUAL,	E. AUTOMATIC METER READER (AMR) METER BOXES (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) SHALL HAVE CAST IRON READ LID.	07/15/08
90	W-13	VALMATIC AIR VALVE WITH CORPORATION STOP	AIR VALVE WITH CORPORATION STOP, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
91	W-13	NEPTUNE TRU/FLO COMPOUND WATER METER	COMPOUND WATER METER, SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F	07/15/08
92	W-13	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. UL LISTED/FM APPROVED, FOR FIRE SERVICE INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. APPROVED DEVICES: AMES, CONBRACO, WILKINS-ZURN, AND WATTS	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. SEE APPROVED BACKFLOW DEVICES (APPENDIX G).	07/15/08
93	W-13	FLANGED STRAINER WITH TOP ACCESS AND FUSION BONDED, EPOXY LINING, AMES 7001 OR COUNTY APPROVED EQUAL	FLANGED STRAINER WITH TOP ACCESS AND FUSION BONDED, EPOXY LINING (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
94	W-13	12" MINIMUM ABOVE SLAB TO RPZ DUMP PORT	12" MINIMUM ABOVE SLAB TO RP DUMP PORT	07/15/08
95	W-14	Add Note	LOCK OS&Y VALVE CLOSED	03/18/08
96	W-14	CONCRETE FOUNDATION (TYP) FULL LENGTH OF METER ASSEMBLY 4' WIDE, 6" THICK; REINFORCED 6x6 10/10 WELDED WIRE MESH	Don't replace with anything, remove double call out.	07/15/08
97	W-14	NEPTUNE HP PROTECTUS III FIRE SERVICE WATER METER WITH STRAINER (TOP ACCESS, FACTORY APPLIED FUSION BONDED EPOXY LINED STRAINER ONLY) UL LISTED/FM APPROVED	FIRE PROTECTION METER (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F). UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. (WITH TOP ACCESS FACTORY APPLIED FUSION BONDED EPOXY COATED STRAINER ONLY)	07/15/08
98	W-14	VALMATIC AIR VALVE WITH CORPORATION STOP	AIR VALVE WITH CORPORATION STOP, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08

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99	W-14	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. UL LISTED/FM APPROVED, FOR FIRE SERVICE INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. APPROVED DEVICES: AMES, CONBRACO, WILKINS-ZURN, AND WATTS	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. SEE APPROVED BACKFLOW DEVICES (APPENDIX G).	07/15/08
100	W-14	12" MINIMUM ABOVE SLAB TO RPZ DUMP PORT	12" MINIMUM ABOVE SLAB TO RP DUMP PORT	07/15/08
101	W-14	Add Note	9. A 4' x 8' SIGN WITH 3" LETTERS OR BIGGER SHALL READ: IN CASE OF FIRE OPEN VALVE.	03/18/08
102	W-14	Add Note	10. ALL COMPONENTS THAT COME INTO CONTACT WITH DRINKING WATER SHALL CONFORM TO NSF STANDARD 61.	03/18/08
103	W-15	DUEL 8" x 1-1/2" NEPTUNE PROTECTUS III OR UL LISTED/FM APPROVED EQUAL (FACTORY ASSEMBLED)(WITH TOP ACCESS STRAINER ONLY)	DUAL FIRE PROTECTION METERS (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F). UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. (FACTORY ASSEMBLED)(WITH TOP ACCESS STRAINER ONLY)	07/15/08
104	W-15	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. UL LISTED/FM APPROVED, FOR FIRE SERVICE INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. APPROVED DEVICES: AMES, CONBRACO, WILKINS-ZURN, AND WATTS	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. SEE APPROVED BACKFLOW DEVICES (APPENDIX G).	07/15/08
105	W-16	VALMATIC AIR VALVE WITH CORPORATION STOP	AIR VALVE WITH CORPORATION STOP, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F)	07/15/08
106	W-16	DOUBLE DETECTOR CHECK OR REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER SUPPLIED WITH AMMONIA & CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. UL LISTED/FM APPROVED, FOR FIRE SERVICE INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. APPROVED DEVICES: AMES, CONBRACO, WILKINS-ZURN, AND WATTS	DOUBLE DETECTOR CHECK OR REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY SUPPLIED WITH AMMONIA AND CHLORINE RESISTANT SEATS AND SILICONE RUBBER SEALS. UL/FM APPROVED FOR FIRE SERVICE INSTALLATION. INSTALLATION AS REQUIRED BY COUNTY ORDINANCE AND AWWA M-14. SEE APPROVED BACKFLOW DEVICES (APPENDIX G).	07/15/08
107	WW-2	USF 105M MANHOLE FRAME AND COVER WITH (4) 1" VENT HOLES OR COUNTY APPROVED EQUAL	SEWER MANHOLE FRAME AND COVER (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH (4) 1" VENT HOLES	07/15/08
108	WW-2	VAL-MATIC SWING FLEX CHECK VALVE OR COUNTY APPROVED EQUAL	CHECK VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
109	WW-3	WATERTIGHT RIM AND COVER, USF 420C-ORS, OR COUNTY APPROVED EQUAL, FLUSH WITH GRADE (24" MINIMUM DIAMETER)	WATERTIGHT SEWER MANHOLE FRAME AND COVER, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F), FLUSH WITH GRADE (24" MINIMUM DIAMETER)	07/15/08
110	WW-3	MINIMUM OF TWO PRECAST CONCRETE OR HDPE RISER RINGS AND CRETEX, OR COUNTY APPROVED EQUAL, CHIMNEY SEALS BETWEEN MANHOLE AND CAST IRON FRAME	MINIMUM OF TWO PRECAST CONCRETE OR HDPE RISER RINGS AND CHIMNEY SEAL (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) BETWEEN MANHOLE AND CAST IRON FRAME	07/15/08
111	WW-3	ALL INTERIORS OF PRIVATELY OWNED MANHOLES AND COLLIER COUNTY OWNED MANHOLES SHALL BE COATED AS SPECIFIED WITH IET OR SEWPERCOAT	ALL INTERIORS OF MANHOLES (PUBLIC AND PRIVATE) SHALL HAVE INTERNAL PROTECTION (SEE COUNTY APPROVED PRODUCTS LIST, APPENDIX F) AS SPECIFIED IN SECTION 099723	07/15/08
112	WW-3	RAM-NEK JOINT (TYP)	PLASTIC JOINT SEALING COMPOUND (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)(TYP)	07/15/08

