



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

CHECK LIST – ENGINEER DESIGNED PLANS, REVISED 3/19/22

References to CT Health Code, Design Manual & Technical Standards-Jan 2018

√ = On Plan N/A=Not Applicable

All Plans

1.	House/building plans submitted with application for service, fee paid, & two copies of the site plan.
2.	All data (when and who conducted) provided for test pits, perc testing (depth, presoak, all readings & sustained rate) & groundwater monitoring (highest sustained water level with 5 or more readings). If no data in area of system, shallow ledge, high groundwater, or questions on testing (outside wet season or by non-CHD employee), additional or confirmatory testing may be required.
3.	Original signature & seal of engineer on each copy of plans
4.	Plan drawn to scale; 1" = 20' or 30' for residential lots; 1" = 40' or 50' for large projects such as schools, shopping centers & subdivisions.
5.	Mailing address, phone number, & e-mail address of engineer
6.	Lot size with dimensions of property lines, lot numbers/address, or assessors map, block, & lot
7.	Legend to identify various indicators of stone walls, test pits, wells, drains, watercourses, ledge, etc.
8.	Existing and proposed contours in building and leaching areas. Ground shots are preferred
9.	Proposed structure footprint matches floorplans (including accessory structures like decks, patios, overhangs, pools, sheds)
10.	Design flow-(# bedrooms, Tech Standards Table 4, or 1 year of water meter readings with 1.5x safety factor & similar size/type of use) Example: light manufacturing, 30 employees @ 25 GPD = 750 GPD.
11.	Required Effective Leaching Area (ELA). Example: 4 bed at 15 min/in perc = 787.5 sq. ft. or use Design Flow and Application Rate for nonresidential based on problematic or non-problematic sewage.
12.	Minimum Leaching System Spread (MLSS) per Tech Standards Appendix A (see #23).
13.	Description of leaching system (type, ELA, length, width, height & distance on center). Example: 3 leaching trenches, 75' long, 3.0' wide, 1' tall = 225' x 3.0 ft ² /lf =675 ft ²
14.	Details for leaching system materials (select fill, C33, aggregate, filter fabric, access, cover, etc)
15.	Building sewer line to septic tank per Table 2 with necessary cleanouts and pitch. Connecting two different types of pipe, indicate how.
16.	Septic tank location, cross-section, size, type, baffles, outlet filter, & need for risers (type, diameter & safety devices per Tech Standards V). Avoid deep tanks. Non-Concrete tanks per Appendix D.
17.	Pump chamber type, size, location, & pump /dose details. (See Pg 2.)
18.	Grease traps-with deep baffles and access covers to grade for restaurants and Food Service with design flow >500 GPD
19.	Effluent distribution piping (type and diameter per Tech Standards Table 2A or 3 with length), "D" boxes (baffled or 2 for pumps) or row access (inspection ports, vents, etc)
20.	Invert and bottom (leaching) elevations at foundation, inlet & outlet of tanks, inlets & outlets at d-boxes & at all leaching rows. Provide a cross section for leaching.
21.	Stable benchmark adjacent to proposed building & sewage disposal system. Installer should not be required to transfer benchmarks across considerable differences (>50' horizontal or >4-6' vertical)
22.	North arrow (may be true, magnetic or assumed, note on plan)

23. MLSS Calculation-Technical Standards Appendix A: HF (groundwater slope and restriction) x PF (perc rate) x FF (design flow) (Category 1) Code compliance area for B100a and new house lots, only use natural soils (Category 2) New houses/MLSS compliant repairs can use system height and select fill (up to 24") (Category 3) Non-Compliant Repairs and Non-Compliant B100a potential repair areas where normal MLSS cannot be met. New houses that cannot meet MLSS must show hydraulic analysis.
24. Dimensions of scarification area (if needed) and all septic and well horizontal separation distances per Technical Standards Table 1 and 19-13-B51d
25. Well line location with radius and water line to house
26. Locate public water/storm sewer lines in road and water service line to building
27. Locate wells, septic systems, & potential pollution on adjacent properties. If none, note on plan
28. Show building footing drain collection & discharges, gutter drains, drainage swales, rain gardens, detention basins, pools, swamps, ponds, streams/brooks or other watercourses. All groundwater & surface water piping within 25' of septic system meets Table 3 (tight pipe)
29. Identify known wet surface areas, bury holes, filled-in foundations, cuts, & retaining walls
30. Show existing structures on same lot, driveways, & human habitations on adjacent lots
31. Show detail of leaching system proposed. This includes the type of materials (pipes, stone, sand, fabric, etc.) and sieves for any select fill and/or C33. Chatham requires an approved sieve within 60 days of fill placement and onsite perc of placed and compacted select fill for designs based on fill.
32. Show detail of curtain drain (depth, pipe diameter, stone, elevations, fabric, per Tech Standards IX)
33. Provide specs for non-typical materials, such as H-20 load rating, manholes, frames, covers etc
34. Reserve leaching area of acceptable size (ELA, separation distances, and distance on center)
35. Indicate location of existing or proposed buried oil tanks, propane tanks and lines
36. Note stating that engineer/land surveyor shall field stake the system prior to installation.
37. Repair Leaching Rejuvenation/Clogging Break-Up-See Technical Standards VI D and E
38. Recommended -Water treatment wastewater disposal system per Tech Standards X & Appendix E.
39. Recommend -Well arc on the property served & 10' from driving surfaces
40. Recommend -Septic tank covers are left on inlet & outlet of tanks if risers are used.

Pump Systems

1. Pump chambers should be watertight and preferably monolithic with booted inlet and outlet to restrict groundwater infiltration.
2. Cross section on plan of pump chamber with all items in Section VI. C of Technical Standards <ol style="list-style-type: none"> disconnect near top of watertight riser to grade corrosion resistant lift rope/chain check valve & weep hole after check valve
3. The pressure line (provide length) shall meet Table 2B, should be 4' below grade as much as possible, & fitted with a weep hole to prevent freezing of water in the pipe.
4. The pump chamber should be located in area of low groundwater and minimal cover. Avoid placing the pump chamber excessively deep (for ease of service and floating risk). Buoyancy calculations and tank strapping may be needed if groundwater is elevated.
5. Ensure the plan has the pump make, model, horsepower & pump curve with Total Dynamic Head (TDH) and dose to ensure the pump is properly sized for the site and use.
6. Provide the interior pump chamber dimensions along with the on, off, and alarm float elevations to verify the dose and 24-hour volume storage (or dual alternating pumps).
7. The dose volume should not exceed 20% of the volume storage of the leaching unit (3-5 doses/day)
8. Low Pressure Distribution-access for flushing, pressure checks, flow adjustments, details on pressure shields, manifolds, orifice size, pumps, dosing and operation and maintenance
9. Raw Sewage Pumps-Avoid if possible but if >25% of building flow, increase septic tank by 50%