CHATHAM HEALTH DISTRICT

Colchester, East Haddam, East Hampton, Hebron, Marlborough, & Portland

Requirements for NON-ENGINEERED Septic System Plans FOR INSTALLERS

These instructions provide the minimum requirements to assist installers as they prepare complete, code-complying plans for new and repair subsurface sewage disposal systems (permits not needed to add/replace risers, baffles, or filters to tanks or replace d-box covers). Installers must also refer to the Technical Standards, Public Health Code, soils data, and property specifics to prepare the plan.

1. **The plan must include all of the following information:**

- ☐ Property address and owner's name
- ☐ Plan date
- ☐ Installer's name and address
- ☐ MLSS calculations (see next page)
- ☐ Location, size, and type of sewer lines, couplings/cleanouts, septic tank, risers, and filter
- ☐ Location and description of leaching system (distribution pipes, d-boxes, and leaching rows)
- ☐ Select fill and C33 sand requires onsite testing and/or an approved wet sieve (within 60 days)
- ☐ Property lines* and street location
  *Property lines- In accordance with the requirements of CT PHC section 19-13-B103e (c) (2) (C), all plans for the construction or repair of a SSDS must be submitted on or with "a plot plan of the lot, which shall be a surveyor's plan if available or one prepared from information on the deed or land records."
- ☐ Building locations (including accessory structures)
- ☐ Watercourses
- ☐ Ground / surface water drains and drainage structures (catch basins)
- ☐ Buried utilities (Call Before You Dig at cbyd.com or dial 811)
- ☐ **Nearby wells and water service lines:**
  - **If the well is buried, it must be uncovered and visible in field**
  - **Indicate whether the well is drilled or dug**
- ☐ Existing ground elevations in the area of the proposed system and down gradient
- ☐ Proposed system elevations (flow lines at house/sewer line connection, into and out of the septic tank, into and out of distribution boxes, and leaching rows)
- ☐ Benchmark location and elevation (in/on a fixed object near the system)

2. **The plans must show the basis of design**. (ex. 3 bedroom home with perc design rate of 10.1-20 min/inch requires 1000 gallon tank and 675 square feet of effective leaching area-ELA); **and the proposed design** (ex. Proposing 1000 gallon concrete tank and 225' of 4' x 1' stone trenches which provides 675 sq. ft. of ELA.)
3. **The plan must show all separating distances** or be drawn to scale (ex. 75' to well or 10' from building served)
4. **In the case of repairs, show all exceptions or variances requested** (distance to wells, property lines, structures, reduced size, central systems, system on another property, etc.).
5. **Pump Systems-Tech Standards VI:** include pump chamber size (interior dimensions), pump make/model/size, pump curve (for Total Dynamic Head-TDH), dose volume and leaching capacity for dose (~20%), pressure line type/diameter/length/bends, on/off and alarm elevations, riser to grade, quick disconnect in riser, lift chain/rope, frost protection/weep hole, 24 hour storage capacity or dual alternating pumps, separate circuit for alarm/pump, building official permit required and auditory/visual alarm. Consider buoyancy (floating) for areas with high groundwater and/or plastic pump chambers.

All required information must be provided with the plan per CT PHC 19-13-B103e (c) (3). Incomplete plans will be returned for revision. An approved plan and an approved permit to construct are required prior to any system construction.

Worksheet for Non-Engineered SSDS

Date:_____

Property Address:_____Town:_____

Property Owner:_____

Plan Designed by:_____

Title:_____License #:_____

Mailing Address:_____ Email:_____

Plan Type, Circle one: New Full Repair (Tank and Leaching) Partial Repair

If Partial Repair, Circle all that apply: Sewer Line Tank Distribution Line D-Box Leaching

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BASIS OF DESIGN: Residential or Commercial

Number of Bedrooms or Design Flow:_____ LargeTub: Yes No Garbage Disposal: Yes No

Water treatment system: Yes No If yes, is there a separate system for backwash discharge? Yes No

Soil perc rate:_____min/inch Effective Leaching Area required:_____ ft^2

REQUIRED: Minimum Leaching System Spread (MLSS) or length of system calculations if RS <60"

RS or Depth to soil restriction (mottling/redox, ledge, etc.):_____inches, HYDRAULIC GRADIENT or slope:_____%

(HF)_____ x (FF)_____ x (PF)_____ = MLSS (in feet)_____ (Tables for HF, FF and PF on last page)

If you are using fill to increase the RS please include a separate worksheet or cross-section that shows additional information and calculations.

PROPOSED DESIGN INFORMATION:

Proposed septic tank size:_____Gallons or using existing (must be inspected and in good condition)

Tank Type: Concrete Plastic Water Tight: Yes No H20 Load Rated: Yes No Filter Type:_____

Tank Risers Needed: Yes No If Yes, Covers Left on Tank: Yes No Safety Device to be Installed: Yes No

Description of leaching system proposed:_____

ELA credit ft^2 / linear ft.:_____X Total system length_____= ELA provided:_____ ft^2

MLSS Provided:_____ft Maximum leaching system depth into original grade:_____inches

Variances Requested: _____

Pump System Needed: Yes No If Yes, See #5 on first page for necessary items and contact the pump manufacturer for assistance with proper pump selection based on vertical height, dose, and pipe type/size/length/bends.

MLSS Calculation Tables

HYDRAULIC FACTORS (HF)

Hydraulic Gradient (% Slope)

Receiving Soil Depth (Inches)	<1.0	1.0-2.0	2.1-3.0	3.1-4.0	4.1-6.0	6.1-8.0	8.1-10.0	10.1-15.0	>15.0
0.1 - 17.9	See Comments in Section VIII A								
18.0 - 22.0	72	62	54	48	42	34	30	28	26
22.1 - 26.0	66	56	48	42	34	30	28	26	24
26.1 - 30.0	56	49	42	34	30	28	26	24	20
30.1 - 36.0	48	42	34	30	28	26	24	20	18
36.1 - 42.0	42	36	30	28	26	24	20	18	16
42.1 - 48.0	36	32	28	26	24	20	18	16	14
48.1 - 60.0	30	28	24	22	20	18	16	14	10
>60.0	MLSS Need Not be Considered								

FLOW FACTORS (FF)

Flow Factor = Design Flow/300

Residential: Design Flow for each bedroom is 150 GPD except for bedrooms beyond 3 in single-family residential buildings, which have a 75 GPD per bedroom design flow.

Single-family lots:	**FF**	
1 Bedroom = 150/300	0.5	
2 Bedroom = 300/300	1.0	
3 Bedroom = 450/300	1.5	
4 Bedroom = 525/300	1.75	Increase FF by 0.25 for each additional bedroom

Multi-family buildings:

Minimum FF is 2.0 (4 bedrooms) and each additional bedroom increases FF by 0.5.

Non-Residential: Design Flow (GPD) / 300

PERCOLATION FACTORS (PF)

Percolation Rate	Percolation Factor (PF)
Up to 10.0 Minutes/Inch	1.0
10.1 to 20.0 Minutes/Inch	1.25
20.1 to 30.0 Minutes/Inch	1.5
30.1 to 45.0 Minutes/Inch	3.0, or 2.0*
45.1 to 60.0 Minutes/Inch	5.0, or 3.0*

*If leaching system is entirely in select fill and the bottom of system is above existing grade and at least 24 inches above maximum groundwater.