

**ORDINANCE 1-2013**

**AN ORDINANCE OF THE TRUCKEE SANITARY DISTRICT AMENDING  
CHAPTER 7 AND STANDARD DRAWING FIGURE 19  
OF THE TRUCKEE SANITARY DISTRICT CODE**

The Board of Directors of the Truckee Sanitary District does ordain as follows:

**SECTION 1.** Chapter 7, entitled "INSTALLATION OF SANITARY SEWER FACILITIES" Section 7.16, Residential/Small Commercial Pump Systems, is hereby amended to read as follows in the attached Exhibit "A".

**SECTION 2.** Standard Drawing Figure 19 entitled "Residential & Small Commercial Pump Station" is hereby amended to read as follows in the attached Exhibit "B".

**SECTION 3.** This Ordinance shall take effect thirty (30) days after adoption.

**SECTION 4.** The Clerk of the District is directed to enter a certified copy of this Ordinance in the minutes of the Board of Directors.

**PASSED AND ADOPTED** by the Board of Directors of the Truckee Sanitary District on the 16th day of May 2013, by the following roll call vote:

**AYES:** Affeldt, Gilmore, Smart, Sweet, Van Gundy

**NOES:** None

**ABSENT:** None

**ABSTAIN:** None



**Jerry Gilmore,**  
President of the Board of Directors

**ATTEST:**



**Thomas S. Selfridge,**  
Board Secretary



## EXHIBIT A

### 7.16 Residential/Small Commercial Pump Systems

For all building sites in which the improvement plans designate a pumped service or for any owner wishing to construct a structure on a portion of a lot or parcel for which gravity service was not provided, the owner shall install a sewage pump as specified herein for the purpose of lifting sewage to the public sewer. Where installed, such installations shall be maintained by the owner at the owner's expense.

A pumped sewer service shall consist of a gravity sewer, a waste water holding tank, one or more pumps, a force main, electrical controls, and an alarm system. The pump and holding tank shall be installed in a location that provides at least a 48 inch diameter x 36 inch high area above the center of the holding tank that is free and clear of any obstructions to allow access for inspection and maintenance. If height clearance is not met, a removable access panel located above the center and at least 24 inch wide x 36 inch long, must be installed. If the holding tank is located outside of the building foundation it shall not be located within 5 feet of any building used as a dwelling, within 10 feet of any property line or within 50 feet of any lake, stream, or reservoir

A duplex pump system is suggested for residential applications when more than one residence is served by the same pump system. Commercial enterprises which contain public restroom facilities shall be required to operate and maintain a duplex pump system.

#### **Installation:**

**Gravity Pipeline** - The gravity sewer lateral from the building sewer to the waste water holding tank shall be tested in accordance with Appendix A-6, Section A-6.10, Testing of Sanitary Sewer Facilities, page 107. Pipe must be mechanically sealed to a watertight condition at the point of holding tank penetration. Gravity pipe shall be restrained as required to prevent separation from the tank. The gravity sewer lateral is subject to the requirements of Tracer Wire on Building Sewer Laterals, Section 7.12, page 33.

**Waste Water Holding Tank** - The holding tank shall be a solid impervious walled container rated for both the liquid it contains and the method of installation including direct burial. All holding tanks that are buried must have an antfloatation device to prevent the tank from rising due to ground water. All direct burial polyethylene tanks must be approved in writing by the General Manager. All openings in the walls of the tank, including pipe or conduit penetrations, are to be mechanically sealed to prevent inflow of surface water, infiltration of ground water, or exfiltration of contained wastewater. The tank shall have a minimum capacity of 200 gallons. The tank shall be vented with a 1 1/4 inch minimum vent line. Tanks shall extend a minimum of 2" above finished grade, and have a sealed lid that is rated for the snow load or traffic load as applicable. It shall be the owner's responsibility to determine groundwater conditions that may

cause the tank to float when empty and to provide the appropriate solutions to prevent it. Internal ballast that reduces the tank capacity below 200 gallons will not be acceptable. Tanks shall be installed to provide a minimum depth of 36" below the invert of the building gravity sewer inlet.

