

# SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services  
 Division of Health Engineering, 10 SHS  
 (207) 287-5672 Fax: (207) 287-2165

**PROPERTY LOCATION**

City, Town, or Plantation: Portland

Street or Road: Caribou Road

Subdivision, Lot #:

PORTLAND PERMIT # 10812 APPLICANTS COPY

Date Permit Issued: 11 17 08

Christy J. R... Local Plumbing Inspector Signature

FEE  Double Fee Charged

L.P.I. # 11016157

**OWNER/APPLICANT INFORMATION**

Name (last, first, MI): Thompson, Rick + Linda  Owner  Applicant

Mailing Address of Owner/Applicant: 303 Turner St  
Auburn ME 04210

Daytime Tel. #:

THE WORK SPECIFIED IN THIS APPLICATION IS HEREBY AUTHORIZED TO BE INSTALLED IN ACCORDANCE WITH THE RULES. THIS PERMIT EXPIRES AFTER TWO YEARS FROM DATE ISSUED UNLESS WORK HAS COMMENCED.

**OWNER OR APPLICANT STATEMENT**

I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a Permit.

Richard S. Thompson 11/15/08  
 Signature of Owner or Applicant Date

**CAUTION: INSPECTION REQUIRED**

I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.

Municipal Tax Map # \_\_\_\_\_ Lot # 197-L-9

(1st) date approved \_\_\_\_\_  
 Local Plumbing Inspector Signature \_\_\_\_\_ (2nd) date approved \_\_\_\_\_

## PERMIT INFORMATION

**TYPE OF APPLICATION**

1. First Time System

2. Replacement System  
 Type replaced: Unknown  
 Year installed: \_\_\_\_\_

3. Expanded System  
 a. Minor Expansion  
 b. Major Expansion

4. Experimental System

5. Seasonal Conversion

**THIS APPLICATION REQUIRES**

1. No Rule Variance

2. First Time System Variance  
 a. Local Plumbing Inspector Approval  
 b. State & Local Plumbing Inspector Approval

3. Replacement System Variance  
 a. Local Plumbing Inspector Approval  
 b. State & Local Plumbing Inspector Approval

4. Minimum Lot Size Variance

5. Seasonal Conversion Permit

**DISPOSAL SYSTEM COMPONENTS**

1. Complete Non-engineered System

2. Primitive System (graywater & alt. toilet)

3. Alternative Toilet, specify: \_\_\_\_\_

4. Non-engineered Treatment Tank (only)

5. Holding Tank, \_\_\_\_\_ gallons

6. Non-engineered Disposal Field (only)

7. Separated Laundry System

8. Complete Engineered System (2000 gpd or more)

9. Engineered Treatment Tank (only)

10. Engineered Disposal Field (only)

11. Pre-treatment, specify: \_\_\_\_\_

12. Miscellaneous Components

**SIZE OF PROPERTY**

14000 SQ. FT.  ACRES

**SHORELAND ZONING**

Yes  No

**DISPOSAL SYSTEM TO SERVE**

1. Single Family Dwelling Unit, No. of Bedrooms: 3

2. Multiple Family Dwelling, No. of Units: 5

3. Other: \_\_\_\_\_ (specify)

Current Use  Seasonal  Year Round  Undeveloped

**TYPE OF WATER SUPPLY**

1. Drilled Well  2. Dug Well  3. Private

4. Public  5. Other

## DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

**TREATMENT TANK**

1. Concrete  
 a. Regular  
 b. Low Profile

2. Plastic

3. Other: \_\_\_\_\_

CAPACITY: 1000 GAL.

**DISPOSAL FIELD TYPE & SIZE**

1. Stone Bed  2. Stone Trench

3. Proprietary Device  
 a. cluster array  c. Linear  
 b. regular load  d. H-20 load

4. Other: \_\_\_\_\_

SIZE: 720 sq. ft.  lin. ft.

