Information provided here is advisory only and intended for planning purposes.

1. Building sewers must run at a uniform slope of not less than 0.25 inches per foot toward the point of discharge.
2. Building sewer piping should be laid on a firm, stable bed throughout its entire length.
3. Building sewers must be installed a minimum of 12 inches below the surface of the finished grade.
4. Cleanouts shall be placed:
    a. Inside the building near the connection between the building drain and building sewer, or
    b. Outside the building at the lower end of a building drain and extended to grade, and
    c. At intervals of up to 100 feet in straight runs, and
    d. At every change in alignment or grade in excess of 22.5 degrees, except that no cleanout will be required for one 45 degree change of direction or one 45 degree offset.

3.2.3 Septic Tank and Dosing Chamber Installation

Septic tanks and dosing chambers may not be modified from their approved design (e.g., core drilling and roto-hammer) without prior approval from DEQ, which must be obtained through a manufacturer's submittal as described in section 1.4.2.1.1 detailing the proposed structural changes.

Septic tanks and dosing chambers shall be installed level and should be placed on undisturbed original soil if possible. Some fill is often needed to make a smooth bearing surface in the bottom of the excavation that will receive the tank or chamber. A tank or chamber should not be installed on unconsolidated or uncompacted fill greater than 6 inches deep. If fill material greater than 6 inches deep is necessary to level the installation surface, it should be compacted to 95% proctor to mitigate potential settling issues. All plastic, polyethylene, and fiberglass tanks must be installed according to the manufacturer's recommendations including required bedding material for the tank excavation (IDAPA 58.01.03.007.18).

Concrete tanks or chambers may leak if they are not coated with a bituminous coating or another sealer. Such sealing is recommended in all dosing chambers and septic tanks placed in or near ground water or in porous soils. The sealant should cover all of the tank walls and tank bottom. The sealant may be placed on the inside or outside of the septic tank. If located on the inside of the tank, the sealant should be compatible with sewage. If located outside of the tank, the required manufacturer labeling must still be legible for the inlet and outlet, manufacturer's name or trademark, or the liquid capacity of the tank somewhere on the tank body or tank lid.

If a septic tank or dosing chamber is installed in seasonal high ground water, a vertical separation distance of 2 feet shall be met from the tank lid (IDAPA 58.01.03.007.17). Monolithically constructed tanks (one-piece tanks) are highly recommended to be used if the tank is to be installed in seasonal high ground water. Multipiece tanks should be avoided for ground water installations if possible. If a multipiece tank is installed in ground water, the vertical separation distance shall be to the top of the tank. Multipiece tanks installed in ground water shall be leak tested upon installation.

All septic tanks must have a riser if the manhole opening of the tank is deeper than 24 inches below the ground surface. The riser must bring the access lid within 18 inches of the ground surface (IDAPA 58.01.03.007.19). It is highly recommended that all tank access lids be brought to grade with a riser and fitted with a secured lid regardless of the tank's installation depth. All dosing chambers must have the access manholes extended to the ground surface regardless of the chamber's installation depth.

ABS schedule 40 or equivalent is recommended to span the tank excavation or to connect septic tanks to dosing chambers or other septic tanks in a series (IDAPA 58.01.03.007.21). The pipe used to span septic tank and dosing chamber excavations must also extend at least 3 feet beyond the excavation (IDAPA 58.01.03.007.21). Thinner-walled ASTM D3034 plastic pipe may be used for these applications if the excavation void at the tank's sides is compacted with fill material (IDAPA 58.01.03.007.21.b). The material must be granular, clean, and compacted to 90% proctor density. The ASTM D3034 grade of plastic pipe is also suitable if it is placed on undisturbed earth. See IDAPA 58.01.03.007.21 for inlet and outlet piping requirements.

After installation, septic tanks and dosing chambers require periodic inspection and maintenance. Inspection and maintenance of these tanks is easier if the manhole access lids are brought to grade as described above. Minimum maintenance includes periodic pumping of the tank as described in section 6. Other maintenance may include cleaning the septic tank effluent filter (section 5.9) or cleaning the pump screen in the dosing chamber. All materials washed from a filter or screen should be discharged into the inlet side of the septic tank. Also periodically inspect the inlet and outlet baffle of the septic tank, or perform maintenance on the baffles as needed.

Occasionally, a septic tank may be abandoned due to age, condition, or replacement. Septic tank abandonment may also be required if in the Director's opinion (see IDAPA 58.01.03.003.10 for definition), the abandonment (IDAPA 58.01.03.003.01) is necessary to protect the public's health and safety from eventual collapse of the septic tank or misuse. The abandonment of a septic tank or dosing chamber, if necessary, must be done according to the following requirements (IDAPA 58.01.03.007.23):

1. Disconnecting the inlet and outlet piping.
2. Pumping the scum and septage using a permitted pumper with an approved disposal location.
3. Filling the septic tank with earthen materials, or
4. Physically destroy or removing the septic tank from the ground.

