Aqua Green Utility Inc.

Individual septic tank and pump tank requirements.

Only configurations and equipment approved by Aqua Green Utility Inc. may be used. Not following these configurations **shall be cause for disconnect** until the specifications are met.

All connections to the septic and pump tank will be:

4" schedule 40 PVC at not less than 1/8" fall per 1'

Have an Inspection port sewer popper relief valve before the septic tank and pump tank. The inspection port relief valve will be on an elevation of not less than 6" below the elevation where the building outfall line leaves the home.

4" foam core pipe is approved if it meets local code requirements

The line from the pump tank to the main line will be:

Pressure rated schedule 40 PVC minimum 1 ¼ inch

Have a piece of single strand insulated copper wire included in the ditch turned up in the utility box at the road and alarm post for future locating needs.

Pump line from pump tank to service connection should be buried at least 18"deep.

The septic and pump tank must meet the Utility's design requirements:

All tanks must be on the Utility's approved list. Other tanks may be added to approved list if they meet all requirements. Contact the Utility for details on adding additional equipment to approved list.

Shall be of a watertight design and all joints must be sealed to stop ground water intrusion and sewage leaks. Concrete tanks **must be 1 piece** tanks with sealed lid.

The septic tank will be a two chamber design of at least 1000 gallon capacity.

The pump tank will be a one chamber design of at least 1000 gallon capacity.

The septic tank will have PVC tees in each end extending at least 1/3 the water depth.

The outlet tee will include a septic tank filter.

The top of the tanks shall not be buried deeper than 24" from the surface.

The septic tank will include two approved risers to the surface.

The pump tank will include one approved riser to the surface.

The risers will have two forms of entry security. Safety screws in outer lid and a safety screen inside the risers.

Electrical Connections Minimums

All connections shall meet the national electrical code.

All connections shall be located outside of the tank.

Aqua Green Utility Inc panel may be mounted to the outside house or somewhere accessible even when no one is home.

No electrical connections are allowed inside the pump tank or riser.

Two 120 volt electrical circuits are required from the house to the alarm post. One 20 amp dedicated circuit for the pump and one separate 110 circuit for the alarm, so the alarm will work even if the pump throws a circuit breaker.

The required wire from the alarm panel to the pumps and floats in the tank shall be in PVC conduit. The system needs 12 Awg. wire color red, black, white, and green to service the two pumps. Additionally a irrigation type wire with 6+ strands is required for the float connections.

The conduit connecting the junction box to the riser must be sealed with a silicone or other sealant so as to keep corrosive gasses from entering the alarm post.

Approved Materials: (contact the Utility in advance to recommend an addition to this list)

Risers:

Polylok 3008 HD Heavy Cover or www.polylok.com 1-877-POLYLOK
Polylok 3008 RC Light Duty Cover www.varcopumper.com 1-866-872-1224
Polylok 3008-RP 24" Riser Pan or
Polylok 3008-SS 24" Safety Screen
Polylok 3008 24" Riser 6" tall
Polylok 3008-R12 24" Riser 12" tall
Polylok PL-68 Filter Cartridge (septic tank filter)
Polylok 3009-AR (adapter ring for plastic tanks)

Alarm Panel:

Aqua Green Utility alarm panel and kit prices available on www.aquagreenutility.com

Inspection Port Relief Valve S62-304 www.Plumbest.com 800-462-6991

Septic Tank:

Concrete tanks 1 piece 2 chamber septic and 1 chamber dosing tank. Also it is acceptable for an approved riser to be poured directly into the lid.

Norwesco - 1050 Plastic septic tanks part number 42250, 42248, 42283, 42293
www.norwesco.com

Hommell Concrete Company – Must be 1 piece 2 chamber poured tanks with two Polylok 24" risers and sealant between lid and tank. Also it is acceptable for an approved riser to be poured directly into the lid. Be sure to let them know when ordering. 423-623-5362

Pump Tank: 1 piece 1 chamber
Norwesco - 1050 plastic pump tanks part numbers 42249, 42247, 42282, 42292
www.norwesco.com

Hommell Concrete Company– Must be 1 piece 1 chamber poured tanks with one Polylok 24" risers and sealant between lid and tank. Also it is acceptable for an approved riser to be poured directly into the lid. Be sure to let them know when ordering 423-623-5362

Approved Pump: Myers 2NFL51-8E www.femyers.com 419-289-1144

Some local Installers: (if an installer does poor work, the Utility reserves the right to not allow him/her to do further work)
Robert Gann 423-608-4317
Waynes Excavating 865-216-9849

For additional technical assistance, call Aqua Green Utility Inc. 865-908-0432

Instructions to installers

First of all read list of approved materials and individual septic and pump tank requirements. Any materials not on the approved list will not be approved. Do not connect to the Utility Service Connection until the customer has signed and submitted the Utility's contract for service. Connecting otherwise, will be considered theft of service.