**GARBAGE DISPOSAL UNIT**

1. No  2. Yes  3. Maybe

If Yes or Maybe, specify one below:

a. multi-compartment tank

b. \_\_\_\_\_ tanks in series

c. Increase in tank capacity

d. Filter on Tank Outlet

**DESIGN FLOW**

270 gallons per day

BASED ON:

1. Table 501.1 (dwelling unit(s))

2. Table 501.2 (other facilities)

SHOW CALCULATIONS for other facilities

**SOIL DATA & DESIGN CLASS**

PROFILE CONDITION DESIGN: 5, B, 12

at Observation Hole # \_\_\_\_\_

Depth \_\_\_\_\_

of Most Limiting Soil Factor

**DISPOSAL FIELD SIZING**

1. Small—2.0 sq. ft. / gpd

2. Medium—2.6 sq. ft. / gpd

3. Medium—Large 3.3 sq. ft. / gpd

4. Large—4.1 sq. ft. / gpd

5. Extra Large—5.0 sq. ft. / gpd

**EFFLUENT/EJECTOR PUMP**

1. Not Required See Note Page 3

2. May Be Required

3. Required

Specify only for engineered systems:

DOSE: \_\_\_\_\_ gallons

3. Section 503.0 (meter readings)

ATTACH WATER METER DATA

LATITUDE AND LONGITUDE

at center of disposal area

Lat. 44 d 24.768 m s

Lon. 70 d 08.807 m s

if g.p.s., state margin of error: 26'

## SITE EVALUATOR STATEMENT

I certify that on 8-25-08 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).

Darryl N. Brown Site Evaluator Signature

45 SE #

9-4-08 Date

Darryl N. Brown Site Evaluator Name Printed

897-6752 Telephone Number

darryl@mainelanddevelopment.com E-mail Address

Note: Changes to or deviations from the design should be confirmed with the Site Evaluator.

HHE-200 Rev. 4/05

# SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services  
Division of Health Engineering  
(207) 287-5672 FAX (207) 287-4172

Town, City, Plantation  
**Portland**

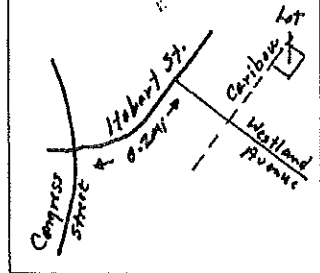
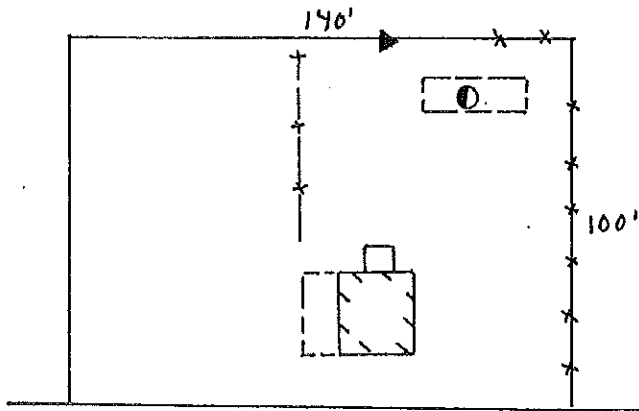
Street, Road Subdivision  
**Caribou Road**

Owner's Name  
**Rick + Linda Thompson**

SITE PLAN

Scale 1" = 50 Ft.  
or as shown

SITE LOCATION PLAN  
(Map from Maine Atlas recommended)



- Test Pit
- ▼ Elev. Ref. Point

**Caribou Road**

## SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole 1  Test Pit  Boring  
0 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)	Texture	Consistency	Color	Mottling
0	Sandy loam	friable	brown	
10	Very fine sandy loam	friable	olive brown	
20	loamy fine sand	very friable	olive brown	
40	sand	loose	light brown	

Soil Classification <b>S B</b>	Slope <b>1-3</b> %	Limiting Factor "	<input type="checkbox"/> Ground Water <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
Profile	Condition		