**Pumping Equipment** - Pumps shall be centrifugal of the non-clog or grinder type. Non-clog pumps shall be capable of passing a minimum of a 2-inch diameter sphere. Pumps and motors shall be sized so as to maintain a minimum of 4-feet per second flow velocity throughout the entire discharge piping system when a maximum of one pump is pumping under actual installed conditions. A copy of the pump specifications and pump curve shall be required and made available to the District inspector before testing is allowed. Installation of pumping equipment shall be in accordance with pump manufacturer's recommendations including a vent hole in the standpipe, above the high water float, to purge the unit of trapped air. Pumps shall be mounted on a Rail System to allow the removal and installation of the pumps from ground level during a flooded waste water holding tank condition.

**Electrical** - The electrical control cabinet shall be isolated from the holding tank. All wiring, controls, conduits, boxes, etc. shall meet or exceed National Electrical Code (NEC) requirements for materials, ratings, placement, and installation, etc. All equipment located in the holding tank shall be U.L. approved for its specific and proper use. All wiring in the area above the holding tank shall be provided with protection from physical damage by a combination of cable routing and/or conduits. Any wiring which hinders entry or view into the holding tank when opened will not be acceptable. All electrical connections shall be in an approved electrical junction box. All conduits leaving the holding tank shall be sealed. A circuit disconnecting means for all circuits must be located within sight of the holding tank unless a lockout device is installed on the disconnecting means for each individual circuit attached to or related to the pump system at the holding tank.

**Alarm System** - The holding tank and electrical controls shall include an alarming system that produces an audible and visual alarm when the liquid level in the holding tank exceeds a predetermined safe level. The audible and visual devices indicating such an alarm state shall be located at all inhabited buildings or structures served by the sewage system with the intent to notify occupants inside the house of the possibility of a wastewater spillage. The alarms system power shall be supplied through a separate, dedicated circuit from the pump power supply. It is recommended that the alarm system include a battery backup to allow the alarm to function during an electrical power outage. For commercial applications that serve multiple buildings, the alarm system must also include an auto dialer system that will phone a responsible party and notify them of the alarm status of the pump system.

**Discharge Piping** - The discharge pipeline shall be ductile iron, polyvinyl chloride (PVC), high density polyethylene (HDPE), or an approved pressure rated material designed for wastewater. The piping shall be pressure class 150 minimum and rated for the pressure service being installed. The pipeline size shall be **2 inch nominal diameter minimum for non-clog pumps, and 1 ¼ inch nominal diameter minimum for grinder pumps**. The discharge pipeline shall be fitted with an approved pressure rated sewer check valve and an isolation gate or ball valve. The

discharge pipeline shall also include a 1/4 inch valve pressure test port located between the check portion of the check valve and the isolation valve. The isolation valve shall be located on the discharge side of the check valve. Both valves and the test port shall be located in an accessible area either inside or outside of the holding tank in such a manner that they are accessible for operation and maintenance or repairs.

All discharge pipelines are required to have a tracer wire installed adjacent to the sewer pressure pipe. Tracer wire shall consist of 10 AWG minimum with THW, THHW, TW, THWN, or other approved wet location insulation. Wire shall be attached to the top of the force main with tape at appropriate intervals. Wire shall be continuous along entire length of force main, beginning at the waste water holding tank and terminating at the property line cleanout. Splices shall incorporate approved underground splice kits. Each run of tracer wire shall be tested for continuity following backfill.

In cases where the District service lateral stubbed to the property line is a force main (positive slope), the tracer wire following the private force main discharge piping shall be brought to the surface and boxed to grade at the property line. It is recommended that the tracer wire be placed in conduit where it surfaces through the ground at the property line and covered with a concrete box with a cast iron lid labeled "sewer" or "S".

Discharge pipelines shall have a trench cutoff block located every 50 linear feet of pipe, at changes in pipeline type and/or grade, and at the pump tank, and as designated by the General Manager. Thrust blocks shall be located at all fittings that change the direction of the pipe. Thrust blocks shall be constructed of concrete with a minimum size of 2 cubic feet.

A siphon break shall be installed on the discharge pipeline at its connection point to the gravity sewer. A cleanout in accordance with the Installation of Cleanouts, Section 7.10, page 31, shall be placed immediately downstream of the siphon break in the discharge pipeline at the property line, if the siphon break can be placed in a practical manner such that sufficient gravity slope can be maintained from the property line to the District main pipeline.

All discharge piping is required to be protected from freezing, and is required to have a minimum of 30" of cover. It is the owners responsibility to address site specific conditions and install freeze protection as necessary. Protection may include provisions of bypass drains, insulation, and heat tape.

