

**Grinder Pump Study Committee (GPSC)**  
**Minutes of Meeting Held on Wednesday, August 19, 2015**

**Committee Members In attendance:**

Tom Gilroy, Chairman	Dan Burke, Vice Chairman
Curtis Barton	David Foley
Peggy Dunn	Ed Safran
Bob Chevalier	
Joyce Cote, Recording Clerk	

Meeting was Chaired and called to order by Tom Gilroy at 7:00 p.m

**Curtis Barton:** Motion to approve minutes from July 29, 2015; Peggy Dunn 2<sup>nd</sup>; All in favor.

**Tom Gilroy:** Would like to proceed with finalizing the recommendation for the by-law change. Does anyone connecting to Sewer need to follow the Sewer Use Regulations?

**Mike Vosnakis:** Yes.

**Curtis Barton:** How is this communicated to the drainlayer?

**Curtis Barton:** Motion to add the word “pump” between grinder and system and remove “per the Sewer Use Regulations.” Bob Chevalier 2<sup>nd</sup>. All in favor.

**Tom Gilroy:** Keep paragraphs D & E as originally voted on by Town Meeting – voted by GPSC at last meeting.

**Tom Gilroy to send proposed amended by-law to Paul Cohen for Town Counsel review before 8/31/15 presentation to Selectman.**

**Dave Foley:** Has a concern that the current by-law does not include repair of pumps due to freeze ups – referenced Mike Vosnakis’s email on this topic (attached). Actually does not understand how the wording of the current by-law releases the Town from repairing a grinder pump as noted in Mike’s Vosnakis’s email.

**Tom Gilroy:** Believes this should be the homeowner’s responsibility.

**Richard Gorham – 15 Fenwick Drive:** Is on third pump; two froze. Weston & Sampson thawed line; grinder pump failed and was replaced. He feels Town should pay.

**Tom Gilroy:** How many on Fenwick have frozen? Richard Gorham believes there were others, however, pump did not require replacement.



**Paul Cohen:** Puzzled – Town has been criticized for doing too much based on the fact that TM voted down the request for additional funds to complete the grinder pump maintenance work. Now the GPSC is criticizing the Town for not doing enough.

**Dave Foley:** What do we do in a case where the line froze from the street to the pump?

**Mike Vosnakis:** Homeowner was away; line froze; pump stopped working. It appeared that the driveway had been replaced and there was a question as to whether or not the Town should be responsible.

**Amendment to Minutes – approved (9/30/15):**

**Peggy Dunn:** How many freeze-ups have we had? Dave Foley replied: 6

**Tom Gilroy:** Requested that Mike Vosnakis research the cost for insulating pumps over time.

**Mike Vosnakis:** Labor costs will be high; material costs are minor; not a one-time cost; will later need to maintain which will increase cost.

**Tom Gilroy:** Requested that Mike Vosnakis research pump out cost.

**Mike Vosnakis:** Many issues surrounding pump outs – will vary per pump.

**Richard Gorham:** Difficult to listen to Committee members and speakers argue about issues and Weston & Sampson procedures.

**24 Northview Resident:** What if homeowner insulates grinder pump and it still freezes up?

**Mike Vosnakis:** If that happens, there are other issues and we would investigate the problem and resolve.

**Dan Burke:** It is difficult to deal with all issues that may occur. The original intent of the GPSC was to provide equal support to grinder pump owners. Should only repair pumps on an as-needed basis. Not in favor of insulating all pumps if only a small number may need it. Can't solve all problems.

**Dave Foley:** Cited \$18,000 power cable issue – responsibility not defined (attached). Does the Town expect the homeowner to repair on own? This is his interpretation.

**Mike Vosnakis:** The item was listed – Town was potentially going to fix it.

**Dave Foley:** Objects to “DPW approved” wording.



**Jim Clancy – Town Meeting Rep and Finance Committee Member:** Proposed the following wording on Paragraph C – Existing single or two family residential grinder pumps and new DPW approved residential grinder pumps and installed controls shall be maintained, repaired or replaced by the Town of Chelmsford.

**Ed Safran: Motion to accept wording change referenced above by Mr. Clancy; Tom Gilroy 2<sup>nd</sup>; All in favor.**

**Tom Gilroy:** Confirmed with Paul Cohen that there is an Article (place holder) on the Fall Town Meeting Warrant to adjust the Sewer Enterprise budget to accommodate the cost for Grinder Pump maintenance through FY16.