Observation Hole \_\_\_\_\_  Test Pit  Boring  
\_\_\_\_\_ " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (Inches)	Texture	Consistency	Color	Mottling
0				
10				
20				
30				
40				
50				

Soil Classification	Slope	Limiting Factor	<input type="checkbox"/> Ground Water <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
Profile	Condition		

*[Signature]*  
Site Evaluator Signature

**45**  
SE

**9-4-08**  
Date

# SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services  
Division of Health Engineering  
12071 287-5672 FAX 12071 287-4172

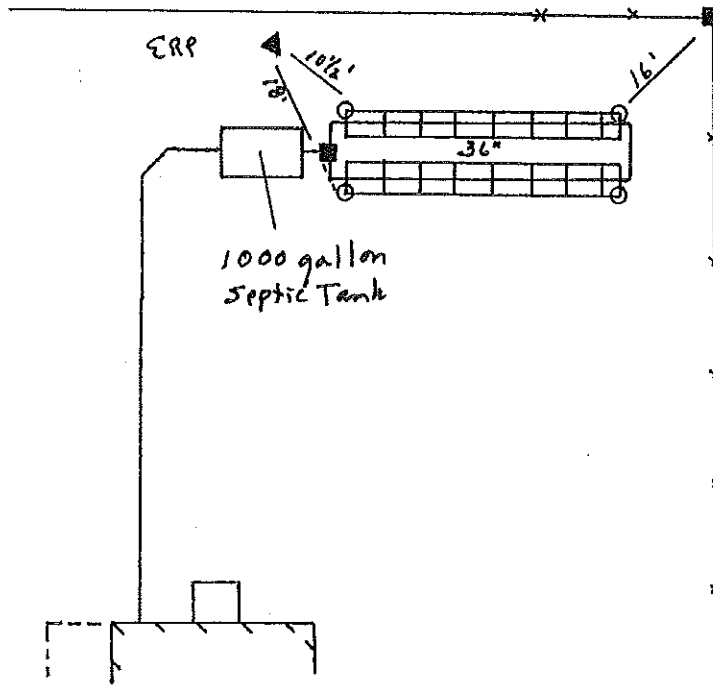
Town, City, Plantation  
**Portland**

Street, Road, Subdivision  
**Caribou Road**

Owner's Name  
**Rick + Linda Thompson**

## SUBSURFACE WASTEWATER DISPOSAL PLAN

SCALE 1" = 20' FT.



### Notes:

1. Disposal area shall consist of 15 Type "B" Eljen In-Drains with the following configuration:  
2 Rows of 7 1/2 In-Drains per row with 36" separation between rows;
2. To avoid pumping, the building sewer shall be raised to accommodate the following minimum grades:  
Building Sewer: 1/4" per foot  
Effluent line: 1/8" per foot
3. Refer to the following attachments:  
a) Copy of manufacturer's spec sheet;  
b) Copy of Chapter B of Wastewater Rules.

### FILL REQUIREMENTS

Depth of Fill (Upslope)	0"
Depth of Fill (Downslope)	0"

### CONSTRUCTION ELEVATIONS

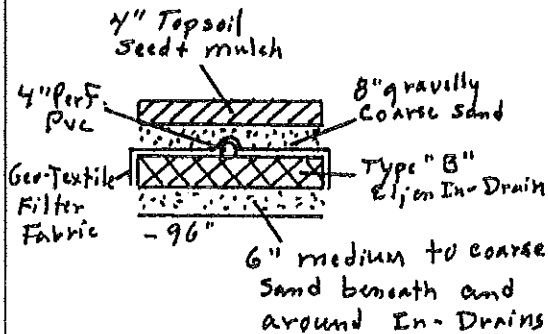
Finished Grade Elevation	-60"
Top of Distribution Pipe or Proprietary Device	-780"
Bottom of Disposal Area (Bottom of Sand)	-96"

### ELEVATION REFERENCE POINT

Location & Description	Nail w/red flag in Pine Tree
Reference Elevation	0"

### DISPOSAL AREA CROSS SECTION

SCALE:  
VERTICAL: 1" = 5'  
HORIZONTAL: 1" = 10'