Septic Tank to Lift Station Conversion

In some circumstances, an existing subsurface sewage disposal system drainfield may have been installed deeper than the currently allowed maximum installation depth for a subsurface sewage disposal system. Upon repair or replacement of the existing system, it may be necessary to raise the discharge point elevation of the effluent to meet the current installation depth standards for the drainfield. The following recommendations should be met when choosing a method to accomplish this action:

1. Lifting effluent prior to the drainfield may be done in one of two ways:
   a. Installation of a septic tank or dosing chamber after the existing septic tank.
      1) The septic tank or dosing chamber must have an approved bury depth meeting the depth of the existing septic tank.
      2) A pump must be installed, meeting the requirements in section 4.20, in the new septic tank or dosing chamber to lift the effluent to the maximum drainfield installation depth.
   b. Conversion of the existing septic tank into a lift station to raise the effluent into a newly installed septic tank that is capable of gravity flow to the maximum drainfield installation depth.
2. Either of the methods listed in item 1 are allowable, but the recommended method is the installation of a septic tank or dosing chamber after the existing septic tank (oversized risers are recommended for access to these tanks). This is due to the following reasons:
   a. The wastewater undergoes primary treatment (clarification in the septic tank) prior to passing through a pump.
   b. Wastewater that has not undergone primary treatment prior to pumping does not settle out in the septic tank as well once it has passed through a pump.
   c. Less solids, fats, oils, and greases associated with wastewater are passed to the drainfield if the wastewater undergoes primary treatment prior to passing through a pump.
3. If an applicant or installer elects to convert an existing septic tank into a lift station instead of installing a septic tank or dosing chamber after the existing septic tank, the following should be taken into consideration:
   a. The conversion of the septic tank into a lift station must be done under a permit from the Idaho Division of Building Safety Plumbing Program and Electrical Program.
      1) The Plumbing Program inspects everything from the converted lift station up to the newly installed septic tank.
      2) The Electrical Program inspects all electrical connections and installation associated with the lift station pump.
      3) A subsurface sewage disposal installer's registration permit is not a substitute for a proper plumbing or electrical license.
   b. The Idaho State Plumbing Code allows a lift station to discharge the entire volume of the lift station when the pump turns on.
      1) This will cause the entire volume of the lift station to discharge to the new septic tank with each pump cycle if the pump control floats are not adjusted.
      2) It is recommended that lift station pump control floats be adjusted to discharge a maximum of 25% of the daily design flow of the subsurface sewage disposal system with each pump cycle.
4. It is also important that the applicant and installer protect the drainfield to the best of their ability if a lift station is installed prior to a septic tank. The following minimum recommendations may help achieve this goal:

a. An effluent filter may be installed in the outlet baffle of the new septic tank and the outlet manhole brought to grade through the installation of a lid riser to aid in effluent filter maintenance.
b. The septic tank may be oversized by a 1-day system design flow to increase retention and settling time of the wastewater in the septic tank prior to discharge to the drainfield.
c. A two-compartment septic tank may be installed to aid in settling of the wastewater in the septic tank prior to discharge to the drainfield.
d. The pump used in the lift station may be capable of passing larger solids (not larger than the transport piping from the lift station to the septic tank) and grinder-type pumps are not recommended.

3.2.4 Drainfields

Whether it is a trench or a bed, the drainfield should not be constructed when the soil is near or wetter than its optimum moisture (IDAPA 58.01.03.008.06). At optimum moisture, soil will compact to its maximum ability and thus reduce its capability to transmit water. This ability to compact and restrict flow is particularly true of finer soils, such as silt loams and clay loams. It is not as critical in sands or sandy loams.

If it is entirely unavoidable to excavate the drainfield when the soil is wetter than its optimum moisture content, then the trench sidewalls and trench bottom in the excavated drainfield should be raked to relieve any compaction. Backhoe buckets and teeth can effectively smear both trench sidewalls and trench bottoms. Therefore, raking should be done manually with a strong iron garden rake after all excavation with a backhoe is complete and before the drainrock is put in place.

Drainrock should be checked for cleanliness before it is placed in the trenches. Long transportation time may generate additional fines. If drainrock is found to be unsuitably dirty when it arrives at the site, it can often be cleaned in the truck by tipping the truck bed slightly and washing the rock with a strong stream of water.

Trenches do not have to be constructed straight. It is always preferable to follow the contour of the land. The drainfield must not be installed in floodways, at slope bases, in concave slopes, or depressions. Drainfield areas shall be constructed to allow for surface drainage and to prevent ponding of water over the drainfield.

Table 3-2 gives the lengths of trenches in the seven soil subgroups (A-2 has two application rates; see section 2.3, Table 2-9).

Drainfields larger than 1,500 ft^2 trench area bottom are prohibited from being constructed as a standard (gravity) drainfield (IDAPA 58.01.03.008.04). Drainfields exceeding 1,500 ft^2 in total trench bottom area must be pressure-dosed (section 4.20).