SPECIFICATIONS FOR NEW RESIDENTIAL INSTALLATIONS

While new installations are the responsibility of the property owner, the District assumes maintenance responsibility and ownership of the installation one year from the date of the final inspection. During this first year period, routine maintenance and repairs will be performed by the District's operators, other than those due to improper installation.

As the eventual owner of the equipment being installed, our specifications are more stringent than State code. They are based on maintaining the same type of equipment as installed in the original system. This reduces cost to the citizens of the district by:

1. Minimizing inventories of spare parts
2. Minimizing the need for extra training for operators on different types of equipment and materials
3. Minimizing the possibility of breakdowns.

Therefore, strict adherence to spec's will be required by the District. Assistance and clarifications can be obtained by calling the district operator or the operations manager at 503-588-5304. Please call for a pre-construction meeting with an operator prior to ordering equipment and starting your project.

PERMITS AND INSPECTIONS

A construction permit must be obtained prior to installation. These permits are available from the district operator, Marion County Public Works, 5155 Silverton Road NE. Permits may modify or add to the requirements of these specifications.

Locate requests must be made prior to any excavation. Locates can be obtained by calling 1-800-332-2344.

When working in the Right of Way on County or State Roads, ROW permits are the responsibility of the property owner. All traffic control requirements of the appropriate Road Authority must be met.

The Brooks Community Service District is staffed part-time. Inspections must be requested at least 24 hours in advance, and may not be completed for 48 hours on occasion. However, nearly all can be done in accordance with the installer=s schedule.

SEPTIC TANKS

Tank Source:	Willamette Greystone, Eugene (541)726-7666, or Waite's Concrete Products, Canby (503)266-2670. Specify that the tank must be constructed with Brooks specifications. They will include a cast band to accept the access riser.
Size:	Size must be approved by District (see tank sizing policy). Heavy duty models will be required for burial of 3' or deeper. Specify a 4" or 6" PVC wall sleeve to match the size of the gravity line needed.
Tank installation:	**Willamette Greystone and Waites Concrete provides tank installation and testing instructions with each tank. Follow these instructions, and if you feel there is a discrepancy between our requirements and theirs, please call before continuing.** Use 4" of well-compacted sand or 3/4 minus rock under the tank, level to 1/4" in 20'. If native soil is not suitable for tank support, the District may require over-excavation and more sand or crushed rock**. Call for inspection prior to setting tank. The Operator will inspect the tank cavity, and should be present for the placing of the tank.**
	Around and under external piping, use compacted 3/4"-0" crushed rock.
	Compact backfill over and around tank to a minimum of 85% maximum dry density per ASTM T-99 test specification.
	Tank watertight test: **Call to schedule inspection. Follow Willamette Greystone or Waite's Concrete Products instructions regarding backfilling before water testing.** Then fill to 2" above the riser and riser ring joint. 1/2" of decline in the water level in 24 hours is allowable. Tanks may be soaked 24 hours prior to test. A tank may be rejected by the District if it fails a second test after being repaired.
Access Riser Source:	Orenco, Roseburg. 541-459-4449
Access Riser size:	Single pump: 24" Duplex (double) pump: 30" Effluent Filter for Settling Tank: 24"
Riser installation:	Install to place lid 1-3" above the surrounding surface in non traffic areas and 3-6" below manhole lid in traffic areas.
	Bond with two-part epoxy from Orenco, cured 24 hours before back-filling. **Call for inspection prior to backfilling.**
Riser lids in non-traffic areas:	Orenco lids to match riser size, installed with gasket and hex bolts.
Riser lids in traffic areas:	Orenco lids to match riser size, installed with gasket and hex bolts inside cast iron manhole frame in 7" concrete traffic slab per the districts standard drawing. **Call for inspection prior to pouring concrete.**
	Manlid shall be sealed with a neoprene O-ring, 3-bolt design with 1/2" stainless bolts, with two cast recessed lifting bars. Lids to say Sewer or S. 30" lids shall be aluminum.

GRAVITY SEWER LINE

Gravity Pipe	See Diagram # 2
	4" or 6" PVC ASTM 3034 SDR 35, bell and spigot with rubber gasket joints or ABS glue joint pipe. Rubber gasket joints shall be "Ring Tite" or "Fluid Tite" brands as manufactured by JM Pipe or Certain Teed pipe.
	Fittings and service cleanouts shall be of the same type, class, and grade of material as the pipe.
	Rubber couplings shall be Fernco Series 1006, 1056, or approved equal.
	Minimum cover is 24” unless authorized by the District.
	Slope shall be at least 1/4" per foot for 4", 1/8" per foot for 6".
	Use a minimum of bends and fittings. Use no bends greater than 1/16 bend unless approved by the District
Trace Wire	Install 12 gauge solid-core trace wire with green insulation from the clean-out to the tank riser, wrapping around each twice. Connect to clean-out at ground level. Secure to pipe also every 20' and at all bends.
	Make splices and connections with waterproof heat shrink splice kits, or approved underground connector.
Clean-outs	One at least five feet from the building, and one at least every 100 feet. Caps should be installed slightly below grade. In improved areas, cover with a Brooks Type 1-RT or 3T box.
Backfill	**Call for an inspection of the gravity line prior to backfilling.**
	Thoroughly compact bedding and backfill material under and around service piping connection to STEP tank so as to prevent differential settling and leakage into or out of connection.
	Provide 4" pipe bedding of 3/4"-0" crushed rock or sand, free of sticks, stones, or other debris. Install piping and provide 12 inches of 3/4"-0" crushed rock or sand as pipe zone material.
	In improved areas, above the pipe zone, use 3/4"-0" crushed rock and compacted to 95% of maximum dry density per ASTM T-99 test specification. Compacted native material may be used in unimproved areas.
	Minimum cover is 24 inches unless authorized by the District.
Using near waterlines	Installations near waterlines must meet appropriate county regulations and building codes. For specific rules, contact the Building Inspection Department.