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113	WW-4	WATERTIGHT RIM AND COVER, USF 420C-ORS, OR COUNTY APPROVED EQUAL, FLUSH WITH GRADE (24" MINIMUM DIAMETER)	WATERTIGHT SEWER MANHOLE FRAME AND COVER, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F), FLUSH WITH GRADE (24" MINIMUM DIAMETER)	07/15/08
114	WW-4	ALL INTERIORS OF PRIVATELY OWNED MANHOLES AND COLLIER COUNTY OWNED MANHOLES SHALL BE COATED AS SPECIFIED WITH IET OR SEWPERCOAT	ALL INTERIORS OF MANHOLES (PUBLIC AND PRIVATE) SHALL HAVE INTERNAL PROTECTION (SEE COUNTY APPROVED PRODUCTS LIST, APPENDIX F) AS SPECIFIED IN SECTION 099723	07/15/08
115	WW-4	MINIMUM OF TWO PRECAST CONCRETE OR HDPE RISER RINGS AND CRETEX, OR COUNTY APPROVED EQUAL, CHIMNEY SEALS BETWEEN MANHOLE AND CAST IRON FRAME	MINIMUM OF TWO PRECAST CONCRETE OR HDPE RISER RINGS AND CHIMNEY SEAL (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) BETWEEN MANHOLE AND CAST IRON FRAME	07/15/08
116	WW-4	RAM-NEK JOINT (TYP)	PLASTIC JOINT SEALING COMPOUND (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) KEYED (TYP)	07/15/08
117	WW-5	WATERTIGHT RIM AND COVER, USF 420C-ORS OR PAMREX 24" FLUSH WITH GRADE (24" MINIMUM DIAMETER)	WATERTIGHT SEWER MANHOLE FRAME AND COVER, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F), FLUSH WITH GRADE (24" MINIMUM DIAMETER)	07/15/08
118	WW-5	MINIMUM OF TWO PRECAST CONCRETE OR HDPE RISER RINGS AND CRETEX, OR COUNTY APPROVED EQUAL, CHIMNEY SEALS BETWEEN MANHOLE AND CAST IRON FRAME	MINIMUM OF TWO PRECAST CONCRETE OR HDPE RISER RINGS AND CHIMNEY SEAL (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) BETWEEN MANHOLE AND CAST IRON FRAME	07/15/08
119	WW-5	ALL INTERIORS OF PRIVATELY OWNED MANHOLES AND COLLIER COUNTY OWNED MANHOLES SHALL BE COATED AS SPECIFIED WITH IET OR SEWPERCOAT	ALL INTERIORS OF MANHOLES (PUBLIC AND PRIVATE) SHALL HAVE INTERNAL PROTECTION (SEE COUNTY APPROVED PRODUCTS LIST, APPENDIX F) AS SPECIFIED IN SECTION 099723	07/15/08
120	WW-5	RAM-NEK JOINT (TYP)	PLASTIC JOINT SEALING COMPOUND (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)(TYP)	07/15/08
121	WW-6	CAST IRON FRAME ON CONCRETE TO BE SET IN RAM-NEK JOINT AND GROUTED IN PLACE	CAST IRON FRAME ON CONCRETE TO BE SET IN PLASTIC JOINT SEALING COMPOUND (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) AND GROUTED IN PLACE	07/15/08
122	WW-6	WATERTIGHT RIM AND COVER, USF 420C-ORS. FLUSH IN PAVED AREAS. SEE MANHOLE DETAILS	WATERTIGHT SEWER MANHOLE FRAME AND COVER, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F). FLUSH IN PAVED AREAS. SEE MANHOLE DETAILS	07/15/08
123	WW-7	RAM-NEK JOINT (TYP)	PLASTIC JOINT SEALING COMPOUND (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)(TYP)	07/15/08
124	WW-7	2" PVC DRAIN WITH TIDEFLEX DUCKBILL VALVE BY RED VALVE	2" PVC DRAIN WITH DUCKBILL VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
125	WW-7	ROTO-FLOAT MODEL S 40 N 0 LIQUID LEVEL REGULATORS, EACH PROVIDED WITH 40 FEET OF ELECTRICAL CABLE.	LIQUID LEVEL REGULATORS (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), EACH PROVIDED WITH 40 FEET OF ELECTRICAL CABLE.	07/15/08
126	WW-7	U.S. FOUNDRY MODEL AHD-____ ACCESS FRAME WITH HINGED AND HASP EQUIPPED COVER, TWO UPPER GUIDE HOLDERS, CHAIN HOLDERS AND CABLE HOLDERS. ACCESS FRAMES SHALL BE ALUMINUM, H-20 LOADING WITH OPTIONS, COLLIER COUNTY STANDARD.	ACCESS FRAME (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH HINGED AND HASP EQUIPPED COVER, TWO UPPER GUIDE HOLDERS, CHAIN HOLDERS AND CABLE HOLDERS. ACCESS FRAMES SHALL BE ALUMINUM, H-20 LOADING WITH OPTIONS, COLLIER COUNTY STANDARD.	07/15/08
127	WW-7	U.S. FOUNDRY MODEL AHD-____ ACCESS FRAME WITH HINGED AND HASP EQUIPPED COVER. ACCESS FRAME SHALL BE ALUMINUM, H-20 LOADING WITH OPTIONS, COLLIER COUNTY STANDARD.	ACCESS FRAME (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH HINGED AND HASP EQUIPPED COVER. ACCESS FRAME SHALL BE ALUMINUM, H-20 LOADING WITH OPTIONS, COLLIER COUNTY STANDARD.	07/15/08

