

# Winhall-Stratton Fire District #1 Standards for New Construction\*

January 21, 2012

*This document is for the purpose of setting standards acceptable to the Winhall-Stratton Fire District #1 for new construction of water and sewer utilities. These standards will serve as guidelines for all engineers, developers and contractors responsible for the design and construction of these utilities that will be turned over to the District after operating one-year trouble free. The District reserves the right to refuse any design or final project that does not meet these standards or have been revised without their knowledge and approval.*

*Drawings #1 through #6 are part of these Standards.*

*New connections requiring excavation of roadways are only allowed from April 15 through November 1. \**

*Amendment to the Winhall-Stratton Fire District Water and Sewer Ordinances adopted January 8, 2005. Revised January 4, 2008 and January 14, 2012.*

## Allocation of Water & Sewer Capacity:

*No project may be submitted for approval unless the developer has applied for an allocation of existing water & sewer capacity. Single family connections may be applied for on the attached "Application for Sewer Connection". The Prudential Committee will approve or reject the allocation within 90 days from date of complete application received.*

## Project Approval:

*3 sets of plans & specifications will be submitted in 1"=40' scale to the Prudential Committee for projects greater than a single family project and shall be prepared by a consulting civil engineering firm licensed to practice in the State of Vermont. They shall be submitted to the Prudential Committee prior to or simultaneously with the submission to the State of Vermont. The Prudential Committee will approve or reject the plans within 90 days from date of receipt of all information requested.*

## Sewer Design & Construction Standards:

### A, Sewer Lift Stations:

*Sewer lift stations will be provided with the following:*

- 1. Meyers grinder stations*
- 2. 2 110 volt inside outlets*
- 3. Lightweight aluminum hatches*
- 4. Ladders/rails to access interior of tank*
- 5. Sealed stainless steel cabinets with hour meters on the outside*
- 6. Cabinet oriented for safe access and stabilized*
- 7. Simplified power sources*
- 8. 2 Exterior 110 v outlets*
- 9. Connections for emergency generators*
- 10. Ball valves, no gate valves isolating lines*
- 11. Visible alarm lights*
- 12. Signage "confined space", "alarm condition please call..."*
- 13. Wiring diagrams with pump information*
- 14. Lightning protection with auto reset*
- 15. Access to station with a vehicle for repairs/monitoring*

- 16. Spare pump and electrical parts and fuses included*
- 17. Sewer lift stations will be supplied with RTU's and telemetry compatible with the existing Fire District systems.*

## **B. Sewer Lines and Manholes:**

- 1. All Sewer lines shall be constructed with Polyvinyl Chloride or Polyethylene Plastic Pipe installed on a bed of crushed stone in accordance with Drawing #1 attached.*
- 2. No multiple utilities in the same ditch (10 ft min water and sewer separation)*
- 3. Manholes 5 foot minimum diameter with 32" cover*
- 4. Water retention pans installed*
- 5. As-builts provided upon completion in digital format and reproducible Mylar*
- 6. Steps installed for access, all lined up and evenly spaced*
- 7. Drop manholes to have diversion pan*
- 8. Inverts poured, not brick*
- 9. Pre-cast risers flush with ground not buried in right-of-ways, lawns and paved roads, exposed no more than 6 inches in right-of-ways. No risers on top of cones. Mulch only for landscaping, not buried or with plantings on top of covers. Lightweight covers if not in traveled roads.*

## **Water Design & Construction Standards:**

### **A. Water Supply Wells:**

- 1. Knife switch location in relation to well-head (orientation and distance)*
- 2. Well knife switches and shut-offs labeled with well number*
- 3. Cut sheet and information on wells provided*
- 4. Water lines in buildings to be constructed of ductile iron or copper, no PVC*
- 5. No multiple utilities in the same ditch (10 ft min water and sewer separation)*
- 6. As-builts provided upon completion digital and on reproducible Mylar*
- 7. Sounding tube installed in well*
- 8. Control panels located for easy access*
- 9. Lightning protection installed*
- 10. Stainless steel nuts and bolts*

## **B. Hydrants**

- 1. Mueller Centurion hydrants shall be installed in accordance with Drawing #4 attached.*
- 2. Hydrant valves no more than 10 feet from hydrant, cover no deeper than 1 foot*
- 3. 4 inch outlet on hydrant facing road*
- 4. 8 foot clear access on each side of hydrant*
- 5. Flags included*
- 6. Hydrant waist height (center of 4 inch cap at 3 feet)*
- 7. Bollards protecting hydrant if in an intersection or close to road*
- 8. Painted red with appropriate color cap relating to flow/pressure*

