

# ***GRINDER PUMP INFORMATION SHEET***

## **BACKGROUND INFORMATION**

The use of low-pressure sewers has become very widespread in the last 25 years and has resulted in the provision of sewer service in many areas where gravity sewers would have been either physically impossible or considerably more expensive in terms of both resources and environmental damage.

The grinder pump is the key component of the low-pressure sewer. Although their use is becoming more common, people remain skeptical about grinder pumps. Below are answers to the most commonly asked questions about grinder pumps.

### **WHAT IS A GRINDER PUMP AND HOW DOES IT WORK?**

A grinder pump is a semi-positive displacement pump that receives waste from a home and pumps it into a low-pressure sewer line. As its name suggests, the grinder pump grinds up any solids so that they can be pumped also. Waste enters the unit through a 4-inch PVC house connection and is pumped out through a 1 1/2 -inch PVC pressure line. The grinder pump also has a 60-gallon holding tank which stores the waste. As a volume of new waste enters the tank, the same volume of stored waste is pumped out. This prevents the waste from going septic.

### **WHY DO I NEED A GRINDER PUMP?**

Grinder pumps are used to provide sewer service to areas that cannot be serviced by a gravity sewer. Most often this is due to topographic elevation issues, but could also be for economic or environmental reasons.

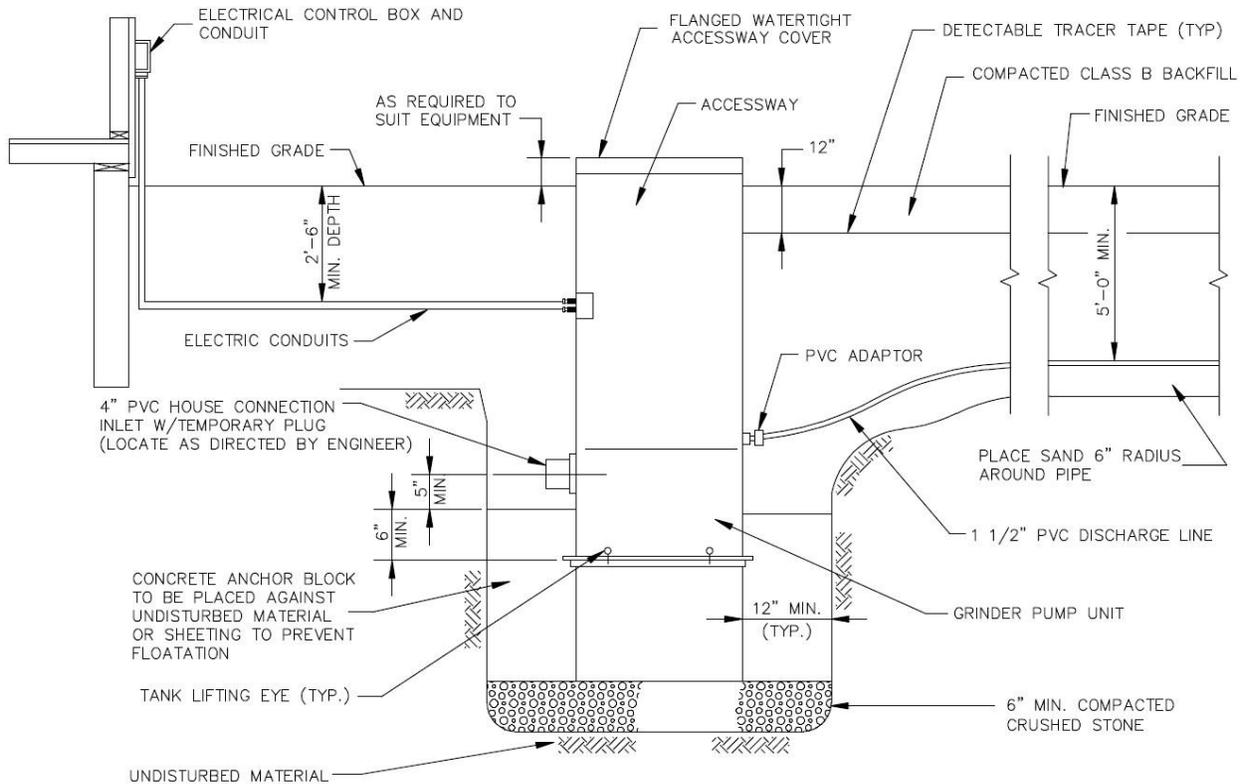
With a gravity sewer, the waste flows by gravity in a pipe from a higher elevation to a lower elevation. This requires that the topography of the land provide for enough change in elevation in the pipe and enough ground cover to allow the waste to flow downhill. The same principle holds for a gravity house connection. The waste pipe exiting a house must be of a slightly higher elevation than the sewer main in the street so that the waste leaving the house will flow downhill toward the main.