PRESSURE SERVICE LINE

Pressure Piping and fittings	See Diagram #3.
	Schedule 40 or 80 PVC, 1" for simplex and 2" for duplex. ABS will not be accepted. Solvent weld, using primer and cement
	Ball valves shall be PVC, the same size as the service line, located in a valve box.
	Swing check valves are to be bronze or PVC and same size as service line.
	<u>Stainless Steel Saddle Taps:</u> Call for an inspection; an operator must be present during hot tap connections, and they must be done by a licensed contractor or plumber.
	Pressure service lines shall be pressure tested to 100 psi with no more than 5 psi loss in 30 minutes. **Call for an inspection.**
Trace Wire	Install 12 gauge solid-core trace wire with green insulation continuously from the force main to the tank riser, wrapping around the riser twice. Secure to pipe also every 20' and at all bends. Extend a loop of wire to the top of each valve box.
	Make splices with waterproof heat shrink splice kits, or approved underground connector.
Valve box assemblies	See Diagram #3 for installation diagram
	Box and cover are to be concrete with cast iron ring and lid. The lid is to say "Sewer." The box is to be a Brooks 1RT or 3T, as appropriate, with valve box extension as required.
	Valve assembly to be an in-line ball and check valve. A ball valve shall be located in an 8-inch PVC riser with Brooks precast concrete box and cast iron lid above, marked "Sewer". A plastic box may be allowed if in a landscaped area protected from traffic, and when approved by the District Operator. The check valve shall be direct buried, located adjacent to and downstream of the ball valve. "Goose neck" installations are no longer required by the district.
	Install valve boxes true and plumb so that valves operate smoothly. Notch risers such that there is a 4" minimum clear distance from the pressure service line. Keep dirt and debris out of valve boxes. The valve box/riser assembly shall be extended at least 4" from the fully collapsed position.
Installation and Backfill	Install pressure service line on a uniform grade from the septic tank to the force main unless site conditions prohibit. Clean the interior of pipe of foreign material before connection to force main.
	Call for an inspection prior to backfilling.
	Provide 4" pipe bedding of 3/4"-0" crushed rock or sand, free of sticks, stones, or other debris. Install piping and provide 4 inches of 3/4"-0" crushed rock or sand as pipe zone material. Lay pipe with 30" minimum cover.
	In paved and graveled areas, backfill above pipe zone with 3/4"-0 or 1"-0"crushed rock, compacted to 95% of maximum dry density per ASTM T-99 test specification. Compacted native materials can be used in other areas.

Flow meters	Not required in residential applications.

PUMPS, CONTROLS, AND VAULT ASSEMBLIES

Equipment Source:	Orenco, Roseburg. 541 459-4449
Pump models	See Diagram #1 for installation
	PF 10 05 11 (formerly P 10OSI 05 HHF) for 10 gpm applications PF 20 05 11 (formerly P 20OSI 05 HHF) for 20 gpm applications
Float Switch Assemblies	Simplex applications (one pump) will use Model MF-AB Duplex (two pumps) will use Model MF-4A
	Float switches will be mounted to a removable PVC stem from Orenco
	Mount with no less than one inch of tether length.
Screened Pump Vault Assemblies	Simplex and duplex applications will use Model pvu57-2419 Biotube assembly
Discharge hose and valve	Model HV100B. One is required for simplex installations, two for duplex
Effluent Filter Assembly	For use where pump tanks and filter tanks are used in series. See Diagram #4.
	Simplex applications use Orenco Biotube Model FT-1554-36. Duplex use two Model FT 1254-36.
	Install so as to be easily removable from the tank, using Schedule 40 PVC.
Pump Control Panels	Must be serviced by a dedicated circuit; Simplex, 20 amp; Duplex, 30 amp.
	Simplex use Model S-1ETM CT TS Duplex use Model DAX-1ETM CT TS An inside mounted alarm test push button must be installed on both models.
	Mount to building exterior within sight of the septic tank riser, under an eave and out of the sunlight where possible.
	For manufactured homes, an optional mount is on a 4" x 4" x 8' pressure treated post. Use 3/4" exterior grade plywood, painted grey, for the mounting backboard.
	Bottom of the panel on buildings or posts must be 5' above grade
Electrical wiring	No 16 AWG THHN or TFFN
Electrical Conduit and fittings	Schedule 40 PVC Conduit, UL listed; Fittings to be OZ Gedney type - EYA or equal
	Conduit sealing compound must be NEC approved

	Install 18" below grade or 24" below grade in paved or gravel areas, or where required by electrical code.
	Splice box to be PVC, mounted inside the access riser.
	Call for an inspection by a District operator prior to backfilling.
	Marion County Building Inspection Department must be called for an electrical inspection; this must be completed prior to making the sewer system operational. The District will inspect the system as to compliance with their specifications, but operators are not licensed electricians and cannot perform electrical inspections.
	Backfill with native material in non-traffic areas. In traffic areas, use 3/4"-0 or 1"-0 crushed rock compacted to at least 95% maximum dry density per ASTM T-99 test specification.