

SEPTIC INSTALLATION CHECKLIST

Before going to the site, check out the plan approval letter for conditions. Also look at the plot plan and identify what and where the benchmark is and how deep the system is from grade elevation. Look for the benchmark as soon as you get to the site. Determine if things are laid out as they should be on the site plan, using the benchmark as your guide. Ask yourself some general questions:

- Is the plot plan drawing accurate?
- Where is the well?
- Is the system installed in the tested area?
- Does the depth of the system seem to be what is proposed on the plan?
- If the benchmark is missing, try to identify it's approximate location using the plot plan and grade contours. (the installer should have already done this) New soil borings may need to be done. Establish a new benchmark, tying it into the grade elevations off the soil test if you can.
- Does all the interior waste enter the new septic tank or system?

Use the POWTS Inspection Report to record measurements and distances. Comment on the report of any portions of the system which were not observed at the time of inspection. Verify that existing systems are properly abandoned. Try to shoot the benchmark first so elevations can be calculated right away. Be sure to record turning points if you have any.

BUILDING SEWERS

- Cleanout within 5' of building sewer exit (can be either inside or outside) Exterior needs frost sleeve with cap. - SPS 382.35
- Check piping material – Sch 40 @ house – SPS 384.30
- Minimum cover over building sewer is 18" - If >30' long – insulate unless $\geq 42"$ deep or $\geq 60"$ deep in an area where snow will be cleared. SPS 382.30(11)(c)
- Cleanouts required if over 100' or immediately upstream of Private Interceptor Main – SPS 382.35
- Pipe bedding – no sags under pipes, all joints on solid ground, adequate glue and cleaner
- Pitch – $\text{Drop} \div \text{Length} \times 100 = \% \text{ Slope}$ (must be at least 1%) – or use a tenth per 10' - 1" per 8' – Table SPS 382.30-3
- Well setbacks ($\geq 8'$) & verify water line setbacks NR812 and SPS 382.40(8)
- 4" pipe required - SPS 382.30

SEPTIC TANKS

- Properly bedded and proper size
- Tank should be installed level (check tank drawing for amount of drop from in to out)
- Tank is free of cracks and damage
- Outlet filter properly installed - SPS 383.44(2)(c)
- Manhole above inlet must be $\geq 4"$ above grade or $\leq 6"$ below grade. – SPS 384.25(7)
- Manhole above filter must be $\geq 4"$ above grade
- Above grade manholes must have locking device on lid – SPS 384.25(7)(h)
- Verify setbacks – Table SPS 383.43-1
- Vent at least 10' from air intake
- Proper backfill for all tanks, esp. plastic
- Check tank depth limitations – Product Approval
- System must be vented – SPS 384.25(5)
- Observe soil on sides of tank excavation. While not always the same as in the drainfield area, it may reveal the soils that are onsite

OTHER CODE CITATIONS

- Exterior sumps – SPS 382.30(10)(d)
- HT Grease Interceptor – SPS 382.34(5)(b)2.c.
- Sanitary Dump Stations - SPS 382.37(2)
- Manufactured Homes – SPS 382.51
- System Abandonment – SPS 383.33
- HT Suction Lines – SPS 383.43(8)(j)
- Frozen soil installation prohibition – SPS 383.45(2)
- Floodplain Installation – SPS 383.45(6) – Floodway installation prohibited in SPS 383.32(3)(c)
- Tank Watertightness – SPS 384.25(2)
- Maintenance requirements have been recorded with the deed of the property – SPS 383.21(2)(c)(5)
- Maintenance contract requirement – SPS 383.52(1)(c)
- Water Service to Building Sewer setbacks – SPS 382.40(8)(b)(4)
- Pipe hangers and supports – SPS 382.60
- Allowable discharge points – Table SPS 382.38-1

HOLDING TANKS

- Properly bedded and proper size
- Tank should be installed level
- Plug in outlet or no outlet
- Tank or suction line within 25' of driveway
- Verify setbacks – Table SPS 383.43-1
- Tank is free of cracks and damage
- Alarm float in tank – SPS 383.43(8)(e)
- Vent at least 10' from air intake
- Manhole risers are properly sealed
- Top of riser will be $\geq 4"$ above grade + locking device on lid. – SPS 384.25(7) & SPS 384.25(7)(h)
- If no manhole above inlet, put 4" vent above it.
- Check tank depth limitations – Product Approval
- Is anchoring necessary? – SPS 383.43(8)(g)