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128	WW-7	CONTROL PANEL SHALL BE QUALITY CONTROL INC. NO. 1825, 1 PHASE OR 3825, 3 PHASE WITH ALL COMPONENTS FOR OPERATING TWO PUMPS AND LIQUID LEVEL REGULATORS; STRUTHERS-DUNN ALTERNATOR RELAYS, 200 AMPERE RUSSEL AND STOLL GENERATOR RECEPTACLE AND ANGLE ADAPTOR, MODEL NUMBER JRS-2044 AND NEMA 3R STAINLESS STEEL ENCLOSURE.	PUMP CONTROL PANEL (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH ALL COMPONENTS FOR OPERATING TWO PUMPS AND LIQUID LEVEL REGULATORS; GENERATOR RECEPTACLE AND ANGLE ADAPTOR (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), AND NEMA 3R STAINLESS STEEL ENCLOSURE.	07/15/08
129	WW-7	CHECK VALVE, (K") IRON BODY, FLANGED, BRONZE MOUNTED WITH BRONZE FACED DISC. WEIGHT AND LEVER TYPE HORIZONTAL SWING CHECK VALVE BY KENNEDY VALVE MANUFACTURING COMPANY.	CHECK VALVE, (K") IRON BODY, FLANGED, BRONZE MOUNTED WITH BRONZE FACED DISC. WEIGHT AND LEVER TYPE HORIZONTAL SWING CHECK VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F).	07/15/08
130	WW-7	PLUG VALVE (K") NON-LUBRICATED NICKLE IRON, NEOPRENE COATED PLUG, 100% OPENING VALVE AS MANUFACTURED BY THE HOMESTEAD VALVE COMPANY AND SHALL BE COMPLETE WITH WRENCH.	PLUG VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), (K") NON-LUBRICATED NICKLE IRON, NEOPRENE COATED PLUG, 100% OPENING VALVE AND SHALL BE COMPLETE WITH WRENCH.	07/15/08
131	WW-7	3-WAY PLUG VALVE, (K") - 3 PORT, FLANGED, LEVEL ACTIVATED, AS MANUFACTURED BY MILLIKEN VALVE CO. OR COUNTY APPROVED EQUAL. VALVE SHALL BE MOUNTED SO THAT THE THIRD PORT IS ON TOP.	3-WAY PLUG VALVE(SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), (K") - 3 PORT, FLANGED, LEVEL ACTIVATED. VALVE SHALL BE MOUNTED SO THAT THE THIRD PORT IS ON TOP.	07/15/08
132	WW-7	3" QUICK-COUPLING UNIT COMPLETE. CONNECT TO THIRD PORT OF 3-WAY VALVE WITH A BRONZE MALE THREAD ADAPTOR EQUAL TO ANDREWS PART NUMBER 300-F AND 2-HANDLE BRONZE LOCKING CAP EQUAL TO ANDREWS PART NUMBER 300DC.	3" QUICK-COUPLING UNIT COMPLETE. CONNECT TO THIRD PORT OF 3-WAY VALVE WITH A BRONZE MALE THREAD ADAPTOR AND 2-HANDLE BRONZE LOCKING CAP.	07/15/08
133	WW-7	ALL PUMP STATION INTERIORS SHALL BE COATED WITH FIELD APPLIED IET OR SEWPERCOAT IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02608.	ALL PUMP STATION INTERIORS SHALL HAVE INTERNAL PROTECTION (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 099723.	07/15/08
134	WW-7A	GROUND SURFACE WITHIN PUMP STATION FENCE SHALL CONSIST OF <= 1" DIA STONE, 4" THICK, WITH GEOTEXTILE FILTER FABRIC (MIRAFI OR COUNTY APPROVED EQUAL)	GROUND SURFACE WITHIN PUMP STATION FENCE SHALL CONSIST OF <= 1" DIA STONE, 4" THICK, WITH GEOTEXTILE FILTER FABRIC	07/15/08
135	WW-8	GROUND SURFACE WITHIN PUMP STATION FENCE SHALL CONSIST OF <= 1" DIA STONE, 4" THICK, WITH GEOTEXTILE FILTER FABRIC (MIRAFI OR COUNTY APPROVED EQUAL)	GROUND SURFACE WITHIN PUMP STATION FENCE SHALL CONSIST OF <= 1" DIA STONE, 4" THICK, WITH GEOTEXTILE FILTER FABRIC	07/15/08
136	WW-8	APPLY TWO COATS OF APPROVED BITUMINOUS OR EPOXY SEALER TO THE EXTERIOR SURFACES OF THE PUMP STATION WETWELL AND VALVE VAULT. FIELD APPLY IET OR SEWPERCOAT COATING TO INTERIOR OF WETWELL	APPLY TWO COATS OF APPROVED BITUMINOUS OR EPOXY SEALER TO THE EXTERIOR SURFACES OF THE PUMP STATION WETWELL AND VALVE VAULT. FIELD APPLY INTERNAL PROTECTION (SEE COUNTY APPROVED PRODUCTS LIST, APPENDIX F) TO INTERIOR OF WETWELL IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 099723.	07/15/08
137	WW-8	ROTO-FLOAT MODEL S 40 N 0 LIQUID LEVEL REGULATORS, EACH PROVIDED WITH A MINIMUM OF 40 FEET OF ELECTRICAL CABLE.	LIQUID LEVEL REGULATORS (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), EACH PROVIDED WITH A MINIMUM OF 40 FEET OF ELECTRICAL CABLE.	07/15/08
138	WW-8	U.S. FOUNDRY MODEL AHD-____ ACCESS FRAME WITH HINGED AND HASP EQUIPPED COVER, TWO UPPER GUIDE HOLDERS, CHAIN HOLDERS AND CABLE HOLDERS. ACCESS FRAMES SHALL BE ALUMINUM, H-20 LOADING WITH OPTIONS, COLLIER COUNTY STANDARD.	ACCESS FRAME (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH HINGED AND HASP EQUIPPED COVER, TWO UPPER GUIDE HOLDERS, CHAIN HOLDERS AND CABLE HOLDERS. ACCESS FRAMES SHALL BE ALUMINUM, H-20 LOADING WITH OPTIONS, COLLIER COUNTY STANDARD.	07/15/08