Low-pressure sewers are used when it is not possible or practical to carry waste by gravity. Low-pressure sewers are effective in low-lying areas because they pump the waste from the lower areas into a gravity line or a pump station. Likewise, a pressure house connection uses the grinder pump to pump waste from the house into a low-pressure sewer line or sometimes directly into a gravity line. Houses at the bottom of a hill at the end of a dead-end street are good candidates for a grinder pump, as are houses set below the road at the bottom of a slope.

### **WHAT NEEDS TO BE DONE TO INSTALL A GRINDER PUMP?**

The contractor must make two main excavations to install a pressure house connection; the excavation for the grinder pump itself and the excavation for the 1 1/2-inch pressure building connection. The grinder pump excavation is approximately 6 feet deep by 6 feet wide. The pressure sewer excavation is about 4 feet wide, with varying depth. These are typical dimensions, but are subject to change for each unique situation. It is recommended that the

pressure sewer connection route be as direct as possible and avoid trees, gardens, rocks and other landscaping. In areas with shallow ledge, blasting may be necessary to excavate. Below is a cross-section of a grinder pump installed in the ground.



TYPICAL GRINDER PUMP INSTALLATION  
N.T.S.

**WHAT WILL THE INSTALLED GRINDER PUMP LOOK LIKE?**

The installed grinder pump has a lid that extends approximately 4 inches above the ground surface and a control box that is mounted on the outside of the house. The lid must be exposed to provide easy access to the pump unit. The control box has a mounted light that serves as a visual alarm during any pump malfunction and must be visible to the homeowner.

**DO I NEED TO DO ANYTHING TO PREPARE FOR THE GRINDER PUMP?**

A homeowner must do three things for proper installation of the grinder pump:

1. Fill out the enclosed Sewer Connection form and indicate the location you would like the grinder pump to go and where the service for your house connection should be left in the street. This ensures that when the contractor installs the main sewer by your house that he will leave a service connection in a location that allows you to easily connect into the new sewer based on your existing plumbing.
2. Make sure that you have at least 100 amps of electric capabilities with a 20-amp isolator. The 20 amps are required to run the pump and control box. If the electrical run from the

control panel on your house to the grinder pump is more than 100 feet, the line must be on a 300-amp service. You may need to consult an electrician for this work.

3. At the time of the actual installation of the grinder pump unit, you will be required to have your septic tank pumped and filled. As stated in the attached grinder pump policy, you must provide the Town of Scituate with a certificate verifying that this has been done. This is required on all gravity and low-pressure services in the Town of Scituate.

*WHAT MAINTENANCE IS REQUIRED WITH A GRINDER PUMP?*

The owner is responsible for any maintenance of the grinder pump. Wear and tear on a grinder pump varies depending upon several things including the number of people in a household and the frequency that the facilities in a household are used. A grinder pump typically needs to be pumped every 7 to 9 years to eliminate any accumulated solids in the holding tank.

*WHAT HAPPENS DURING A POWER OUTAGE?*

The grinder pump has 24-hour holding capacity within its holding tank. (Based on a 4-person household.) You will be able to use your facilities during this time. However, like any power outage situation, most household activities are not being conducted in a normal manner; no hot water is available for showers, there is no clothes washer use, dishwasher use, etc. This decreases the use of sewer facilities. A generator can operate the grinder pump providing it has sufficient electric capacity.

*HOW MUCH WILL THE GRINDER PUMP COST ME?*

Prior to the grinder pump hookup, you may need an electrician to come and install the necessary 20-amp service, depending upon the existing wiring in your home. As previously mentioned, you will also need to have your septic system pumped. Operation costs will vary depending on the frequency of use of the grinder pump. A typical single family home will use 250 gallons of water per day. The grinder pump for this home will consume about 200 kwh of electricity per year. At \$0.15/kwh x 200 kwh = \$30.00 of electricity per year to operate the grinder pump.

*HOW WILL I KNOW WHEN TO HAVE MY GRINDER PUMP INSTALLED?*

The first construction you will see on your street is the installation of the mainline sewer (gravity or low-pressure). The crew not only installs the sewer main, but also leaves your house connection tee off the main in the street at the location indicated by you on the sewer connection form. After the mainline sewer has been completed for your street, the crew will return and install a pressure service line off of the main line up your property line, where they will also install a valve box. The sewers will then be tested for leaks. If the lines pass the leakage test, you will receive a notice from the Town of Scituate stating that you have one year to have your grinder pump installed and to connect into the mainline sewer.