*[Signature]*

Site Evaluator Signature

45

SE

9-3-08

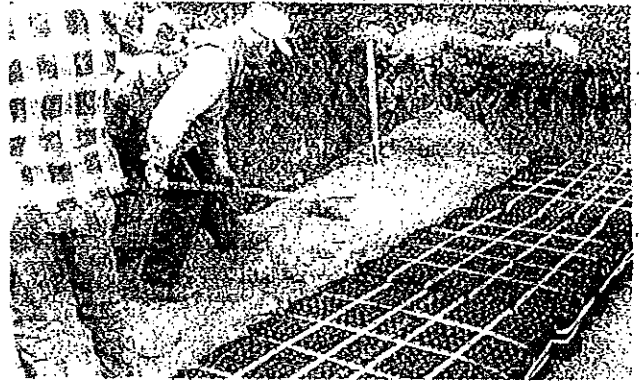
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Page 3 of 3

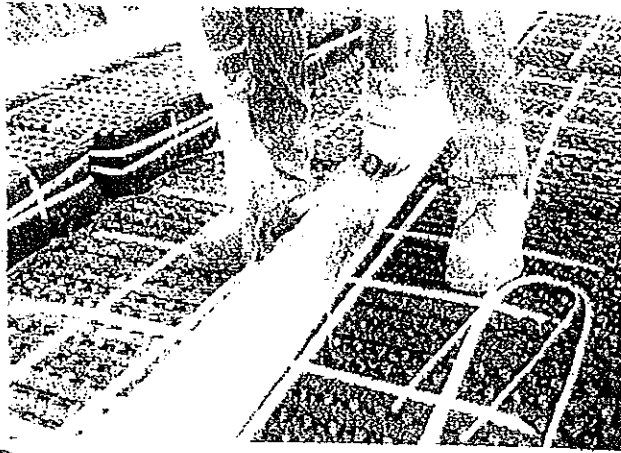
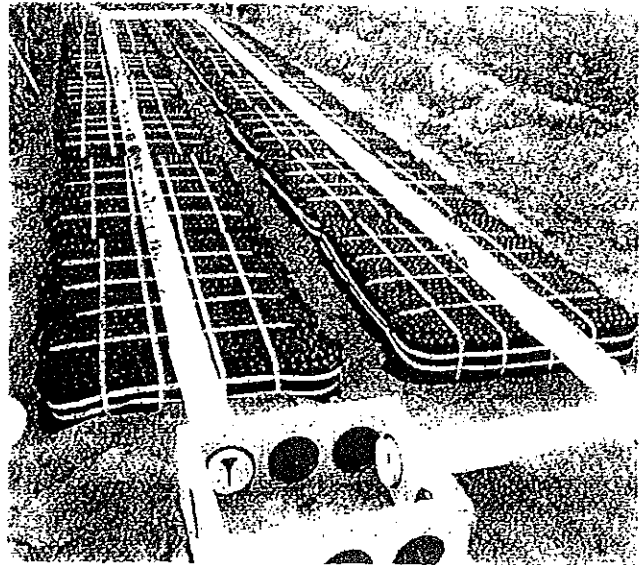
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## Trench and In-Ground Cluster Installation