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139	WW-8	U.S. FOUNDRY MODEL AHD-____ ACCESS FRAME WITH HINGED AND HASP EQUIPPED COVER. ACCESS FRAME SHALL BE ALUMINUM, H-20 LOADING WITH OPTIONS, COLLIER COUNTY STANDARD.	ACCESS FRAME (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH HINGED AND HASP EQUIPPED COVER. ACCESS FRAME SHALL BE ALUMINUM, H-20 LOADING WITH OPTIONS, COLLIER COUNTY STANDARD.	07/15/08
140	WW-8	CHECK VALVE, (K") IRON BODY, FLANGED, BRONZE MOUNTED WITH BRONZE FACED DISC. WEIGHT AND LEVER TYPE HORIZONTAL SWING CHECK VALVE BY KENNEDY VALVE MANUFACTURING COMPANY.	CHECK VALVE, (K") IRON BODY, FLANGED, BRONZE MOUNTED WITH BRONZE FACED DISC. WEIGHT AND LEVER TYPE HORIZONTAL SWING CHECK VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F).	07/15/08
141	WW-8	PLUG VALVE (K") NON-LUBRICATED NICKLE IRON, NEOPRENE COATED PLUG, 100% OPENING VALVE AS MANUFACTURED BY THE HOMESTEAD VALVE COMPANY AND SHALL BE COMPLETE WITH WRENCH.	PLUG VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), (K") NON-LUBRICATED NICKLE IRON, NEOPRENE COATED PLUG, 100% OPENING VALVE AND SHALL BE COMPLETE WITH WRENCH.	07/15/08
142	WW-8	3-WAY PLUG VALVE, (K") - 3 PORT, FLANGED, LEVEL ACTIVATED, AS MANUFACTURED BY MILLIKEN VALVE CO. OR COUNTY APPROVED EQUAL. VALVE SHALL BE MOUNTED SO THAT THE THIRD PORT IS ON TOP.	3-WAY PLUG VALVE(SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), (K") - 3 PORT, FLANGED, LEVEL ACTIVATED. VALVE SHALL BE MOUNTED SO THAT THE THIRD PORT IS ON TOP.	07/15/08
143	WW-8	3" QUICK-COUPLING UNIT COMPLETE. CONNECT TO THIRD PORT OF 3-WAY VALVE WITH A BRONZE MALE THREAD ADAPTOR EQUAL TO ANDREWS PART NUMBER 300-F AND 2-HANDLE BRONZE LOCKING CAP EQUAL TO ANDREWS PART NUMBER 300DC.	3" QUICK-COUPLING UNIT COMPLETE. CONNECT TO THIRD PORT OF 3-WAY VALVE WITH A BRONZE MALE THREAD ADAPTOR AND 2-HANDLE BRONZE LOCKING CAP.	07/15/08
144	WW-8	ALL PUMP STATION INTERIORS SHALL BE COATED WITH FIELD APPLIED IET OR SEWPERCOAT IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02608.	ALL PUMP STATION INTERIORS SHALL HAVE INTERNAL PROTECTION (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 099723.	07/15/08
145	WW-9	HOFFMAN MODEL #A12106NFSS OR APPROVED EQUAL, STAINLESS STEEL NEMA 3R JUNCTION BOX WITH TERMINAL STRIP MOUNTED WITH ALUMINUM BACKING PLATE, TERMINAL STRIPS TO HAVE STAINLESS STEEL SCREWS, 10" x 12" x 6" MINIMUM HINGED ON BOTTOM.	STAINLESS STEEL NEMA 3R JUNCTION BOX (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH TERMINAL STRIP MOUNTED WITH ALUMINUM BACKING PLATE, TERMINAL STRIPS TO HAVE STAINLESS STEEL SCREWS, 10" x 12" x 6" MINIMUM HINGED ON BOTTOM.	07/15/08
146	WW-9	2. SQUARE D MODEL SDSA-3650 (3 PHASE) AND SDSA-1175 (SINGLE PHASE) LIGHTNING ARRESTER MUST BE INSTALLED EXTERNALLY ON LOAD SIDE OF DISCONNECT BETWEEN DISCONNECT AND MAIN BREAKER. THE PENETRATION THROUGH THE DISCONNECT MUST BE MADE BELOW THE WORKING MECHANISM OF THE DISCONNECT (AS REQUIRED BY COLLIER COUNTY PUBLIC WORKS DIVISION)	2. LIGHTNING ARRESTER (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) MUST BE INSTALLED EXTERNALLY ON LOAD SIDE OF DISCONNECT BETWEEN DISCONNECT AND MAIN BREAKER. THE PENETRATION THROUGH THE DISCONNECT MUST BE MADE BELOW THE WORKING MECHANISM OF THE DISCONNECT (AS REQUIRED BY COLLIER COUNTY PUBLIC WORKS DIVISION)	07/15/08
147	WW-9	3. CONTROL PANEL SHALL BE QUALITY CONTROL INC. NO. 1823, 1 PHASE OR 3825, 3 PHASE WITH ALL COMPONENTS FOR OPERATING TWO PUMPS AND LIQUID LEVEL REGULATORS; STRUTHERS-DUNN ALTERNATOR RELAYS, 200 AMPERE RUSSEL AND STOLL GENERATOR RECEPTACLE AND ANGLE ADAPTOR, MODEL NUMBER JRS-2044 AND NEMA 3R STAINLESS STEEL ENCLOSURE.	3. PUMP CONTROL PANEL (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH ALL COMPONENTS FOR OPERATING TWO PUMPS AND LIQUID LEVEL REGULATORS; GENERATOR RECEPTACLE AND ANGLE ADAPTOR (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), AND NEMA 3R STAINLESS STEEL ENCLOSURE.	07/15/08
148	WW-10	3M MAGNETIC MIDRANGE MARKER (LAID FLAT)	MAGNETIC MIDRANGE MARKER (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), LAID FLAT	07/15/08
149	WW-11	USF 7621 RIM AND COVER FLUSH IN PAVEMENT AREAS	SEWER CLEAN-OUT RIM AND COVER (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) FLUSH IN PAVEMENT AREAS	07/15/08

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	Detail #	Old Note	New Note	Date of Approval
150	WW-12	3M MAGNETIC MIDRANGE MARKER (LAID FLAT)	MAGNETIC MIDRANGE MARKER (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), LAID FLAT	07/15/08
151	WW-13	36" X 36" ALUMINUM ACCESS HATCH: HALLIDAY H1W (3-1/2" DEPTH AS SHOWN) OR BILCO J-AL H20 (5-1/2" DEPTH) OR US FOUNDRY AHS (5" DEPTH) WITH OPTIONS EQUAL TO HALLIDAY H1W. HATCH TO HAVE 316 STAINLESS STEEL HARDWARE AND BE CAST INTO LID.	36" X 36" ALUMINUM ACCESS HATCH (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH 316 STAINLESS STEEL HARDWARE AND BE CAST INTO LID.	07/15/08
152	WW-13	RAM-NEK JOINT KEYED (OPTIONAL)	PLASTIC JOINT SEALING COMPOUND (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) KEYED (OPTIONAL)	07/15/08
153	WW-13	ARI MODEL D-025 AIR RELEASE VALVE WITH FLUSH ATTACHMENTS AND SHUT-OFF VALVE	AIR RELEASE VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH FLUSH ATTACHMENTS AND SHUT-OFF VALVE	07/15/08
154	WW-13	BRASS CORPORATION STOP (MUELLER H-10046 OR McDONALD 4104)	BRASS CORPORATION STOP	07/15/08
155	WW-14	30" x 30" CAST IRON HATCH, US FOUNDRY 7644-KA, OR COUNTY APPROVED EQUAL WITH ID LETTERING ("COLLIER COUNTY" AND "SEWER ARV" OR LEAVE BLANK IF PRIVATELY OWNED). HATCH TO BE CAST INTO LID.	30" x 30" CAST IRON ACCESS HATCH (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH ID LETTERING ("COLLIER COUNTY" AND "SEWER ARV" OR LEAVE BLANK IF PRIVATELY OWNED). HATCH TO BE CAST INTO LID.	07/15/08
156	WW-14	RAM-NEK JOINT KEYED (TYP)	PLASTIC JOINT SEALING COMPOUND (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) KEYED (TYP)	07/15/08
157	WW-14	ARI MODEL D-025 AIR RELEASE VALVE WITH FLUSH ATTACHMENTS AND SHUT-OFF VALVE	AIR RELEASE VALVE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) WITH FLUSH ATTACHMENTS AND SHUT-OFF VALVE	07/15/08
158	WW-14	BRASS CORPORATION STOP (MUELLER H-10046 OR McDONALD 4104)	BRASS CORPORATION STOP	07/15/08
159	WW-14	FLEXIBLE RUBBER SLEEVE EQUAL TO KOR-N-SEAL WITH 206 SERIES CONNECTOR. HOLE SIZE TO BE MINIMUM OF 3" LARGER THAN OUTSIDE PIPE DIAMETER	FLEXIBLE RUBBER SLEEVE. HOLE SIZE TO BE MINIMUM OF 3" LARGER THAN OUTSIDE PIPE DIAMETER	07/15/08
160	WW-16	3M MAGNETIC MIDRANGE MARKER (LAID FLAT)	MAGNETIC MIDRANGE MARKER (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F), LAID FLAT	07/15/08
161	WW-17	YAGI ANTENNA REINFORCED	ANTENNA, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F), REINFORCED	07/15/08
162	WW-17	COAXIAL CABLE RTC400	COAXIAL CABLE (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
163	WW-17	TOWER SECTION ROHN 20G	TOWER SECTION (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F)	07/15/08
164	WW-18	WATERTIGHT RIM AND COVER, USF 420C-ORS FLUSH IN PAVED AREAS AND 2-1/2" ABOVE THE FINISH GRADE IN UNPAVED AREAS (24" MINIMUM DIAMETER) (TYP)	WATERTIGHT SEWER MANHOLE FRAME AND COVER, SEE COUNTY APPROVED PRODUCT LIST (APPENDIX F), FLUSH IN PAVED AREAS AND 2-1/2" ABOVE THE FINISH GRADE IN PAVED AREAS (24" MINIMUM DIAMETER)	07/15/08
165	WW-18	RAM-NEK JOINT AND GROUT (TYP)	PLASTIC JOINT SEALING COMPOUND (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) AND GROUT (TYP)	07/15/08
166	WW-18	3" OR LARGER PVC PIPES (TYP). SEAL INLET AND OUTLET PIPES WITH LINK-SEAL OR COUNTY APPROVED EQUAL WITH STAINLESS STEEL HARDWARE	3" OR LARGER PVC PIPES (TYP). USE SEALING ELEMENT (SEE COUNTY APPROVED PRODUCT LIST, APPENDIX F) ON INLET AND OUTLET PIPES WITH STAINLESS STEEL HARDWARE	07/15/08