**Dave Foley:** Has a concern about certain aspects of Weston & Sampson's proposed plan (specifically pages 3 and 4 – attached).

**Tom Gilroy:** Premature to discuss this – may discuss at a later date.

**Peggy Dunn motion to adjourn; Dave Foley 2<sup>nd</sup>. All in favor. Meeting adjourned at 8:18 p.m.**



## Grinder Pump By Law

### § 132-3

#### Grinder pumps.

[Added 4-28-2014 ATM by Art. 25]

##### A.

The preferred method of discharge of sewage from an individual building or group of buildings to the Town's sewer system is gravity flow. Grinder pumps shall be **used approved** only after alternatives for gravity service connections have been thoroughly considered and, in the opinion of the Town of Chelmsford Department of Public Works, such alternatives cannot reasonably discharge to the Town's sewer system by gravity flow. Grinder pumps shall only be used in accordance with regulations established by the Town of Chelmsford Department of Public Works.

##### B.

Licensed Drain Layers ~~Each owner/applieant~~ shall submit required documentation and apply for a sewer connection permit and install ~~shall the grinder system, per the Sewer Use Regulations.~~ The owner shall be responsible for all of the costs related to the connection to the Town's sewer system.

##### C.

Grinder pumps remain the private property of the homeowner. Both ~~Existing existing~~ and new single or two family ~~DPW approved-~~ residential grinder pumps ~~and the associated appurtenances and installed controls-controls installed~~ shall be maintained, serviced and repaired or replaced by the Town of Chelmsford, ~~as integral components of the Town's wastewater collection system respecting that while a pump is inoperable the homeowner is without sanitary facilities.~~ The Town of Chelmsford shall not be responsible for the maintenance or repair of grinder pumps or systems servicing commercial properties and residential properties comprised of three or more units.

##### D.—

~~Various items should not be introduced into any sewer system either directly or through a drain or waste disposal, including:—~~

##### (1)—

~~Glass, metal or plastic.—~~

*new DPW approved residential grinder pumps and*

*pump*

*→*





~~(2)–~~

~~Diapers, sanitary napkins, tampons or baby wipes.–~~

~~(3)–~~

~~Socks, rags or clothes.–~~

~~(4)–~~

~~Explosives or flammable material.–~~

~~(5)–~~

~~Lubricating oils or grease.–~~

~~(6)–~~

~~Strong chemicals or gasoline.–~~

~~(7)–~~

~~Seafood shells or kitty litter.–~~

~~E.–~~

~~The property owner shall be responsible for any and all costs to repair and/or replace a grinder pump as a result of improper disposal of materials into the sewer system.~~

**{END OF CHAPTER}**



**Grinder Pump Study Committee**

**August 19, 2015**

**Material presented by David Foley**

## Town of Chelmsford Policy on Grinder Pump Freeze-Ups

Re: Insulating grinder pumps

Sent By: **Mike Vosnakis** On: Aug 08/03/15 11 15 AM

To: **Dave Foley**; **Thomas Galroy**

Cc: **Paul Cohen**, **Gary Persichetti**, **Sharon Boyer**

"Mike Vosnakis"

+ Add to Address Book

FYI, Per discussions with the DPW Director and Town Manager this past winter, repairs due to grinder pump freeze-ups are not considered normal usage repairs and thus not covered by Town, they are similar to your water pipes freezing. Homeowners are responsible to take precautions during extremely cold weather or if away during winter.

Michael Vosnakis

Superintendent

Chelmsford DPW Sewer Division

9 Alpha Rd

Chelmsford, MA 01824

(Office) 978-250-5297, (Fax) 978-250-2416

Figure 1. This policy is contrary to the existing by-law

TOWN OF CHELMSFORD POLICY ON GRINDER PUMP POWER CABLES NOT INSTALLED IN CONDUIT

- \$18,000 Power cables that are loose or in poor condition. (Responsibility not defined)

From: 2015 Spring Town Meeting Residential Grinder Pump Update

Figure 2. The policy of forcing homeowners to replace power cables at their own expense, if adapted, is contrary to the existing by-law

## SFA POSITION ON REMOTE SENTRY INSTALLATION PROGRAM

The remote sentry installation plan is part of the town's \$1.8M grinder pump 4 year grinder pump program. It calls for installation of 402 remote sentries in the living space of 402 households at \$600/unit for a total of \$241,200. It also calls for the early retirement of 182 control panels at \$933/unit in order for them to accept a remote sentry for a total of \$169,806. The cost of this phase of the program is  $\$241,200 + \$169,806 = \$411,002$ . The SFA is opposed to the remote sentry installation plan for the following reasons.

