



ONWASA

Standards and Specifications
Review Workshop
February 17, 2010

Agenda

- Introductions
- Review of Previous Workshop
- Comments Received
- Discussion
- Next Steps
- Contact Info

Introductions

- Staff in attendance:
 - Frank Sanders, PE – Engineering Director
 - Joey Moore – GIS Project Analyst
 - Eileen Navarrete, PE – Project Manager
 - Jeff Pearson, Executive Director
 - Tim Webb, Utility Planning Manager
- Others attending

Layout of Specs

Water System Specifications (102 pgs)

- Design Standards
- Technical Specifications
- Details
- **Sanitary Sewer System Specifications (127 pgs)**
 - Design Standards
 - Technical Specifications
 - Details
- **General System Specifications (130 pgs)**

Water Section Revision Summary

- **Water Standard Design Specifications:**
 - System Hydraulic and Demand Design 2.1, C
 - Pressure/Fire Flow 2.1, H
 - Water Meter Sizing 2.1, S
 - Dechlorination 2.1, W, 3
- **Water Specification Sections:**
 - Section 33 05 23 Trenchless Utility Installation
 - Section 33 05 24 Utility Horizontal Drilling Directional
 - Section 33 11 00 Water Utility Distribution Piping
 - Section 33 12 13 Water Service Connections

Draft Sewer Specifications

- Gravity and Force Main – location
- Gravity Sewer – size/slope and material
- Manholes – Distance, diameter, inside drops
- Force Mains – Materials, restraint
- Service Connections – Location of cleanouts, materials
- Pump Stations – Type and grinder requirements
- Pump Stations – Odor control, 3-phase power, basket required, control panel
- Pump Station Site – Fencing, backflow, jib crane
- Generator – type of fuel, 3-phase power, fuel tank

Other Considerations

Other Considerations

Requirement for meters

- An individual meter will be required for each commercial unit and for each individually owned residential unit or townhome.
- An individual meter will be allowed for an apartment building that is under a single ownership.

Other Considerations

Fire Flow Requirements

Consideration being given to differing fire flow requirements depending on availability of fire flow and pressure.

1. 500 gpm with 20 psi residual pressure.
2. Maintain minimum pressure – 30 psi during periods of peak flow.



Comments Received

Comments Received

Section II, page 2: "Pipe greater than 12 feet deep must be ductile iron for the entire run between manholes."

- If properly bedded, PVC should be adequate to depths of 20 feet or more. Ductile iron is much more expensive.

Comments Received

Section II, page 2: "Services of ductile iron gravity sewer must be ductile iron as well."

- Services should be allowed to transition to PVC at some point. Ductile iron is much more expensive.
- Consider using PVC when conditions allow (i.e. not under pavement or crossing streams).

Comments Received

Section II, page 3: "All (manhole) steps shall be on the effluent side of the manhole."

- Consider not requiring steps at all.

Comments Received

Section II, page 3: "Pipe diameter and material may only change at manholes."

- What if PVC is being installed and a joint of DIP is needed for a water or storm drain crossing?

Comments Received

Section II, page 3: "Buoyancy of pipes shall be taken into consideration. For design purposes, assume water to the top of the pipe, and the pipe is empty. Buoyancy calculations must be submitted to ONWASA with plans for approval."

- Calculations should only be required for certain situations, not for every project, every run of pipe.

Comments Received

Section II, page 3:

- Manhole sizes vs. depth
 - Manholes up to 12 feet deep can be 4 ft in diameter
 - Manholes 12-20 feet deep must be 5 feet in diameter
 - Manholes greater than 20 feet deep must be 6 feet in diameter
- "Drop manholes are to be one foot larger in diameter than dictated by the table above."
- 6-ft manholes should not be required unless the main size causes it. 6-ft manholes are expensive.
- Drops shouldn't be larger than 5 feet in diameter unless the main size causes it.

Comments Received

Section II, page 3: "Manholes cannot be buried for any reason. Manholes located in pavement or inside the public ROW shall be at grade. Manholes located in utility easements shall be raise two feet above grade."

- Manholes in wooded areas (cross country) should be two fee above grade, but in nice finished grass areas (people's yards) they should be flush with the ground.

Comments Received

Section II, page 4: "Buoyancy of manholes shall be taken into consideration. For design purposes, assume water to the top of the pipe, and the pipe is empty. Buoyancy calculations must be submitted to ONWASA with plans for approval."

- Buoyancy calcs for each manhole on each project seems excessive. They should be required only in flood areas.

Comments Received

Section II, page 4: "Cleanouts must be at ground level."

- Homes and other buildings constructed with sanitary sewer drains at an elevation of one (1) foot above the next upstream manhole or lower must be equipped with a sewer backwater valve, installed at a location where it can be maintained.