## **C. Water Lines:**

- 1. All water lines shall be constructed with Class 5 Zurbette Ductile Iron Pipe installed on a bed of crushed stone in accordance with Drawing #2 attached.*
- 2. Tees & angles greater than 15 degrees shall be with thrust blocks or other approved restraint in accordance with Drawing #3 attached.*
- 3. Hydrants shall be anchored in accordance with Drawing #4 attached.*
- 4. No multiple utilities in the same ditch (10 ft min water and sewer separation)*
- 5. As-builts provided upon completion on digital and reproducible Mylar*
- 6. Valve covers in pavement are to be at pavement level*
- 7. Valve covers in right-of-ways are to be buried no deeper than 1 foot*
- 8. Proper gate boxes to be used for all valves*
- 9. Curbstops are to be located at the property line out of any traveled lanes. Curbstops are to be exposed at least 6 inches above ground level. Proper ties to all curbstops are to be provided (no use of trees or moveable objects as reference points)*

## **D. Water Meter Buildings:**

- 1. No vaults or confined spaces, heated buildings with basement are acceptable*
- 2. All piping to be ductile or copper, no PVC!*
- 3. All water lines are to be secured and supported properly*

4. *Badger meters with Badger remotes only*
5. *Meters to be installed in a horizontal position*
6. *Meters and remotes to read to 100 gallons minimum*
7. *Stainless steel nuts and bolts*
8. *Pipes painted if ductile*
9. *Piping located to allow for repairs and maintenance, easy access*
10. *10.No sheet rock on walls, only plywood*
11. *1 foot cement "curb" on the walls*
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13. *No sheet rock on walls, only plywood*
14. *1 foot cement "curb" on the walls*
15. *Lines tapped for chemical feeds*
16. *Spigots for sampling (located before isolation valves)*
17. *Ball valves not gate valves when possible*
18. *Any basement areas to have proper ventilation (fans, blowers, etc.)*
19. *Pressure gauges on each line*
20. *Emergency generator hookups included with panels*
21. *Water meter buildings will be supplied with RTU's and telemetry compatible with the existing Fire District systems.*

#### **E. Water Storage Tanks:**

1. *Sealed Bilco hatches, minimum 3 foot height*
2. *Safety nets installed*
3. *Float controlled, no pressure sensors*
4. *Vents and overflows to have stainless steel screens installed*
5. *Valve boxes exposed for quick access*

#### **F. Booster Stations and PRV vaults:**

1. *Fans installed for proper ventilation*
2. *All gauges readable and accessible*
3. *No sheetrock on walls, plywood only*
4. *No vaults or confined spaces, heated buildings with basement acceptable*
5. *110 volt power outlets installed*
6. *All PRV's accessible for maintenance*
7. *Storage tanks of approved construction*
8. *Drains in proper location to allow for drainage*
9. *1 foot cement "curb" on the walls*

### ***G. Water and Sewer Service Connections:***

- 1. Water service connections to the WSFD water mains shall be carried out in accordance with Drawing #5 attached.*
- 2. Sewer service connections to the WSFD sewer mains shall be carried out in accordance with Drawing #6 attached.*

### **Construction Site Inspection:**

- 1. The developer shall designate a Project Manager responsible for all communication with the WSFD.*
- 2. The WSFD shall designate a representative to communicate with the Developer's Project Manager.*
- 3. No water or sewer work will be carried out in the field without the representative of the WSFD present.*
- 4. The WSFD will be notified 48 hours in advance of any water or sewer work to be carried out.*
- 5. Work done with the omission of this notification shall be uncovered as necessary and/or reconstructed as necessary to establish whether the work was carried out in accordance with the plans & specifications.*

### **Final Acceptance of Work:**

- 1. As built drawings on the same scale as the approved drawings and specifications shall be prepared by the consulting engineer responsible for the original design and certified by him as the actual installed work. The as-built drawings shall show all deviations in location of the work. Specifications shall be re-submitted with all manufacturers' installation and operating instructions in an appropriate 3 ring binder for the project.*
- 2. After one year of operation of the work and completion of item 1. Above, the developer will notify the WSFD that the work is complete and the WSFD will accept or reject the work within 90 days.*