1. When the power is out the homeowner knows the grinder pump is not operable. There is no need for an alarm in this condition.
2. The original vote to pass the grinder pump program at spring town meeting 2014 was a close vote.
3. The vote for additional funding for the grinder pump program at spring town meeting 2015 was a NO.
4. If the town meeting is made aware of the costs for the remote sentry installation plan which is not needed they will vote against it
5. The remote sentry is not called for by the grinder pump by-law
6. The remote sentry was not called for in the findings and recommendations of the 2014 grinder committee
7. The remote sentry was never on the SFA's list for a grinder pump program
8. The town is already making efforts to cut back on obligations under the by-law (such as freeze up and power cords discussed tonight, indoor units and custom units discussed in previous meetings) so the idea of using scarce and valuable funds to finance something which is not an obligation under the by-law makes no sense

The available funding levels are needed for the Town to meet it's obligations under the by-law not to be used to embark on an unneeded, unwanted, and expensive expansion of the program.

Figure 3. Many aspects of the Town's implementation of the current by-law have not been reviewed by the GPSC and may need to be reviewed in future sessions. The town's remote sentry installation program is one such aspect and it is opposed by the SFA.

Five Centennial Drive  
Peabody, MA 01960-7985  
tel: 978-532-1900 fax: 978-977-0100  
www.westonandsampson.com

planning, permitting,  
design, construction,  
operation, maintenance,  
design/build, & equipment

**Weston&Sampson**

Chelmsford, Massachusetts  
WSE Job No. 2060328.B

November 24, 2008

Dear Resident:

On behalf of the Chelmsford Sewer Commission, Weston & Sampson Engineers, Inc., is in the process of administering the construction of the sewer throughout the town of Chelmsford. In order to provide sewer service to all areas of town, both gravity and low-pressure sewer are being utilized.

Many of the areas in town can be serviced with a gravity sewer. Sometimes a gravity sewer is not practical **due to the topography of an area**; when such a condition exists, a low-pressure sewer is used instead. A low-pressure sewer requires a grinder pump unit, which receives waste from the house and pumps the waste into a pressure sewer line. The low-pressure sewer eventually discharges into a gravity line or a pump station.

**Your home requires a grinder pump** to receive sewer service. To help you familiarize yourself with a grinder pump, we have included an information package, which contains a document answering the most commonly asked questions about grinder pumps, and a copy of the grinder pump policy, including an acceptance form that must be completed and returned to the Chelmsford Sewer Commission office at 50 Billerica Road, Chelmsford, MA 01824.

Prior to the commencement of construction on your street, it is necessary that we determine the optimum location for the low-pressure service pipe to be extended to your property line. Please complete and return the enclosed building connection form by Friday, January 30, 2009.

If you have any questions, please feel free to call Gregory Pion at the Chelmsford field office at (978) 256-9315.

Very truly yours,

WESTON & SAMPSON ENGINEERS, INC.



Michael E. Paulin, P. E.  
Project Manager

Enclosures

cc: Mr. Barry Balan, Chelmsford Sewer Commission

O:\Chelmsford MA\Park-Cambridge Const\Svc\Building Connection\definite G.P.d\finalite g.p. letter.doc

Massachusetts Five Centennial Drive (H-Q) Peabody, MA 01960-7985 100 Foxborough Blvd., Suite 250 Foxborough, MA 02035 225 New Boston Street	Connecticut 273 Dividend Road Rocky Hill, CT 06067	Rhode Island 477B Tiogue Avenue Coventry, RI 02816	New Hampshire 100 International Drive Suite 152 Portsmouth, NH 03801	Maine PO Box 189 York, ME 03909	Vermont 98 South Main Street Suite 2 Waterbury, VT 05676	New York 301 Manchester Road Suite 201A Poughkeepsie, NY 12603	Florida 1990 Main Street Suite 750 Sarasota, FL 34236
--	--	--	---	---------------------------------------	---	---	--