COLLIER COUNTY UTILITIES STANDARDS MANUAL  
 TABLE OF REVISIONS TO APPENDICES  
 SINCE SEPTEMBER 2007 UPDATE  
 COLLIER COUNTY PUBLIC UTILITIES ENGINEERING DEPARTMENT  
 AS OF 08/26/08

<b>CHANGES TO APPENDICES – SECTION 4</b>				
Section	Sub-Section	Location	Revision	Date
4	Appendix B	Page 1	Edit note 2 as follows: "2. Meters <b>that include fire service</b> shall be selected to allow a maximum pressure loss at design flow of 5 psi except the 3-inch meter shall be a maximum pressure loss of 5.5 psi."	08/26/08
4	Appendix B	Page 1	Add table to provide meter size based on demand.	04/15/08
4	Appendix B	Page 2	Update way fixture value is calculated for Urinal and Flushometer Valves. Remove "Misc. Connections" and replace with more "Other."	08/26/08
4	Appendix F		Add "County Approved Product List"	07/15/08
4	Appendix G		Add "Approved Backflow Devices"	07/15/08



# Water Meter Sizing Form

One Form Per Meter

Please call Public Utilities Engineering (239) 252-2583 with any questions.

**Preparer's Information:**

Name =====> \_\_\_\_\_

Title =====> \_\_\_\_\_

Company=====> \_\_\_\_\_

Address =====> \_\_\_\_\_

\_\_\_\_\_

Phone =====> \_\_\_\_\_

Email Address =====> \_\_\_\_\_

**Project Information:**

Date =====> \_\_\_\_\_

Permit or AR Number \_\_\_\_\_

Name of Project ==> \_\_\_\_\_

Project Address ==> \_\_\_\_\_

**Please Note:**

- All commercial facilities must be metered separately from residential facilities with the exception of those commercial facilities that are within a master metered residential development and designed for the exclusive use of the residents within such development.
- Meters that include fire service shall be selected to allow a maximum pressure loss at design flow of 5 psi except the 3-inch meter shall be a maximum pressure loss of 5.5 psi.
- Additional fees may apply if a backflow device is deemed necessary by the Water Distribution Department.
- The Design Engineer/Architect must submit signed and sealed documentation supporting meter sizing. For meters 4-inch and smaller the sizing shall be based upon Fixture Flow Values as shown on the following page and sized as per the Table on page 3 unless approved otherwise by the Collier County Utilities Engineering Department. For all meters the Engineer/Architect must consider all relevant factors before selecting the final meter size.
- For remodeling projects this form must be submitted only if there is a net increase in Fixture Flow Value.

***This Section to be filled out by Engineer/Architect of Record:***

**Demand in accordance with the Fixture Flow Value Worksheet and the Table for Estimating Demand**

(Engineer/Architect must attach a completed Fixture Flow Value Worksheet)

\_\_\_\_\_

**Meter Size in Inches**

(If the meter is existing, Engineer/Architect must identify the meter manufacturer and model number)

\_\_\_\_\_

Demand Range (GPM)	Meter Size
0 to 24	3/4"
24.1 to 40	1"
40.1 to 80	1 1/2"
80.1 to 144	2"
144.1 to 405	3"
405.1 to 900	4"

\_\_\_\_\_  
Type or Print Name of Engineer/Architect of Record for Project

\_\_\_\_\_  
Signature of Engineer/Architect of Record for Project and Date  
[Affix Engineering/Architect Stamp Here]



# Fixture Flow Value Worksheet

## Supporting Documentation

Please call Public Utilities Engineering (239) 252-2583 with any questions.

Enter # of Fixtures of each Fixture Type, per unit, then multiply by appropriate Flow Rate to get Fixture Value

Fixture	Flow Rate		# of Fixtures Per Unit	Fixture Flow Value
<b>Automatic clothes Washer</b>				
Commercial	3	x		=
Residential	2	x		=
<b>Bathroom group</b>				
As defined in FL Plumbing Code Section 202 (1.6 gpf water closet)	5	x		=
As defined in FL Plumbing Code Section 202 (water closet flushing greater than 1.6 gpf)	6	x		=
Bathtub	4	x		=
Bidet	2	x		=
Dental unit or cuspidor	1	x		=
Dishwasher, residential	2.75	x		=
Drinking fountain	0.75	x		=
Shower	3	x		=
Sillcock, hose bibb	5	x		=
<b>Sink (per faucet)</b>				
Kitchen, residential	2	x		=
Laundry tray	4	x		=
Lavatory	2	x		=
Service	3	x		=
Wash	2	x		=
<b>Urinal</b>				
Standard	4	x		=
Flushless	0	x		=
Valve* Gallons/Flush = x10		x		=
<b>Water Closet</b>				
Flushometer valve* Gallons/Flush = x10		x		=
Flushometer tank	1.6	x		=
Tank	4	x		=
For any fixtures not listed, submit manufacturer's data sheets and enter appropriate description and value:				
Other:		x		=
Other:		x		=
Other:		x		=
Other:		x		=
Other:		x		=
<b>Total Fixture Value Per Unit =====&gt;</b>				
<b>Number of Units with this Fixture Count =====&gt;</b>				
<b>Grand Total of Fixture Flow Value (Per Unit Total x Number of Units)** =====&gt;</b>				

\*Valves are calculated using a flush rate of 10 flushes per minute (according to Florida Plumbing Code).  
The flow rate is 10 times the gallons per flush.