DOSE TANK

- Properly bedded and proper size
- Tank should be installed level (check tank drawing for amount of drop from in to out)
- Tank is free of cracks and damage
- Manhole above pump must be >4" above grade – SPS 384.25(7)
- Above grade manholes must have locking device on lid – SPS 384.25(7)(h)
- Check tank depth limitations – Product Approval
- Is vertical lift as proposed – pump size
- Pump Pad
- Is pump accessible and easily pulled – force main installed with accessible union
- Floats/float tree – minimum tail length for switch operation - be sure dose volume is correct! Too much dose volume will tax the drain field.
- Electrical – NEMA 3 junction box, wiring distance, sufficient size, alarm separate circuit SPS 316.300(1)(a)
- Is anchoring necessary? Watertightness? – SPS 383.43(8)(g)

EFFLUENT PIPE

- Check piping material (usually 3034)
- Check pitch – SPS 383.43(8)(a)
- Does not require cleanouts, however very handy to identify location.
- Keep from freezing – does not require insulation, but insulation doesn't hurt if pipe is shallow.
- Minimum cover over pipe is 12" - SPS 383.45(7)
- Install dose box per manufacturer instructions
- Check bedding – NO bellies.
- Header is installed level – properly bedded !

CONVENTIONAL

- Is system being installed in the tested area?
- Can soil at the infiltrative surface be rolled into a pencil size wire?
- Verify setbacks – well, buildings, lot lines
- Must be 6" of ponding available under header/lateral invert.
- Is system installed at correct elevation? Level? - SPS 383.44(6)(b)
- Are the proposed chambers used? Correct EISA?
- Check cell width and length
- Verify distance between cells
- Check max cell width for chambers/EZ Flow
- Check backfilling of chambers/EZ Flow
- Inspection pipes/vent pipes as required
- If dosed, protect first chamber from erosion due to pumping velocity
- Fabric over rock or EZ Flow. May put over chamber – check approval letter

FORCE MAIN

- Check setbacks – 8' to well
- Check diameter (per plan)
- Check piping material – Some Sch 40 is NOT FOR PRESSURE
- Sleeve force main across tank excavation
- Confirm pressure fittings –not DWV or Ferncos
- Force main usually flows back to tank, weephole
- Does not require insulation if it drains back – but wouldn't hurt under driveways. If force main does not drain back, there will be a portion where water sits and this MUST be protected from freezing.
- Check bedding – NO bellies – water will sit here and freeze!
- Minimum cover over pipe is 12" - SPS 383.45(7)
- If force main diameter changes, check velocity. >2 and <10 fps

MOUND AND AT-GRADE

- Is system being installed in the tested area?
- Check contour – compare to plans
- Mound contour shall be orientated within 1% of the surface contour – SPS383.44(6)(a)(2)
- Has the area been protected from compaction? VERY IMPORTANT!
- Can soil within 8" of contour be rolled into a pencil size wire? (CM)
- Has vegetation been removed per component manual? Cut trees flush to the ground/leave stumps – compensate for large stumps if necessary. Remove vegetation over 6" long by mowing and raking + leaf layer removed (CM)
- Verify setbacks – Well setback is to any toe for mound only – Table A NR812.08
- Plow L x W – DO NOT ROTOTILL or over plow – keep off system after plowing & before sand
- ASTM C33 Sand – tested? – sand should be placed to within 2' of basal area – SPS 384.30(6)(j)
- Sufficient depth of sand between contour and system elevation?
- Verify cell dimensions
- Washed rock – ½" to 2½" in size- SPS 384.30(6)(i)
- Check lateral diameter – piping material – fitting type
- Check orifices – diameter, cleaned out, up or down, distance between
- Inspection pipes (must be Sch 40)
- Fabric
- Divert runoff away from/around mound/at-grade – is mound creating a dam in the flow of drainage?