When it's essential...it's Weston&Sampson®

## ***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.

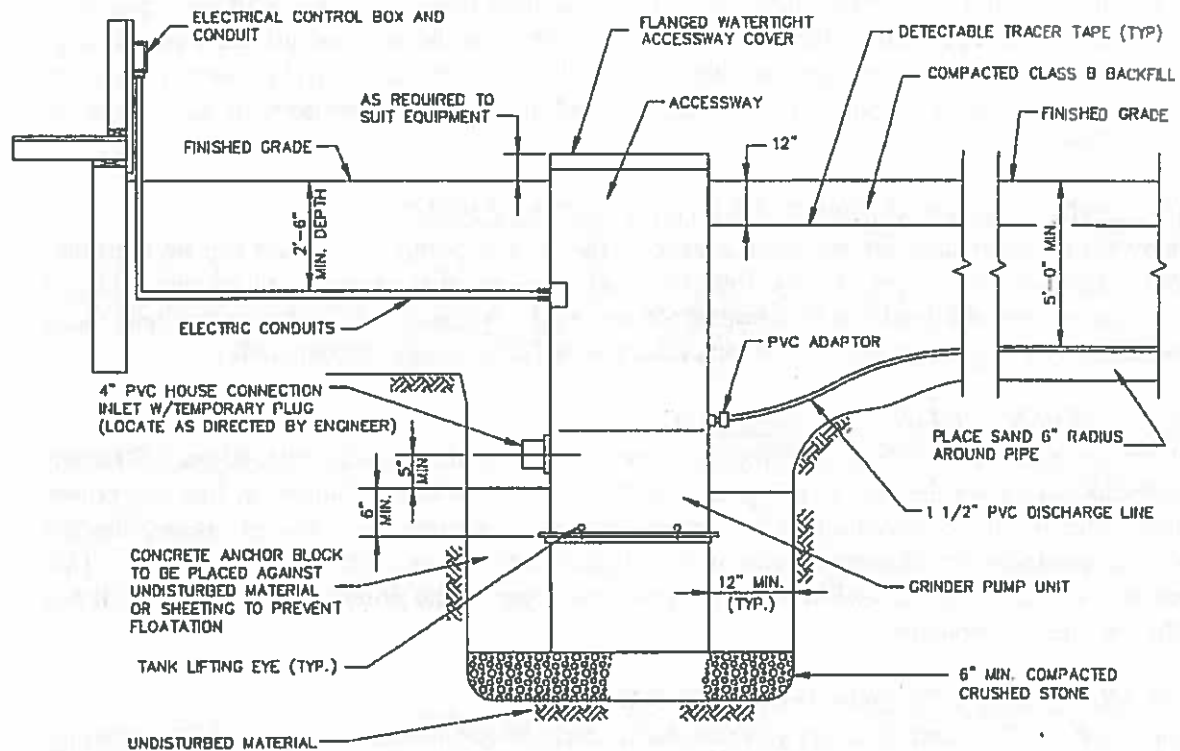
Low-pressure sewers are used when it is not possible or practical to carry waste by gravity. Low-pressure sewers are effective in low-lying areas because they pump the waste from the lower areas into a gravity line or a pump station. Likewise, a pressure house connection uses the grinder pump to pump 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 Chelmsford with a certificate verifying that this has been done. This is required on all gravity and low-pressure services in the Town of Chelmsford.

#### 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 \$0.011 kwh x 200 kwh = \$22.00 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 Chelmsford stating that you have one year to have your grinder pump installed and to connect into the mainline sewer.