When setting your elevations for excavation be sure to meet the individual septic and pump tank requirements:
*The top of the tanks shall not be buried deeper than 24" from the surface.
*Inspection port relief valve will be on an elevation of not less than 6" below the elevation where the building outfall line leaves the home.
Keep the tanks level for proper operation. All drain lines are to be 4" PVC and have a 1/8" in 1 ' fall. When installing piping to and between tanks, be careful not to over dig so pipes and tanks are properly supported during backfill.

Some environmental agencies require a permit for any tank installation so be sure and check with your local county environmental health department.

Tools Needed:
Tractor for digging the excavation
shovel
laser level or transit and measuring rod
hand level
1 1/4 hole saw bit
Hammer or Bullet type nail gun
caulk gun
saw
PVC glue and cleaner

Additional Material not included in kit items:

4" sch40 PVC pipe and assorted fittings.
1 1/4 or 1 1/2 PVC and assorted fittings.
3/4" PVC electrical conduit.

Determine diggings and tank depths:

First of all start at where the outfall line leaves the house. Expose the line so as you can get the elevation. Next decide where you want to place the tanks. Keep in mind that the tanks should not be in a location that they will be driven over. Also tanks should be at least 10' foot from foundation walls. Tanks must be located so they can be serviced by a septic pump service truck not under patios or porches etc. Once completed tanks should be covered so as to keep rain water from flowing into them.

Before digging the tank installation determine proper elevations. This may be the most important step. Measure the distance from the top of the outfall pipe from the house to the inlet of the septic tank and note. Next measure from the top of where the pipe enters the tank to the bottom of the tank and note. Now measure from the top of where the pipe enters the tank to the top of the septic tank and note.

Now we are ready to determine our minimum tank hole depth. For this section you will need a Transit or Laser level. If you don't own one most tool rental stores have them available. Note the laser level is much easier to use.

Set up the transit or laser level near tank hole but out of the way of work to be done and dirt spoil piles. If you later need to move the transit or level you will need to re do depth

calculations. Put a measuring rod on the outfall pipe as it leaves the house. Remember this line must be at least 4" PVC if a 3" PVC leaves the house bushing it to a 4 " then measure from the bushing top. Read the out fall measurement on the measuring rod and note.

Next measure the floor level of the house on the lowest floor that has plumbing and note.

Now measure from the grade or ground level where outfall pipe leaves house and note. Is the reading on the measuring stick 8 to 8" to 14" lower than floor lever (example measuring stick reads 33 at outfall grade level and reads 25 on floor level.) Then the sewer popper can be located there. 8" is the least and a threaded tee must be used for the sewer popper. The sewer popper make sure that in time of a blockage the sewage does not back up into the house.

2" + minimum 6"

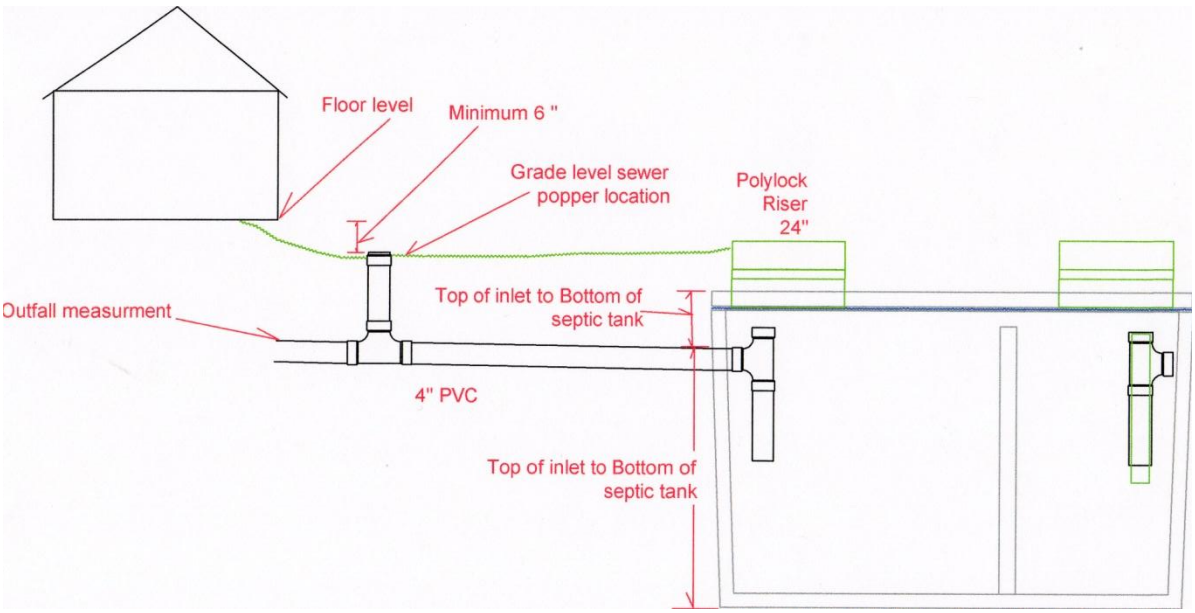
Sewer Popper

8" + minimum 6"

On most jobs the fall is far more than necessary and this step is not of any concern.

