SECTION 5.2 –GRINDER PUMP INSTALLATION

For Genoa and Oceola Township Municipal Systems that are Operated by the MHOG Utility Department

Grinder pumps typically service single family residences where the municipal sewer is a low-pressure force main. Sometimes grinder pumps are connected to gravity main when the parcel in question cannot be served by gravity. This procedure has been developed to assist property owners with the various steps associated with completing a new service connection to the municipal sanitary sewer system via a grinder pump or relocation of an existing grinder pump on a property.

1. Siting Requirements

Eventually, grinder pumps will break down and alarm when they reach a high water condition. The Utility Department services grinder pumps when the homeowners call and notify the Utility Department of a problem. As a result, the grinder pump must be located in an area that is serviceable by our technicians and their equipment. As part of site plan approval for proposed construction, the location of the grinder pump and alarm panel must be shown on the plans and approved by the Utility Department. Staff is available at no cost to meet with the property owner or builder regarding the proposed grinder location, if required. For a grinder pump location to be approved, the following conditions must be met:

1) The depth of the grinder can shall be 93 inches as shown on Page 12 of **Appendix D**;
2) A minimum of 3-feet of clearance shall be maintained around the grinder pump from any structure to allow technician access for service and repair;
3) Landscaping, such as rocks or retaining walls, trees that hang over the grinder pump access lead, steep slopes, or ornamental bushes or fences that preclude or make access difficult are prohibited; and,
4) A minimum of 6-foot access to the grinder pump shall be maintained from the road or driveway to allow for a small excavator to remove or repair the pump. Fences, retaining walls, steep slopes, or unsafe steps are not permitted to access the grinder pump.

Please note that the inability of the technicians to safely access the pump for service may result in termination of service by MHOG.

In the event of a grinder pump relocation due to remodeling, addition to a home or garage, parcel split, or demolition and reconstruction of a home, the Utility Department, at no charge will remove the grinder pump from the pumping chamber and shut off the service valve to the property. This way the homeowner's contractor can remove and demolish the pumping chamber. During demolition, the Utility Department will witness the cutting and capping of the discharge line from the grinder pump. The location of the cut and capped line should be marked with a post above grade, or if not practical to mark above grade, mark below grade with a metal stake or rod.

2. Service Piping

A grinder pump system consists of a 4-inch diameter gravity service line and a 1.5-inch pressurized discharge line. **Attachment 3** provides a drawing of a typical grinder pump installation including the gravity line and discharge line, electrical service, property owner, MHOG installation responsibilities, and approved materials. The following describes the installation procedure for the service piping:

Property Owner

The property owner shall be responsible to meet with MHOG staff to determine the location of the grinder pump chamber. The homeowner's contractor is also responsible to connect the 4-inch gravity line to the grinder chamber. Care must be exercised by the contractor to not extend the 4-inch pipe more than 3.5-inches into the rubber boot on the grinder chamber or it can otherwise interfere with setting and removal of the grinder pump. It is highly recommended, even though the inspection of the gravity line falls under the jurisdiction of the Livingston County Building Department, to have MHOG staff inspect the pipe prior to backfill.

MHOG

MHOG shall be responsible to install the ballasted chamber and the discharge line from the chamber to the shut off curb box at the roadway. MHOG will make all attempts to install a single, un-spliced HDPE pipe. In certain instances, this may not be possible to access the existing line or install the new line in the case of a relocated grinder pump. In the event of a relocation, please note that additional charges may be required if a new line has to be installed from the grinder pump to the curb shut off box. The line will be installed at a depth of at least 5-feet to prevent from freezing, especially under driven surfaces.

Easement

Prior to MHOG conducting any work on site, the property owner must sign an easement, a copy is presented in **Appendix B.** This easement provides access to remove, repair, and/or replace the grinder pump or the service line, including excavation. Permitted land uses over and within easement include driveways, non-permanent moveable structures such as sheds, landscaping features such as trees, shrubs, and rocks. Utility operators will make reasonable efforts to remove features in the easement; however, they will not be responsible for repair and replacement. Any grass or driven surfaces will be restored following utility work. The Utility Department is also not responsible for repair of irrigation systems damaged in the easement during repair activities. Prohibited structures in the easement include permanent structures such as garages or home additions. In addition, retaining walls and fences are also prohibited in the easement.

3. Electrical Service

The homeowner, is responsible for the electrical service from the home circuit or service panel to the exterior disconnect, the grinder alarm and operation panel, and from the panel into the grinder pump chamber. Details of the electrical installation are provided in **Attachment 3 and Appendix D**. In general, the service must be double pole 30 Amp breaker. Wiring shall be 3 wire plus ground to provide two hot wires, a neutral, and a ground. The 30 Amp disconnect on the outside of the home must be fused or blade style to permit operators to service the pump panel safely without having to turn off interior breakers. If a generator is used to power the grinder pump, it must be connected to the main service panel and be of sufficient wattage and amperage to operate the grinder pump along with other household demands such as a well pump or other appliances.

4. Charges and Fees

In the event of a new installation on a previously vacant parcel of land, the homeowner assessment or cost to purchase into the district will provide them with the supply and installation of a service tap, a shut off valve and access box, a check valve, and up to 30 feet of piping from the pump to the shut off valve. It will cover all costs of the Utility Department Installation with the exception of the electrical and home plumbing described previously.

In the event of a required pump relocation due to remodeling, addition to a home or garage, parcel split, or demolition and reconstruction of a home, the homeowner will bear all costs of the relocation with the exception of the grinder pump itself. On the cost table presented in Appendix C, are the costs for the various components that may or may not be required as part of a grinder pump relocation. A cost not shown on the table is the actual construction cost for installation of the pump chamber and connection of the discharge line. This is due to the cost being variable based upon site conditions and variable distances between the pump and connection point of the discharge line. The Utility Department will collect a $7,623 escrow to perform the construction and return any unused portion along with the contractor's invoice to the homeowner or builder.

Related Documents in MHOG Utility Department Connection Manual:

Attachment 3 – Utility Department Standard Detail for Grinder Pump Installation
Appendix B – Sample Grinder Pump Easement
Appendix C – Grinder Pump Fee Table
Appendix D – E-one Corporation Grinder Pump Installation Guide