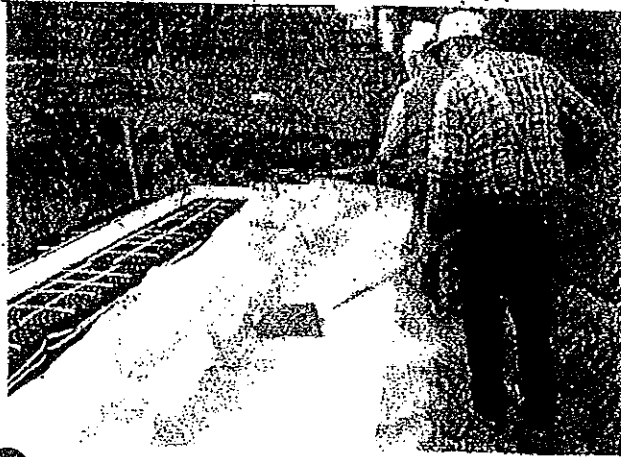
- 1 Prepare site according to local and state regulations. Do not install system on frozen or saturated ground.
- 2 Remove all organic soil and roots at disposal and fill extension areas.
- 3 Scarify receiving layer to eliminate smearing.
- 4 Place 6" of D.O.T. or state highway specification washed concrete sand or sand known to be "medium to coarse with an effective size of .25 to 2.0 mm and no more than 5% passing a #200 sieve."
- 5 Avoiding footprints, place In-Drains with painted stripe facing up, end to end on sand in trench or bed. Caution: Spacer cores can have sharp edges.



- 6 Center 4" perforated distribution pipe over In-Drains. Use solid pipe over compacted sand from D-Box to In-Drains and to connect distribution lines at far end. Connect mid-points on rows over 40' long.



- 8 Secure pipe with one Eljen clamp per In-Drain. Slide clamp into upfacing core. Force through fabric into sand.
- 9 Install Eljen cover fabric over rows of In-Drains. Drape fabric straight down over pipe. Secure with hand shoveled sand. Don't block holes in perforated pipe.



- 10 Place 12" medium to coarse sand (see step #4) between rows and 9" min. at the sides in trench or bed.
- 11 Complete backfill and loam to 12" min. over In-Drains. Fill should be clean, porous and devoid of large rocks. Use well graded sandy fill with a maximum 10% passing a #200 sieve. Do not use wheeled equipment over system. A light track machine may be used with caution, avoiding crushing or shifting of pipe assembly. Backfill in direction of perforated pipe.
- 12 Divert surface runoff. Finish grade to prevent surface ponding. Seed loam and protect from erosion.

## CHAPTER 8

### DISPOSAL FIELD CONSTRUCTION TECHNIQUES

#### SECTION 800.0 GENERAL

**800.1 Intent:** This Chapter governs the installation of disposal fields.

**800.2 General:** On sites with fine soil textures, excavations that expose the bottom and sidewall area of the disposal field shall not be carried out when the soil moisture content is above the plastic limit except when correcting a nuisance, there is no practical alternative, the plumbing inspector agrees and special construction techniques are used. The absolute plastic limit can be estimated by rolling the soil with the fingers. If the soil forms a wire or rod 1/8th of an inch in diameter and does not crumble when handled, the soil moisture content is too high to proceed with the excavation.

**800.3 Dig Safe Law:** The "Dig Safe Law" 23 MRSA §3360-A places certain notification requirements on any person doing excavations. Excavation is broadly defined to mean any operation in which earth, rock or other material on or below the ground is moved or otherwise displaced by means of power tools, power equipment or explosives and including grading, trenching, digging, ditching, drilling, auguring, tunneling, scraping and cable or pipe driving, except tilling of the soil and gardening or agricultural purposes. For a free Dig Safe in Maine information kit, contact the Maine Public Utilities Commission: 1-800-452-4699 [www.state.me.us/mpuc](http://www.state.me.us/mpuc) - email: [maine.puc@maine.gov](mailto:maine.puc@maine.gov).

#### SECTION 801.0 SITE PREPARATION

**801.1 Site preparation requirements:** Prior to the placement of any backfill material, the ground surface shall be prepared as follows:

**801.2 Soil erosion and sediment control:** In areas adjacent to a water body or wetlands, preventative erosion and sediment control measures should be employed consistent with Section 1504.0.

**801.3 Clearing:** Vegetation shall be cut and removed from the area where backfill material is to be placed.

**801.4 Scarify the site:** Where possible, the area under the disposal field and backfill extensions shall be plowed or disked to produce a thoroughly roughened surface. Plowing shall be done parallel to the topographic contour in such a direction that each plow furrow will be thrown up-slope. The soil should be broken up to a depth of 6 to 8 inches. Alternatively, a roto-tiller or the teeth of a backhoe may be used.