If not you must find the location for the sewer popper before a dig depth can be determined. Determine where the outfall pipe will be ran to the tank. Take the floor level measurement and deduct 8 inches. Now use the measuring stick and follow the route the outfall pipe will take to the tank. Once the measurement is at least 8" of more, lower than the floor level the

sewer popper can be located there. (example measuring stick reads 33 at sewer popper location grade level and reads 25 on floor level.)



Out fall distance to the tank inlet = _____
Distance from the top of inlet pipe of the tank to the bottom of the tank = _____
Distance from the top of the inlet to the top of the septic tank = _____
Measurement on outfall measuring rod = _____
Measurement of floor level of the house = _____
Grade level sewer popper location = _____

Now that we have our elevations let's get the tank depth. Take the outfall measurement on outfall measuring rod. (if the sewer popper location is an issue take this measurement from the outfall of the sewer popper) Deduct a minimum of 1/8 of an inch fall for each foot out fall distance to the tank inlet. (Example: outfall reading 23" distance 20' the pipe needs at least 2 1/2 inches of fall) Now deduct the distance from the top of inlet pipe of the tank to the bottom of the tank. This is the minimum elevation for the bottom of the tank hole. (example: outfall 23" + fall in pipe 2 1/2" inlet to bottom of pipe + 56" the measuring stick should read minimum of 81 1/2") For most jobs this is not an issue if the tank is located 2 ' or more lower than floor level.

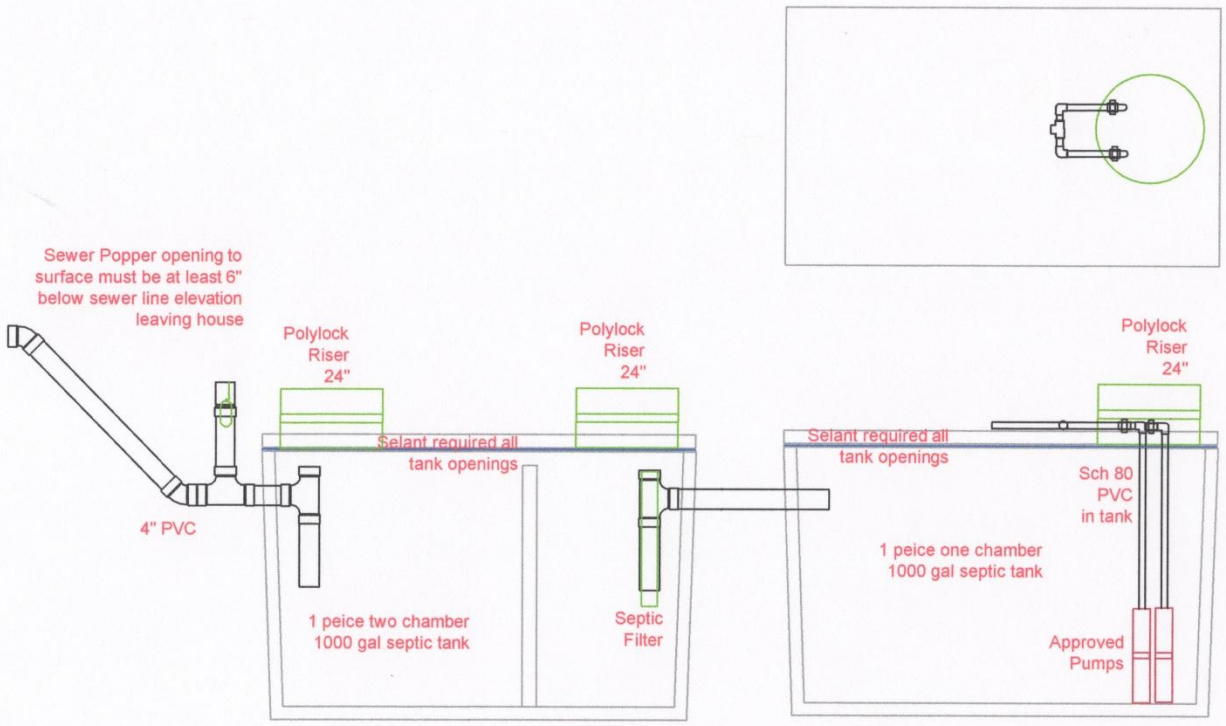
Make sure the tank hole is deep enough. Take the distance to the bottom of the tank and add it to the distance to the top of the tank and add 6" for ground cover. (example: inlet to bottom 56" + inlet to top of tank 9" + 6" cover this tank hole should be 70")