## GRINDER PUMP OPERATING COSTS

The average home uses 250 gallons of water per day. A grinder pump operates at approximately 14 gallons per minute and draws approximately 1000 watts while running. Therefore, the power consumption for the pump is as follows:

*240V x 6VA = 1440 watts*

$$\frac{250 \text{ gpd} * (365 \text{ days/yr.}) * (1000 \text{ watts})}{14 \text{ gpm} * (60 \text{ min./hr.})}$$

$$= 108,630 \text{ watt-hours/year}$$

$$= 109 \text{ kilowatt-hours/year}$$

Additionally, there is a 12-watt heater in the core that is on continuously. The power consumption for the heater is as follows:

$$12 \text{ watts} * (24 \text{ hrs./day}) * (365 \text{ days/yr.})$$

$$= 105,120 \text{ watt-hours/year}$$

$$= 105 \text{ kilowatt-hours/year}$$

Total power consumption for the average grinder pump is as follows:

$$\begin{array}{r} 109 \text{ kwh} \\ +105 \text{ kwh} \\ \hline 214 \text{ kwh} \end{array}$$

Based on a conservative energy cost of \$0.07 per kilowatt-hours, the total average cost per year is as follows:

$$\mathbf{\$0.07/kwh * 214 \text{ kwh} = \$14.98 \text{ per year (on average)}}$$



# CHELMSFORD SEWER COMMISSION

TOWN HALL  
CHELMSFORD, MASSACHUSETTS 01824  
(978) 250-5233 FAX: (978) 250-5236

Barry B. Balan, Chairman  
John F. Souza, Vice Chairman  
Richard J. Day, Clerk

George R. Dixon  
Jeffrey A. Miller

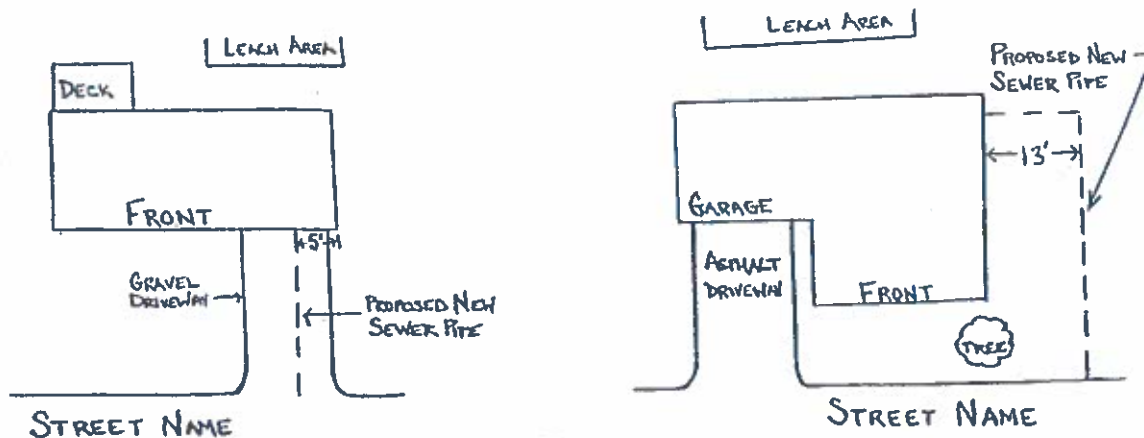
TO: The Owner of 6 Armand Drive  
DATE: November 24, 2008  
FROM: WESTON & SAMPSON ENGINEERS, INC.  
PHONE: 978-256-9315

In the near future a sewer will be installed in your street. A service connection will be run from the main sewer to your property line. The Town desires, where possible, to accommodate the property owners in locating the service connections where best suited to connect their domestic wastewater (toilets, sinks, showers, laundry, dishwashers, etc.) to the new sewer.

The town of Chelmsford's wastewater consulting engineers, Weston & Sampson Engineers, Inc., will have representatives in Chelmsford inspecting the construction work on the new sewers. You may desire assistance in determining a location for your service connection. Your plumber or local contractor can assist you in this matter, or you may contact Gregory Pion of Weston & Sampson Engineers at (978) 256-9315 to arrange for an appointment regarding your building connection.

Please fill out the back of this form. In the space provided on the back of this form, sketch your house's layout in relation to the street and the desired location of your service connection. The examples shown below are to be used as a guide, not as a choice. If you know the location(s) of your leaching areas, please show the leaching areas on your sketch. Please return the completed form in the stamped, self-addressed envelope provided with this mailing by Friday, January 30, 2009.

If our field staff receives no reply, your service location will be selected by the field engineer at the time of the main sewer installation. This location may not be the most advantageous for sewerage your property. Thank you for your assistance.



## EXAMPLE LAYOUTS

Note: Diagrams depict a plan (overhead) view of house.  
Dashed lines depict desired house connection layout.