### **Inspection and Testing:**

The gravity portion of the pipeline from the building to the holding tank and the Waste Water Holding Tank shall be tested in accordance with Appendix A-6, Section A-6.10, Testing of Sanitary Sewer Facilities, page 107. For testing purposes the Waste Water Holding Tank shall be considered a manhole.

A visual inspection shall be performed to check the following:

- ▶ proper venting of the holding tank.
- ▶ watertight mechanical seals on the holding tank lid and at all pipe or conduit penetrations.

The discharge pipeline shall be pressured tested with air or water to a pressure of 150 percent of the calculated maximum possible working pressure (the Total Dynamic Head, TDH) for the installed pump. The maximum possible working pressure for the system can be assumed to occur at the pump's shut off point. The pump shut off point can be obtained from the pump's performance curve by following the curve to the point at which it meets the axis representing the head of liquid. The pressure must remain constant for 10 minutes. The required test equipment shall be provided by the owner or owner's agent and be acceptable to the District.

The electrical system and controls shall be inspected and approved by the local governing authority for the building electrical inspection. Pumping and alarm tests shall only be performed after the electrical system has been inspected and approved by the proper authority. The District Inspector shall require proof of such approval before starting any of the following functional tests:

- ▶ The pump shall be started and stopped so the check valve can be tested for proper operation.
- ▶ The pumping system shall be tested for a discharge pipeline velocity of 4 feet per second. The flow velocity test shall be performed with the discharge pipeline full of water and the pumping system functional under normal operating conditions.
- ▶ The pump shall be run to pump down the holding tank to allow a visual inspection of the tank and to check it for leaks.
- ▶ The alarm system shall be checked for proper function of audio and visual alarms.

Septic tanks may be converted to house the Waste Water Holding Tank, but are prohibited from being used as the Waste Water Holding Tank. Converted Septic Tanks must have drain holes drilled in the bottom of the tank to drain trapped water, and appropriate solutions to prevent the Waste Water Holding Tank from floating.

### **Deviation from Requirements:**

Any deviation from the above stated requirements shall be approved in writing by the General Manager.

# EXHIBIT B

NOTE:  
REFER TO TSD CODE,  
RESIDENTIAL PUMP SYSTEM  
SECTIONS FOR INSTALLATION,  
TESTING, AND MAINTENANCE OF  
EXISTING FACILITIES

\*CHECK VALVE, TEST PORT, AND  
ISOLATION VALVE CAN BE PLACED  
INSIDE PUMP TANK OR OUTSIDE IN  
AN INSULATED BOX

TRACER WIRE ATTACHED TO TOP  
OF FORCE MAIN. CONTINUOUS  
ALONG ENTIRE LENGTH OF FORCE  
MAIN. WIRE MUST BE ACCESSIBLE  
WITHIN 5' OF PUMP TANK AND  
AT PROPERTY LINE.

VENT PIPE 1 1/4" DIAMETER  
MINIMUM, VENT 8' ABOVE  
GROUND MINIMUM OR  
CONNECT TO BUILDING  
SEWER VENT SYSTEM

EXTERIOR OR INTERIOR  
AUDIBLE AND VISUAL  
ALARM (MUST BE AUDIBLE  
INSIDE LIVING SPACE)

PUMP CONTROL PANEL

DISCONNECT SWITCH

ELECTRICAL CONDUITS  
MUST HAVE N.E.C.  
APPROVED SEALS TO  
PREVENT GAS FROM  
ENTERING PANEL OR  
JUNCTION BOXES

WATERTIGHT STEEL  
OR FIBERGLASS LID

FINISHED GRADE

VENT PIPE (SLOPE  
TOWARD HOLDING  
TANK)

MECHANICAL SEAL  
(TYP. OF ALL PENETRATION)

BUILDING GRAVITY SEWER

36" MIN

HIGH LEVEL ALARM FLOAT

PUMP "ON" FLOAT

PUMP "OFF" FLOAT

LOW LEVEL PUMP "OFF" ALARM (OPTIONAL)

TANK SHALL BE DESIGNED AND INSTALLED TO PREVENT FLOATING UNDER  
HIGH GROUNDWATER CONDITIONS.

Scale: NTS



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Ordinance 1-2013: TSD Code Book Standard Drawings

## Residential/Small Commercial Pump Station

Figure  
19