**801.5 Transitional horizon:** On sites where the backfill material is coarser than the original soil, a minimum of 4 inches of backfill materials must be mixed (by plowing, disking or roto-tilling) into the original soil to form a transitional horizon beneath the disposal area footprint and all side and down slope fill extensions.

**801.6 Fill large holes:** If large holes are left as a result of stump and/or stone removal, these holes shall be filled with suitable backfill material that meets the requirements of Subsection 803.2.

**801.7 Surface water diversion:** Surface water shall be diverted away from the disposal field site.

#### SECTION 802.0 EXCAVATION

**802.1 Excavation requirements:** Any excavation required for the installation of a disposal field shall comply with all the requirements in this Section.

**802.2 Bottom of disposal field:** The bottom of each disposal field shall be installed at the elevation specified on the permit. It shall be maintained to a level grade no greater than 2 inches within 100 feet. Note: The bottom of a disposal field serves as the final stage of the distribution network.

**802.3 Avoid unnecessary compaction:** Excavation shall be carried out in a manner that will avoid unnecessary compaction of both sidewalls and bottom area. Heavy equipment, especially rubber tired vehicles such as front-end loaders, should not be driven over the exposed bottom of the disposal field. Excavation should be carried out, when possible, by a back-hoe operating from outside the perimeter of the previously excavated portions of the disposal fields.

**802.4 Reopen smeared or compacted bottom or sidewall surfaces:** If any portion of the bottom or sidewalls becomes smeared or compacted, that portion must be scarified to reopen soil pores. Rototilling may be necessary to reach the limit of compacted soil depth.

**802.5 Weather conditions:** Work should be scheduled so that excavated areas are not exposed to rainfall or wind-blown silt. Any loose soil or debris that is washed or otherwise deposited within the excavation shall be carefully removed prior to backfilling. Additionally, disposal fields should not be installed in frozen ground or when the ambient air temperature is below freezing, especially if construction will take place over several days.

#### SECTION 803.0 INSTALLATION

**803.1 Construction:** The installer of the system shall make certain that the system and all its component parts are installed in conformance with the requirements of this code, the plan prepared by the site evaluator, and with any special engineering design requirements approved or required by the Department under Chapter 19.

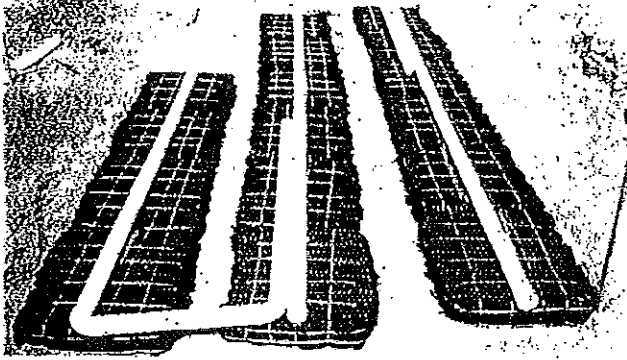
**803.2 Soil and backfill material:** The installer of the system shall make certain that the construction and installation are performed without adversely affecting the capacity of the soil or backfill material to adequately absorb or treat the septic tank effluent.

## Raised or Fill Systems

- 1 Follow steps #1-3 for trench installation.
- 2 Compact fill, in max. 6" lifts, with a light tracked machine. Use clean soil free of organic material, clay, construction debris, stones larger than 6" and no more than 10% passing a #200 sieve.
- 3 Provide 6" sand bed, per trench step #4, directly under the In-Drains.
- 4 Complete system per trench steps #5-12.

## Serial Distribution on Slopes

- 1 Site preparation is the same as for trench and fill systems. Groove receiving layer by raking or contour plowing at right angle to slope before placing fill or sand.
- 2 Install rows of In-Drains at design elevations.
- 3 Provide a well anchored D-Box with velocity reduction tee or baffle. D-Box serves as an inspection port.