Comments Received

Section II, page 4: "All stream crossings are to be as close to perpendicular to the stream as possible."

- "...and shall intersect the surface water at an angle between 75 degrees and 105 degrees."

Comments Received

Section II, page 4: "All stream crossings shall be made using PC 350 ductile iron pipe with mechanical joints."

- What about HDPE bores of creeks?

Comments Received

Section II, page 5: Aerial Crossings

- Suggest requiring encasement
- If no encasement, shall be restrained MJ or flanged with deflection less than 3 degrees.
- If no encasement, joints shall not be within 4 feet of the centerline of the stream.

Comments Received

Section II, page 5: "Precautions against freezing shall be provided as necessary." (Aerial Stream Crossings)

- Sewer shouldn't freeze.

Comments Received

Section II, page 5: "Separate grinders are also required for all pump stations capable of pumping more than 200 gpm."

- If there are basket strainers, typically comminutors are not necessary.

Comments Received

Section II, page 6: Submersible Pumps

- Are grinder pumps allowed?

Comments Received

Section II, page 6: "Odor control facilities are required at all pump stations."

- Is odor control required for all pump stations? It's usually not needed.
- Consider liquid phase odor control for additional benefit of corrosion protection, in lieu of vapor phase odor control.

Comments Received

Section II, page 6: "Weatherproofed control panels are required."

- NEMA 4X? Stainless Steel or Fiberglass?

Comments Received

Section II, page 9: "Coating shall be Duramer K-2002 by Innovative Polymer Solutions, LLC, or equal."
(Wetwells)

- Who inspects coating to assure it's done correctly? I've never seen this done. Is this the primer and topcoat? How much extra does this cost?
- Consider requiring similar coatings on all manholes.

Comments Received

Section II, page 9: “All guide rails, mounting brackets, screws, etc, must be stainless steel and sized to withstand the static and dynamic loads that may be posed by the equipment. Cable pump lift chains shall not be permitted.”

- You should probably state exactly what you want (for the cable material).

Comments Received

Section II, page 9: “A generator pad with a thickness of at least 8 inches shall be provided.”

- Concrete?

Comments Received

Section II, page 9: “A stainless steel hood with light shall be provided over the control panel. The light shall have a switch on the control panel.”

- How about aluminum? I think that's what City of Jacksonville requires.

Comments Received

Section 33 31 13 – 1, Gravity Sewers: All DIP gravity sewers shall be coated in Protecto 401.

- Protecto 401 has several warnings about installations and chemicals. Is it to be used only in certain cases? What are the costs?
- Protecto 401 warns about pulling a mandrel for deflection.
- Good to require liner on DIP: Protecto 401 or equivalent.

Comments Received

Section 33 31 13 – 2 Gravity Sewers: “Bedding: Material placed under, beside and directly over the pipe for the full width of the trench...”

- What bedding material is to be used? Stone or select fill?

Comments Received

Section 33 31 13 – 5 Gravity Sewers: “Owner or Engineer may check compaction of the bedding at any time.”

- Is there a requirement for density compaction percentage?

Comments Received

Section 33 34 00 – 1 Force Mains: “Bedding: Material placed under, beside, and directly over pipe for the full width of the trench up to a distance of 6 inches over the top of the pipe barrel prior to subsequent backfill operations.”

- Stone not usually required for force main installation.

Comments Received

Section 33 34 00 – 6 Force Mains: “...whenever a Sewer Main or Sewer Lateral crosses above or below a water main and the minimum clearance will not be met, both pipes shall be constructed of ferrous material for a distance of 10 feet on center in each direction, however, any areas pre-existing shall be handled on a case by case basis.”

- We've always interpreted rules to be for water and sewer mains and not for services.

Comments Received

Section 44 42 46 – 1 Submersible Pumps:
Manufacturers listed are ABS, Fairbanks Morse,
ITT-Flygt Corp.

- These are top of the line pumps. How about Hydromatic, Myers?

Detail SS LAT Lateral Saddle Installation Detail for
PVC Pipe

- We typically use in-line wyes now instead of saddles. Use saddles if tying to existing mains.

Additional Comments or Questions?

Next Steps

- Prepare Meeting Notes.
- Send Meeting Notes to attendees by email.
- We will receive your comments before next meeting.
- Consider comments and changes.
- Final Workshop: March 4th at 3 p.m.

See the Specs

Online at:

www.onwasa.com

Contact Information

Joey Moore	<u>jmoore@onwasa.com</u> 910-937-7529
Eileen Navarrete	<u>enavarrete@onwasa.com</u> 910-937-7525
Frank Sanders	<u>fsanders@onwasa.com</u> 910-937-7521

ONWASA
Engineering Division
228 Georgetown Road
Jacksonville, NC 28540
Fax: 910-455-5607