The fixture flow value is calculated as follows:

Number of Valves	Calculation
1 - 2	Flow Rate <b>times</b> Number of Fixtures.
3 - 10	Flow Rate <b>times two plus two times</b> the Number of Fixtures.
11 or more	Flow Rate <b>times</b> Number of Fixtures <b>divided</b> by two.

\*\*Use total Fixture Flow Value on "Table for Estimating Demand" to estimate water meter demand.



## Table for Estimating Demand

### Supporting Documentation

Please call Public Utilities Engineering (239) 252-2583 with any questions.

SUPPLY SYSTEMS PREDOMINANTLY FOR FLUSH TANKS		SUPPLY SYSTEMS PREDOMINANTLY FOR FLUSH VALVES	
Load	Demand	Load	Demand
Fixture Flow Value	Gallons per minute	Fixture Flow Value	Gallons per minute
1	3.0	---	---
2	5.0	---	---
3	6.5	---	---
4	8.0	---	---
5	9.4	5	15.0
6	10.7	6	17.4
7	11.8	7	19.8
8	12.8	8	22.2
9	13.7	9	24.6
10	14.6	10	27.0
11	15.4	11	27.8
12	16.0	12	28.6
13	16.5	13	29.4
14	17.0	14	30.2
15	17.5	15	31.0
16	18.0	16	31.8
17	18.4	17	32.6
18	18.8	18	33.4
19	19.2	19	34.2
20	19.6	20	35.0
25	21.5	25	38.0
30	23.3	30	42.0
35	24.9	35	44.0
40	26.3	40	46.0
45	27.7	45	48.0
50	29.1	50	50.0
60	32.0	60	54.0
70	35.0	70	58.0
80	38.0	80	61.2
90	41.0	90	64.3
100	43.5	100	67.5
120	48.0	120	73.0
140	52.5	140	77.0
160	57.0	160	81.0
180	61.0	180	85.5
200	65.0	200	90.0
225	70.0	225	95.5
250	75.0	250	101.0
275	80.0	275	104.5
300	85.0	300	108.0
400	105.0	400	127.0
500	124.0	500	143.0
750	170.0	750	177.0
1,000	208.0	1,000	208.0
1,250	239.0	1,250	239.0
1,500	269.0	1,500	269.0
1,750	297.0	1,750	297.0
2,000	325.0	2,000	325.0
2,500	380.0	2,500	380.0
3,000	433.0	3,000	433.0
4,000	535.0	4,000	525.0
5,000	593.0	5,000	593.0

**Collier County Public Utilities Division**  
**County Approved Product List**

Substitutions for any item listed below shall be submitted using the "Vendor and Manufacturer Approval Application Form," Appendix E, and reviewed to be considered an equal.			
Item	Manufacturer	Model	Location in Standards Manual
120VAC Surge Suppressor	Edco	HSP121	NP-E3
12VDC Power Supply	Allen Bradley	1606 Series	NP-E3
24VDC Power Supply	Allen Bradley	1606 Series	NP-E3
Access Frame (Pump Station)	U.S. Foundry	AHD	WW-7/WW-8
Access Hatch, Aluminum	Bilco	J-AL H20 (5-1/2" depth)	NP-3/WW-13
Access Hatch, Aluminum	Halliday	H1W (3-1/2" depth)	NP-3/WW-13
Access Hatch, Aluminum	U.S. Foundry	AHS (5" depth)	NP-3/WW-13
Access Hatch, Cast Iron	U.S. Foundry	7644-KA	WW-14
Antenna Subsystem	Data Flow Systems, Inc.	RTA209 Yagi Antenna	Section 13510, Page 4, J./NP-E9/WW-17
Automatic Flushing Device	Hydro-Guard	H-G1	W-2
Back Pressure Sustaining Valve	Ames	No. 920	NP-1/NP-E2
Backflow Preventer Assembly	See Approved Backflow Devices List		
Ball Valves	Ford		Section 15100, Page 3, First Paragraph
Basket Strainer, Top Access	Hayward	No. 72	NP-1/NP-E2
Biofiltration Odor Control System	Zabocs (pre-engineered)		Section 13510, Page 6, P.

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Item	Manufacturer	Model	Location in Standards Manual
Bushing	Ford	C18-33	W-6
Casing Spacer End Seals	Cascade Waterworks MFG Co.	CCES	Section 02226, Page 4, B.1
Casing Spacers Stainless Steel	Cascade Waterworks MFG Co.	CCS	Section 02226, Page 4, B.1/G-5
Ceramic Epoxy Lining	Vulcan Painters	Protecto 401 Coating	Section 02630, Page 3, 2.1.B
Chimney Seal	Cretex		Section 02607, Page 4, K/WW-3/WW-4/WW-5
Chimney Seal	NPC		Section 02607, Page 4, K/WW-3/WW-4/WW-6
Coax Surge Supressor	Polyphaser	ISB56LN, Bulkhead Mount Series	NP-E3
Coaxial Cable	Data Flow Systems, Inc.	RTC 400	Section 13510, Page 5, First Paragraph/WW-17
Corporation Stops	Ford	F1001 (Ductile Iron)	W-6
Corporation Stops	Ford	F1101 (PVC)	W-6
Corporation Stops	Ford	FB 1100-6	NP-2/W-12
Corporation Stops	McDonald	4104	NP-3/NP-4/W-5/WW-13/WW-14
Corporation Stops	McDonald	4101 BF	G-9A/NP-4/W-5
Corporation Stops	Mueller	H10045, H15008	Section 15100, Page 3, First Paragraph
Corporation Stops	Mueller	H-10046	G-9A/NP-3/NP-4/W-5/WW-13/WW-14