- 4 Install a line of 4" perforated pipe on first row of In-Drains. Cap pipe at far end.
- 5 Place at least 10' of capped perforated overflow pipe at the far end and downhill side of the above pipe.
- 6 Connect overflow pipe to a line of perforated pipe on the next row of In-Drains with 2 elbows and a short length of solid pipe. Cap perforated pipe on opposite end.
- 7 Continue this procedure until the last row of In-Drains has an end capped line of perforated pipe.
- 8 Complete assembly by following steps #8-12 at trench installation.

## Pumped Systems

- 1 Prepare disposal site as described above.
- 2 Provide a well anchored D-Box with a velocity reduction tee or baffle.
- 3 System assembly is the same as for gravity designs.
- 4 Pressure distribution does not result in reduced system size and is therefore not generally used for In-Drain disposal systems.

## Design Manual Available

Effluent pretreatment offered by In-Drain technology generally allows substantial reductions in leach field size compared to conventional stone or chamber systems. Sizing formula conforms with code variations from state to state. Consult your area distributor for a state specific Design and Installation Manual.

### Eljen Corporation

125 McKee Street  
East Hartford, CT 06108  
(860) 610-0426  
(800) 444-1359  
Fax (860) 610-0427

Distributed By:

CONSTRUCTION CONSULTANTS, INC.  
328 FEDERAL ROAD  
LIVERMORE, ME 04253  
1-800-897-4072

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[www.state.me.us/mpuc](http://www.state.me.us/mpuc) - email: [maine.puc@maine.gov](mailto:maine.puc@maine.gov).

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**803.2 Soil and backfill material:** The installer of the system shall make certain that the construction and installation are performed without adversely affecting the capacity of the soil or backfill material to adequately absorb or treat the septic tank effluent.

## DISPOSAL FIELD CONSTRUCTION TECHNIQUES

### SECTION 804.0 BACKFILL PLACEMENT FOR DISPOSAL AREAS INCLUDING FILL EXTENSIONS

**804.1 General:** Selection and placement of backfill shall comply with the requirements of this section.

**804.2 Backfill standards:** The backfill material shall be a coarse sand to a gravelly coarse sand which meets the following requirements:

**804.2.1 Coarse fragments:** The upper limit of coarse fragments shall be 3 inches in diameter and approximately 5% by volume;

**804.2.2 Textural analysis:** The soil texture for backfill, unless otherwise authorized by this code, is coarse sand to gravelly coarse sand with approximately 4 to 8% of the sand, silt and clay fraction passing a #200 sieve. The upper limit of clay sized particles in the sand, silt, and clay fraction shall be approximately 2%. The backfill shall contain approximately 15% to 30% (by weight) coarse fragments (gravel 2 mm to 3 inches).

**804.2.3 Field Determination of backfill:** Due to the difficulty of obtaining sieve analyses and the variability of backfill material, the following procedures can be used in the field to determine the suitability of backfill material. The backfill is suitable if the soil texture is loose single grains, the individual sand grains can be readily seen (similar to salt or sugar grains) and felt, and the following conditions are observed: If squeezed in the hand when dry, it will fall apart when the pressure is released but has enough fines to stain the lines in the palm of the hand; or, if squeezed when moist, it will form a cast that will crumble when touched and bears very careful handling; and it does not form a ribbon between the thumb and forefinger but has enough fines to stain the lines in the palm of the hand.

**804.2.4 Coarser material beneath or beside disposal system:** Stone meeting the requirements of Section 805.2 may be placed immediately adjacent to the disposal field provided that the rest of the backfill material meets the requirements of Subsection 804.2. If used beneath the disposal field, it shall be considered part of the disposal field for determining the separation between the limiting factor and the bottom of the disposal system.

**804.2.5 Fill material placement above disposal system:** Immediately above the filter fabric, hay or proprietary devices, fill is required as specified on the plans. It shall be a minimum of 8 inches in thickness (including cover material).

**804.2.6 Cover material:** Immediately above the backfill or fill material, at least 4" of soil or soil and soil amendment mix, suitable for establishment of a good vegetative cover, shall be placed over the entire disturbed soil area, including fill extensions.