When digging the trenches to the tanks and tank holes it is important not to over dig. Leaving fill under pipes causes settling and broken lines. The bottom of the tank holes should be carefully leveled so that the tanks sit level for proper operation.

Once the septic tank is installed place PVC tees in inlet and outlet. Use PVC tees in each end of the septic tank that extends down into the sewage water at least 1/3 the water depth. The outlet tee must include a septic filter. Install a Polylok riser on each end of the septic tank be sure and put sealer between riser flange and tank lid if used. The riser flange can be fixed to the lid with cement nails. The Polylok risers must come to the finished ground surface so the system can be serviced. If a plastic tank is used, use the Polylok 3009-AR (adapter ring for plastic tanks) and seal it to the tank to keep ground water out.

Next install the dosing tank the pipe from the septic tank to the dosing tank can enter either end of the dosing tank. Be careful to make sure the pipe between the tanks is level or runs down hill. The dosing tank can be at the same level or lower than the septic tank. Care should be taken that the dosing tank is not to shallow or deep once covered.

Once the dosing tank in installed one riser should be installed on either end. If the riser is attached with a flange be sure and seal flange to tank lid then nail down with ramset pins . Next drill 2 1 1/4 holes into the riser these must be drilled along the top of the tank. The drill holes should be about 6 inches apart to give room to plumb the two pipes together along the lid of the tank. (see drawing on next page)


Sewer Popper opening to surface must be at least 6" below sewer line elevation leaving house
Polylock Riser 24"
Polylock Riser 24"
Polylock Riser 24"
Selant required all tank openings
Selant required all tank openings
4" PVC
1 peice two chamber 1000 gal septic tank
Septic Filter
Sch 80 PVC in tank
1 peice one chamber 1000 gal septic tank
Approved Pumps

Each pump sits on the bottom of the tank then run Sch. 80 PVC up to the level of the holes just drilled then attach a 90 deg turn. Next add a short piece of pipe and connect a union. connect the union so when the nut is unscrewed the nut will stay in the tank not on the pump. Then add Sch 80 pipe through the two holes just drilled. Once outside of the riser the pipes can be connected to a tee so one pipe can then be ran to the connection at the street. When running the line from the pump tank to the Utility Service Connection box, keep the line 18" deep. An insulated wire for future locating the pipe must be included in the ditch and placed in the service connection box located at street curb and riser at the other end. Once the pipe is connected at the street be sure and open cut off valve in the connection box, the check valve will hold back street pressure.

Electrical connection:

Starting at the house two circuits are needed on for the pumps and one for the alarm. The pumps need a dedicated 20 amp 120 volt circuit. The alarm must be a separate circuit the alarm will use less than 1 amp 120 volt. Mount the aqua green utility alarm control panel in a location that can accessed even if no one is home at time of service. Run the two circuits into the aqua green utility alarm control panel in conduit and connect the marked connections. The power connects in the lower left area, green is ground, white neutral, black din connector is where the 20 Amp hot line connects and the alarm hot connects to the breaker.

When the power leaves the house to go to the pumps it connects in the upper right area of the aqua utility alarm control panel. The wires needed are 12 awg. wire color red, black, white, and green to service the two pumps. Additionally a irrigation type wire with 6+ strands is required for the float connections. The 12 awg. wires connect to the larger connectors and the irrigation type 20 awg. wires connect to the smaller din connectors. The wires are ran from the aqua green utility alarm control to a grey electrical connection box connected to the outside of the riser in grey 3/4 electrical conduit. Once in the grey box Just outside the riser the wires will be connected to the pumps and floats with water proof wire nuts. The grey box is to be connected to the riser by way of a 1 1/4 inch nipple with nuts on each side. Pump and float wires feed through the nipple and are connected in the grey box. Coil and tie extra wire in tank to leave room to pull floats and pumps from tanks for service as needed without disconnecting. Once wires are connected a sealant is to applied into the 1 1/4 nipple to keep sewer gases from escaping the tank and corroding connections.

The Aqua Green Utility Inc.

For additional technical assistance call Aqua Green Utility Inc. 865-908-0432. Remember only use materials approved in advance. Do not call at the time of install for substitutions, the answer will be NO.