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<b>Item</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Location in Standards Manual</b>
Coupling	Ford	L86-33 ELL	W-6
Curb Stop	Ford	B 43-342 WG	NP-2/W-12
Curb Stop	Mueller	Mark II Oriseal	Section 15100, Page 3, First Paragraph
Data Radio	Integra	TR	NP-E3
Data Signal Line Surge Processor	Edco	PC642 Series	NP-E3
Diaphragm Seals	Ashcroft		Section 15110, Page 8, G.2.
Diaphragm Seals	Mansfield and Green	Type SB	Section 15110, Page 8, G.2.
Diaphragm Seals	Trerice	No. 877	Section 15110, Page 8, G.2.
Electronic Markers	3M Telecom Systems Group	Omni Marker Model 161 or 162	Section 02650, Page 9, O.2
Flanged Adapter Connections	Gustin-Bacon Group, Division of Certain-Teed Products, Kansas City, Kansas		Section 15110, Page 7, F.1.c.
Flanged Adapter Connections	Victaulic	Vic Flange Style 741	Section 15110, Page 7, F.1.c.
Generator Receptacle and Angle Adaptor	Russell and Stoll	200 Ampere JRS-2044	WW-7/WW-9
Geomembrane	GSE Lining Technology, Inc.		Section 02700, Page 4, 1.a
Hydrant	American Darling	6-inch B-84-B	Section 02645, Page 2, G
Hydrant	Kennedy	K-81A	Section 02645, Page 2, G

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Item	Manufacturer	Model	Location in Standards Manual
Hydrant	Mueller	Centurion A-423	Section 02645, Page 2, G
Inflow Protector, Stainless Steel	Sewer Shield, Inc. Maitland, FL		Section 02607, Page 4, J.
Internal Protection	Integrated Environmental Technologies - Santa Barbara, CA	IET Coating System	Section 02607, Page 5, 3.1.F/Section 02608/WW-3/WW-4/WW-5/WW-7/WW-8
Internal Protection	Lafarge Calcium Aluminates - Chesapeake, VA	Sewpercoat Lining System	Section 02607, Page 5, 3.1.F/Section 02608/WW-3/WW-4/WW-5/WW-7/WW-9
Joint Restraint Devices	EBAA Iron Sales		Section 1: 1.3/Section 02622, Page 5, L./Section 02630, Page 7, F.
Joint Restraint Devices	Romac Industries		Section 1: 1.3/Section 02622, Page 5, L./Section 02630, Page 7, F.
Joint Restraint Devices	Sigma		Section 02622, Page 5, L.1./Section 02630, Page 7, F.
Joint Restraint Devices	Star Restraint		Section 1: 1.3/Section 02622, Page 5, L./Section 02630, Page 7, F.
Joint Restraint Devices	Uniflange		Section 02622, Page 5, L.1./Section 02630, Page 7, F.
Joint Restraint Devices, Push-On joints for push joint pipe	American Cast Iron Pipe Company		Section 02630, Page 7, F.3.
Joint Restraint Devices, Push-On joints for push joint pipe	Flex-Ring		Section 02630, Page 7, F.3.
Joint Restraint Devices, Push-On joints for push joint pipe	Lok-Ring		Section 02630, Page 7, F.3.
Joint Restraint Devices, Push-On joints for push joint pipe	McWane Inc.		Section 02630, Page 7, F.3.
Joint Restraint Devices, Push-On joints for push joint pipe	Super-Lock		Section 02630, Page 7, F.3.



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Item	Manufacturer	Model	Location in Standards Manual
Joint Restraint Devices, Push-On joints for push joint pipe	TR Flex		Section 02630, Page 7, F.3.
Joint Restraint Devices, Push-On joints for push joint pipe	U.S. Pipe & Foundry		Section 02630, Page 7, F.3.
Junction Box	Hoffman	A12106NFSS	WW-9
Level Transducer	Wika		NP-E6
Lightning Arrestor	Square D	SDSA-1175 for 1-phase	Section 13510, Page 6, O./WW-9
Lightning Arrestor	Square D	SDSA-3650 for 3-phase	Section 13510, Page 6, O./WW-9
Liquid Level Regulators	Roto-Float	S 40 N 0	WW-7/WW-8
Magnetic Marker	3M		Section 1; 1.6.1, 2.1.4, 2.2.1/WW-10/WW-12/WW-16
Metallized Tape	Reef Industries, Inc. Houston, TX	Terra Tape D	Section 02650, Page 9, O.1
Meter Box, AMR	Alliance	12" 16AMR Series	NP-2/W-12
Meter, Fire Protection	Neptune	Protectus III	W-9/W-10/W-14/W-15
Meter, Non-Potable Propeller	Water Specialties	No. ML-04-X with 4-20 MA Output Transmitter, TR-16	NP-1/NP-E2
Meter, Potable Water	Neptune	Tru/Flo	W-13

**Collier County Public Utilities Division**  
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Item	Manufacturer	Model	Location in Standards Manual
Mix-Flush system (Flush valve)	Flygt	4901 Flush Valve	Section 13510, Page 3, First Paragraph
Pedestal Housing	Channel	CCWD Signature Series P/N SPH 121215000288 (Light Green Color)	W-5
Pedestal Housing	Channel	CCWD Signature Series P/N SPH 12122C10000W (Dark Green Color)	NP-4
Plastic Joint Sealing Compound	Hamilton Kent, Toronto/Ontario, Canada	Kent-Seal	Section 02607, Pages 3 & 5
Plastic Joint Sealing Compound	K.T. Snyder Company, Inc. Houston, TX	Ram-Nek	Section 02607, Pages 3 & 5/NP-3/WW-3/WW-4/WW-5/WW-6/WW-7/WW-13/WW-14/WW-18
Polyethylene Lining	American Cast Iron Pipe	Polybond Plus (60 mils minimum thickness)	Section 02630, Page 3, 2.1.B
Pump Control Panel	Quality Control, Inc.	1825 for 1-phase	Section 13510, Page 4, H./WW-7/WW-9
Pump Control Panel	Quality Control, Inc.	3825 for 3-phase	Section 13510, Page 4, H./WW-7/WW-9
Pump Controller/RTU	Data Flow Systems, Inc.	TAC Pack TCU	Section 13510, Page 4, I.
Rain Gauge	ISCO	674	NP-E5
Rubber Gasket pipe	Clow "Long-Span Pipe"		Section 02650, Page 10, Q.1.
Rubber Gasket pipe	Flanged American Pipe		Section 02650, Page 10, Q.1.
Rubber Gasket pipe	Flanged US Pipe		Section 02650, Page 10, Q.1.