**804.3 Disposal fields installed completely in the original ground:** If the disposal field is completely installed in original ground, the backfill material shall completely cover the disposal fields. Fill material extensions shall be graded smoothly into the surrounding topography on all sides. The disposal field shall be adequately crowned on level disposal fields (3% minimum grade) to allow for settling so that surface water will be allowed to drain from the site without ponding.

**804.4 Disposal fields installed partially in the original ground:** Disposal fields partially installed in the original ground shall meet the following requirements:

**804.4.1 Extent of backfill material:** The fill layer shall include any backfill beneath the disposal field, the shoulders, and the backfill material extensions surrounding the disposal field on all sides.

**804.4.2 Shoulder width and slope:** The minimum required shoulder width is 3 feet. The finished grade of the shoulder shall be sloped at 3% away from the disposal field or conform to the slope of the finish grade of the disposal field.

**804.4.3 Sloping sites:** On sloping sites, the width of the shoulder may be reduced on the up-slope side of the disposal field. In this case, the top surface of the backfill material shall be kept level with or higher than the invert of the distribution pipes up to the point where the top surface of the fill material intersects with existing slope.

**804.4.4 Backfill material extension:** At the outside edge of the shoulder, the backfill material shall be terminated by sloping the top of the backfill layer downward at a slope specified in Tables 600.2 through 600.4.

### SECTION 805.0 DISPOSAL FIELDS

**805.1 Installation requirements:** Disposal fields shall be installed in compliance with all the requirements in this Section and Section 1403.0.

**805.1.1 Pitch of distribution pipes or proprietary disposal devices:** Maximum tolerance of distribution pipes or proprietary disposal devices shall be no more than 2 inches in 100 feet.

**805.1.2 Spacing between distribution pipes:** The space between distribution pipes for low pressure distribution shall be from 75 to 80% of the hole spacing. Spacing shall be equal and uniform.

**805.1.3 Holes in low pressure distribution pipes:** The holes in low pressure distribution pipes shall be equal and uniform. The holes shall be aligned so that holes in adjacent distribution pipes are offset by 50% of the hole spacing.

**805.1.4 Proprietary devices:** Proprietary disposal devices approved by the Department as substitutes for disposal field stone and perforated distribution



**807.4 Setback cross-slope:** A minimum setback distance of 15 feet shall be maintained between a curtain drain and the ends of a disposal field and constructed so that the curtain drain is located to prevent any under drain of the disposal field.

**807.5 Free-flowing outlets:** Free-flowing outlets shall be provided down-slope of the curtain drain extensions. Outlets shall meet the following requirements:

**807.5.1 Discharge point:** Outlets may empty into a drainage swale discharging to a surface water body, a groundwater recharge basin, or a gravel bed;

**807.5.2 Outlet design:** Outlets shall be designed, installed, located, and maintained in a manner that does not cause soil erosion, surface flooding, or damage to adjacent properties, does not create a public nuisance, and does not violate any applicable Federal, State, or local laws or regulations; and

**807.6 Rodent control:** Adequate measures shall be taken to protect each outlet from the entry of rodents or other small animals.

**807.7 Fill requirements:** Fill material over the curtain drain discharge pipes shall be of earth of a texture that is similar to or coarser than that found at the site and free of large stones, stumps, broken masonry, or other waste construction material.

#### **SECTION 808.0 SEPARATION DISTANCE BETWEEN DISPOSAL FIELDS**

**808.1 Minimum separation distance between disposal fields:** Disposal fields, whether part of a single system or two or more discrete systems, shall be separated by a minimum of 5 feet, as measured along the contour, or one half the width of the widest adjacent disposal fields; whichever is greater.

**808.2 Setbacks for multiple disposal systems:** When there are two or more disposal systems on a single property, separated by less than 100 feet from each other, and the combined wastewater flow exceeds 1,000 gallons per day; each disposal system must meet the setback requirements for the total design flow.