**Collier County Public Utilities Division**  
**County Approved Product List**

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Item	Manufacturer	Model	Location in Standards Manual
Sampling Station	Kupferle Foundry Company	Eclipse No. 88	W-6
Sealing Element	Thunderline Corp. Inkster Michigan	Link-Seal LS-300-C	Section 15110, Page 8, I.1./WW-18
Service Saddles (Ductile Iron)	Ford	202B	Section 15100, Page 7, c.
Service Saddles (PVC)	Ford	S 90	Section 15100, Page 7, c./W-6
Service Wye	Ford	44-264?	NP-2/W-12
Sewage Pump	Flygt		Section 13510, Page 2, C
Sewer Clean-Out Rim and Cover	U.S. Foundry	7621	WW-11
Sewer Manhole Frame and Covers	Pamrex		WW-5
Sewer Manhole Frame and Covers	U.S. Foundry	105M	WW-2
Sewer Manhole Frame and Covers	U.S. Foundry	420-C-ORS	Section 02607, Page 2, 2.1.A.2/G-9A/WW-3/WW-4/WW-5/WW-6/WW-18
Single Sealed Gasket Push-on type joint	Alltite		Section 02630, Page 10, 3.3.C
Single Sealed Gasket Push-on type joint	Fastite		Section 02630, Page 10, 3.3.C
Single Sealed Gasket Push-on type joint	Superbelltite		Section 02630, Page 10, 3.3.C
Single Sealed Gasket Push-on type joint	Tyton		Section 02630, Page 10, 3.3.C
Sleeve Type Couplings	Baker Allsteel		Section 15110, Page 8, d.

**Collier County Public Utilities Division**  
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Item	Manufacturer	Model	Location in Standards Manual
Sleeve Type Couplings	Dresser	Style 38	Section 15110, Page 8, d.
Sleeve Type Couplings	Smith Blair	Style 413	Section 15110, Page 8, d.
Strainer, Flanged	Ames	7001	W-13
Surge Suppression	Edco	SS65	NP-E6/NP-E7
Surge Suppression, Main Service	Lea	USP-M Series	NP-E5
Tapping Saddle	Ford	F202	NP-2/W-12
Tapping Saddle	Ford	F202B	NP-2/W-12
Tower Section	Rohn	20G	WW-17
Two-part Coal tar Epoxy	Madewell Products Corp.	Madewell 1104	Section 02650, Page 6, 4
Valve Box	Brooks		WW-9
Valve Box	Tyler/Union	461	Section 15100, Page 4, First Paragraph
Valve Setter	Wilkins		W-9A/W-10A/W-11A
Valve, 3-Way Plug	Milliken Valve Co.		WW-7/WW-8
Valve, Air	Val-Matic		W-11/W-14/W-16
Valve, Air Release	ARI	D-025	WW-13/WW-14

**Collier County Public Utilities Division**  
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Item	Manufacturer	Model	Location in Standards Manual
Valve, Air Release	ARI	D-040	NP-4/W-5/W-10
Valve, Air Release	ARI	S-025	Section 15110, Page 7, 6.
Valve, Air Release	GA Industries	Figure 945	Section 1 1.7/NP-1/NP-3/NP-4/NP-E2/W-5/W-10
Valve, Air Release	Mueller	Mark II Oriseal	Section 15100, Page 3, First Paragraph
Valve, Bacterial Sampling Station Line	Mueller	Mark II Oriseal	Section 15100, Page 3, First Paragraph
Valve, Butterfly	DeZurik	BGS	NP-1
Valve, Butterfly - Motor	Rotork	IQT	NP-E2
Valve, Check	Kennedy Valve Manufacturing Co.		WW-7/WW-8
Valve, Check	Red Valve Co., Inc. Longwood, FL	"Tideflex"	Section 13510, Page 2, B
Valve, Check	Val-Matic	Swing Flex	WW-2
Valve, Duckbill	Red Valve Co., Inc. Longwood, FL	"Tideflex"	WW-7
Valve, Plug	Homestead Valve Co.		WW-7
Valve, Rising Stem Gate		AFC-500	NP-1/NP-E2
Valves	DeZurik		Section 13510, Page 4, F.
Valves	Milliken Valve Co.		Section 13510, Page 4, F.

**Collier County Public Utilities Division**  
**County Approved Product List**

Substitutions for any item listed below shall be submitted using the "Vendor and Manufacturer Approval Application Form," Appendix E, and reviewed to be considered an equal.			
<b>Item</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Location in Standards Manual</b>
Valves and Appurtenances	American Darling		Section 15100, Page 2, 2.2.A
Valves and Appurtenances	Clow		Section 15100, Page 2, 2.2.A
Valves and Appurtenances	Ford		Section 15100, Page 2, 2.2.A
Valves and Appurtenances	Kennedy		Section 15100, Page 2, 2.2.A
Valves and Appurtenances	Mueller		Section 15100, Page 2, 2.2.A
Valves and Appurtenances	U.S. Pipe		Section 15100, Page 2, 2.2.A

## APPROVED BACKFLOW DEVICES

VENDOR	SIZE	MODEL NO.	TYPE	USE
Wilkins	3/4" - 2"	975	RP	Residential or commercial site that utilizes surface water for irrigation, has a fire system, or stores hazardous chemicals onsite
Ames	3/4" - 2"	Series 400B	RP	Residential or commercial site that utilizes surface water for irrigation, has a fire system, or stores hazardous chemicals onsite
Watts	3/4" - 2"	909-009 Series	RP	Residential or commercial site that utilizes surface water for irrigation, has a fire system, or stores hazardous chemicals onsite
Wilkins	2.5" - 10"	975	RP	Large size meter - potable water for commercial or residential applications
Wilkins	2.5" - 10"	950	DC	Large size meter - potable water for commercial or residential applications
Watts	2.5" - 10"	909	RP	Large size meter - potable water for commercial or residential applications
Watts	2.5" - 10"	709	DC	Large size meter - potable water for commercial or residential applications
Ames Colt	2.5" - 8"	C-200	DC	Large size meter - potable water for commercial or residential applications
Ames Colt	2.5" - 6"	C-400	RP	Large size meter - potable water for commercial or residential applications

Wilkins	2.5" - 10"	950DC	DDC	Firelines with no connections permitted - double detector check
Wilkins	2.5" - 10"	N-Shape 450DA	DDC	Firelines with no connections permitted - double detector check
Wilkins	2.5" - 10"	N-Shape 375DA	RP	Firelines with no connections permitted - double detector check
Watts	2.5" - 10"	709DCDA	DDC	Firelines with no connections permitted - double detector check
Ames Colt	2.5" - 6"	C-300	DDC	Firelines with no connections permitted - double detector check

Wilkins	2.5" - 10"	975DA	RPDA	Firelines with connections permitted - i.e. hydrants
Wilkins	2.5" - 10"	N-Shape 475	RPDA	Firelines with connections permitted - i.e. hydrants
Watts	2.5" - 10"	909RPDA	RPDA	Firelines with connections permitted - i.e. hydrants

Wilkins	2"	350DA	DCDA	Firelines with no connections permitted
Ames	2"	3000B	DCDA	Firelines with no connections permitted
Watts	2" - 3"	007DCDA	DCDA	Firelines with no connections permitted

\* All fire line connections must be metered